

1-1986

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An aerial photograph of the University of Dayton campus. The image shows a mix of brick academic buildings, a large modern building with vertical stripes, a large stadium, and a church. There are green fields, trees, and parking lots scattered throughout the campus. The text "Graduate Issue" is centered at the top, and "UNIVERSITY OF DAYTON BULLETIN" is written in large letters across the top. The date "January, 1986" is in the bottom right corner.

**Graduate Issue**

**UNIVERSITY OF DAYTON BULLETIN**

**January, 1986**







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Mailing Address: University of Dayton, Dayton Ohio 45469

Telephone: University of Dayton (513) 229-0123  
University Office of Admissions (513) 229-4411  
University Office for Graduate Studies (513) 229-2343  
University of Dayton School of Law (513) 229-3211

DAYTON, OHIO 45469  
THE UNIVERSITY OF DAYTON BULLETIN  
PUBLICATION CONTROL NO. 391810  
JANUARY 1986

Volume LXXXVII

Number 1

Published by the University of Dayton, 300 College Park Avenue, Dayton, Ohio 45469. Issued five times a year; once in January, semi-monthly in April, and semi-monthly in August. Second Class Postage paid at Dayton, Ohio.

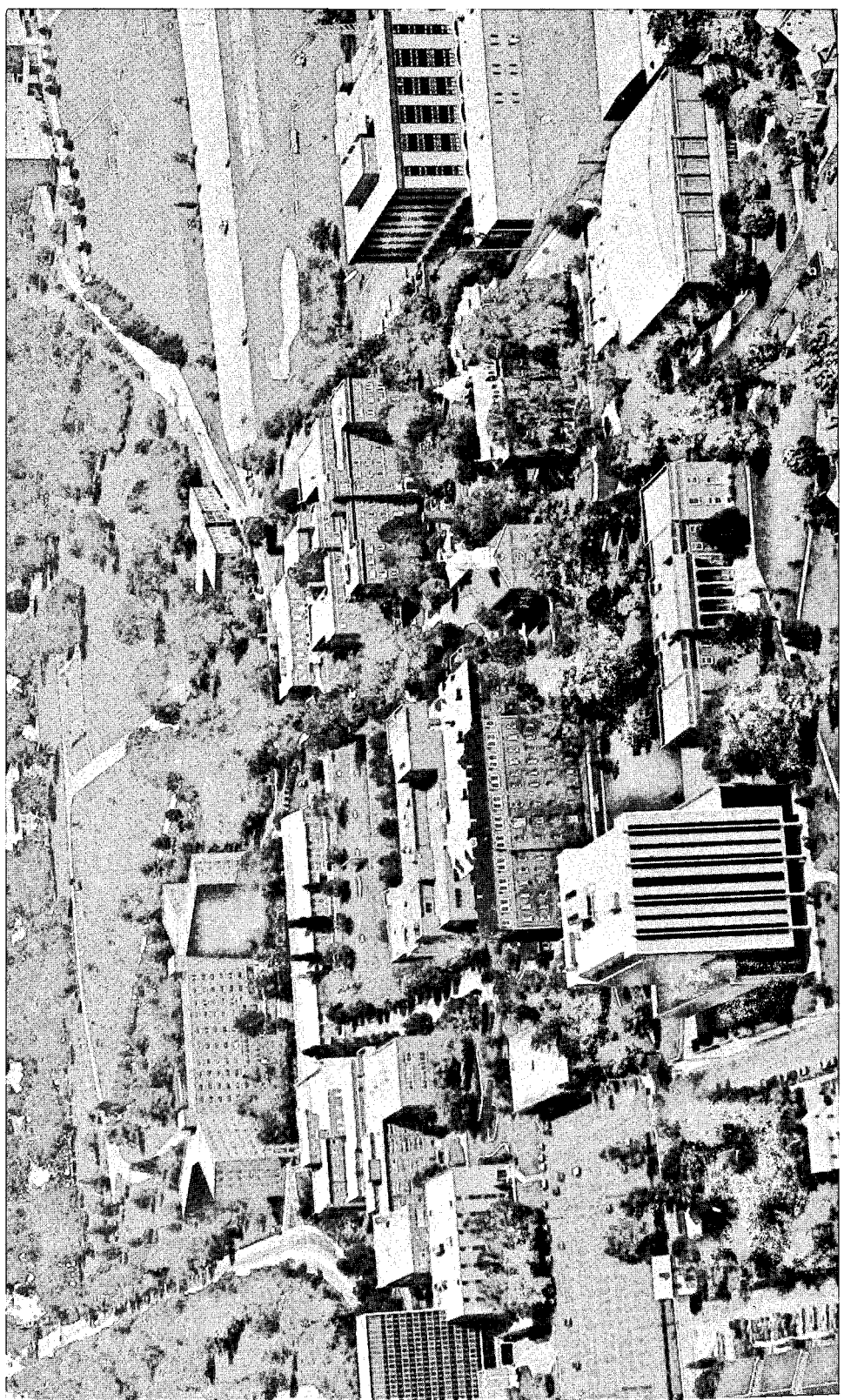
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**UNIVERSITY OF DAYTON BULLETIN**  
**GRADUATE ISSUE**

**JANUARY 1986**

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# 1985-86 ACADEMIC CALENDAR

## SECOND TERM

### JANUARY

3, Friday	Last day to complete registration
6, Monday	Classes begin at 8:00 a.m.
15, Wednesday	Last day to change schedules
20, Monday	Martin Luther King Day — Faculty Workshop — no day or evening classes except those held only once weekly at 4:30 p.m. and after
21, Tuesday	Last day to change first term grades
27, Monday	Last day to withdraw without record

### FEBRUARY

7, Friday	Last day to submit candidacy for graduation
17, Monday	Lincoln-Washington Day — no day or evening classes except those held only once weekly at 4:30 p.m. and after
18, Tuesday	Midterm Break — no day or evening classes except those held only once weekly at 4:30 p.m. and after

### MARCH

27-30, Thursday- Sunday	Easter Recess; Thursday evening and Saturday morning MBA classes meet
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### APRIL

11, Friday	General Faculty Meeting, 3:00 p.m.
21-25, Monday-Friday	Examinations
26, Saturday	Examinations for Saturday-only classes; second term ends after last examination
27, Sunday	Commencement
28, Monday	Grades due in Registrar's Office

### JUNE

6, Friday	Last day to change second term grades
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## THIRD TERM — First Session

### APRIL

30, Wednesday Last day to complete registration

### MAY

1, Thursday

6, Tuesday

8, Thursday

Classes begin at 8:00 a.m.

Last day to change schedules

Feast of the Ascension—no day or evening classes except graduate classes held at 4:30 and after

16, Friday

Last day to withdraw without record from first session courses

26, Monday

Memorial Day—no classes

27, Tuesday

Last day to withdraw without record from full third term

### JUNE

6, Friday

12-13, Thursday-Friday

14, Saturday

Last day to change second term grades

Examinations

Examinations for Saturday-only classes; first session ends after last examination

17, Tuesday

Grades due in Registrar's Office

### JULY

18, Friday

Last day to change first session grades

## THIRD TERM — Second Session

### JUNE

13, Friday

16, Monday

20, Friday

20, Friday

25, Wednesday

Last day to complete registration

Classes begin at 8:00 a.m.

Last day to change schedules

Last day to submit candidacy for graduation

Last day to withdraw without record from second session courses

### JULY

4, Friday

18, Friday

25-26, Friday-Saturday

26, Saturday

26, Saturday

27, Sunday

29, Tuesday

Independence Day—no classes

Last day to change first session grades

Examinations

Examinations for Saturday-only classes

Second session ends after last examination

Diploma exercises

Grades due in Registrar's Office



# 1986-87 PROPOSED ACADEMIC CALENDAR

## FIRST TERM

### AUGUST

27, Wednesday Classes begin at 8:00 a.m.

### SEPTEMBER

1, Monday Labor Day-no classes

### OCTOBER

13, Monday Columbus Day-no day or evening classes except those held only once weekly at 4:30 p.m. and after

### NOVEMBER

27-28, Thursday-Friday Thanksgiving recess

### DECEMBER

8, Monday Examinations for Saturday-only classes

12-18, Friday-Thursday Examinations

18, Thursday First term ends after last examination

20, Saturday Diploma exercises

## SECOND TERM

### JANUARY

5, Monday Classes begin at 8:00 a.m.

19, Monday Martin Luther King Day — Faculty Workshop — no day or evening classes except those held only once weekly at 4:30 p.m. and after

### FEBRUARY

16, Monday Lincoln-Washington Day—no day or evening classes except held only once weekly at 4:30 p.m. and after

17, Tuesday Midterm Break—no day or evening classes except those held only once weekly at 4:30 p.m. and after

### APRIL

16-20, Thursday-Monday Easter recess

19, Sunday Easter

20-24, Monday-Friday Examinations

25, Saturday Examinations for Saturday — only classes

25, Saturday Second term ends after last examination

26, Sunday Commencement

## THIRD TERM — First Session

### MAY

4, Monday  
25, Monday  
28, Thursday

Classes begin at 8:00 a.m.  
Memorial Day—no classes  
Feast of the Ascension—no classes except MBA evening classes

### JUNE

15-16, Monday-Tuesday Examinations

## THIRD TERM — Second Session

### JUNE

18, Thursday

Classes begin at 8:00 a.m.

### JULY

3, Friday  
29-30, Wednesday-  
Thursday

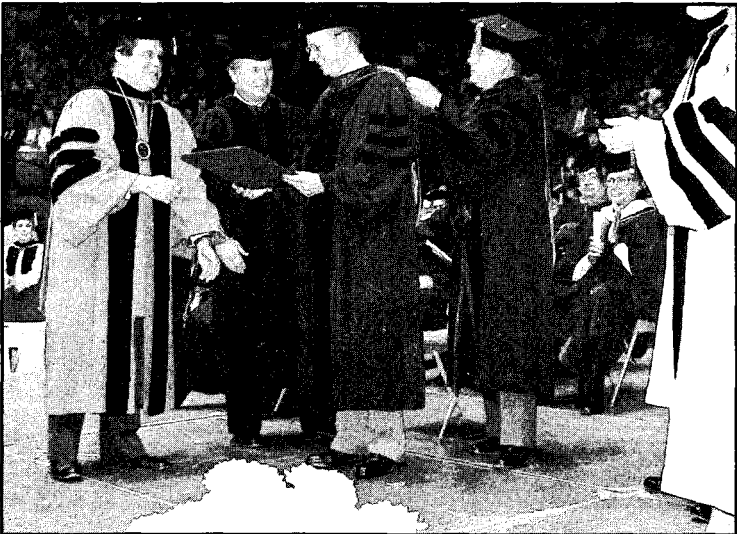
Possible holiday

Examinations

### AUGUST

2, Sunday

Diploma exercises



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# I THE UNIVERSITY OF DAYTON

Founded in 1850

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The University of Dayton is a private, coeducational school founded and directed by the Society of Mary (the Marianists), a Roman Catholic teaching order. <sup>1</sup> It is among the nation's largest Catholic institutions of higher learning. Aware of the cultural richness of diversity, the University numbers among its students and faculty representatives of many faiths. For the same reason, the University has consciously drawn its students and faculty not only from the immediate community and adjoining states but from across the country and from numerous foreign countries.

The main campus is seventy-six landscaped acres on a hill overlooking the city of Dayton, Ohio. The buildings are a pleasantly eclectic architectural mixture of old and new. The faculty is well-qualified and competent to provide students with superb instruction and prudent counseling.

A lively, friendly atmosphere; reasonable tuition rates; financial aid plans; numerous and varied religious, cultural, and social opportunities; an early-semester calendar allowing a number of study-recess options; intercollegiate and intramural athletic programs for both men and women; academic options such as interdisciplinary programs, field study and internships, academic, professional, and personal counseling; cooperative work-study plans; a placement service for students and graduates — these exemplify the many aspects of the character of the University of Dayton.

## BRIEF HISTORY

In March 1850, Marianist Father Leo Meyer, recently arrived from France, purchased Dewberry Farm in Dayton from John Stuart, a descendent of the old royal family of Scotland. The University of Dayton had its earliest beginnings here on July 1, 1850 when St. Mary's School for Boys, a frame building that not long before had housed farm hands, opened its door to fourteen primary students from Dayton.

By 1860, when Brother Maximin Zehler became president, enrollment approached one hundred. St. Mary's grew; an old history refers to the period of 1860-1875 as "the brick-and-mortar years." In 1870, visitors marveled at new St. Mary's Hall, the largest building in the city of Dayton, and called it Zehler's

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<sup>1</sup>The Society of Mary, founded in France in 1817 by Father William Joseph Chaminade, presently conducts schools throughout the United States and in Africa, Australia, Canada, Japan, Europe, and South America. The Society operates Chaminade College in Hawaii and St. Mary's University in San Antonio, Texas.



it Zehler's Folly. But when the "college department" moved into it in 1871, it proved not too big at all. Construction went on.

Known at various times as St. Mary's School, St. Mary's Institute, and St. Mary's College, the school established its present identity in 1920, when it was incorporated as the University of Dayton. The same year the University started its tradition of evening and Saturday classes, to serve the adult members of the surrounding community. In 1922, a School of Law opened, also with evening classes. Other graduate programs followed. In 1923, the first summer session took place, its classes open to women as well as men. This decade of academic growth and innovation was as well a time of increased emphasis on sports here and across the country. Sports, however, were no novelty here: in 1874, for example, St. Mary's Institute's new gymnasium was the only one of its kind in Ohio, and tradition holds that the first organized basketball game in the state took place there.

The 1930's and the early 1940's, for obvious reasons, were in many ways a time of retrenchment for the University of Dayton as for most other schools. In 1935, even as it closed its preparatory school and graduated its last class from the old law school, the University inaugurated a college for women, with sisters of Notre Dame in charge of 27 entering students. Two years later, the college for women closed, the deans opened all divisions to women, and the University of Dayton became co-educational.

Today, the University of Dayton is a modern comprehensive university consisting of the College of Arts and Sciences; the School of Business Administration; the School of Education; the School of Engineering and the Division of Engineering Technology; the School of Law; and the Research Institute.

Advanced degrees are given in the College and all Schools. The University of Dayton is accredited as a comprehensive university and is listed in the top 100 research universities in the United States.

## STATEMENT OF PURPOSE

A graduate school, through its faculty, seeks to create and maintain the academic milieu for excellence in graduate work. Therefore, its influence and encouragement extend first to its own members and their scholarly activities. Because it conceives as the form and substance of graduate work not the credits accumulated but the mastery of a subject and the understanding of its relationship to kindred subjects, the graduate school seeks further to impart to its students thorough knowledge in academic fields, special skills in research, and sharpened powers of independent thought. Yet, while it gives them the resources, the guidance, and the inspiration of a scholarly staff in its classrooms, laboratories, and libraries, it expects the students themselves to bring marked initiative and energies to their work and to assume full responsibility for the progress of their studies.

In short, graduate work, for the student at the University of Dayton, has for its purpose an integrated program of advanced study based on adequate undergraduate preparation in a specific field. It presupposes academic and personal maturity and makes more than an average demand upon the

initiative, the industry, and the scholarship of the candidate for an advanced degree.

The official statement of purposes of the University of Dayton was approved by the Board of Trustees May 14, 1969:

The University of Dayton, by tradition, by legal charter, and by resolute intent, is a church-related institution of higher learning. As such, it seeks, in an environment of academic freedom, to foster principles and values consonant with Catholicism and with the living traditions of the Society of Mary. Operating in a pluralistic environment, it deliberately chooses the Christian world-view as its distinctive orientation in carrying out what it regards as four essential tasks: teaching, research, serving as a critic of society, and rendering public service.

The University of Dayton has as its primary task to teach — that is, to transmit the heritage of the past, to direct attention to the achievements of the present, and to alert students to the changes and challenges of the future. It regards teaching, however, as more than the mere imparting of knowledge; it attempts to develop in its students the ability to integrate knowledge gained from a variety of disciplines into a meaningful and viable synthesis.

The University of Dayton holds that there is harmony and unity between rationally discovered and divinely revealed truths. Accordingly, it commits its entire academic community to the pursuit of such truths. It provides a milieu favorable to scholarly research in all academic disciplines, while giving priority to studies which deal with problems of a fundamentally human and Christian concern. It upholds the principle of responsible freedom of inquiry, offers appropriate assistance to its scholars, and endeavors to provide the proper media for the dissemination of their discoveries.

The University of Dayton exercises its role as critic of society by creating an environment in which faculty and students are free to evaluate, in a scholarly manner, the strengths and weaknesses found in the institutions developed by man. While as an organization it remains politically neutral, objective and dispassionate, it encourages its members to judge for themselves how these institutions are performing their proper tasks; to expose deficiencies in their structure and operation; to propose and to actively promote improvements when these are deemed necessary.

The University of Dayton recognizes its responsibility to support, with means appropriate to its purposes, the legitimate goals and aspirations of the civic community and to cooperate with other agencies in striving to attain them. It assists in promoting the intellectual and cultural enrichment of the community; it makes available not only the resources that it possesses, but also the skills and techniques used in the accumulation and dissemination of knowledge. Above all, it strives to inspire persons with a sense of

community and to encourage men and women of vision who can and will participate effectively in the quest for a more perfect human society.

## **ADMINISTRATIVE STRUCTURE**

The University of Dayton includes the College of Arts and Sciences and four professional schools: the School of Business Administration, the School of Education, the School of Engineering (including Engineering Technology), and the School of Law. The Deans, through their departments, administer the undergraduate and graduate programs. The Associate Provost has the overall responsibility for all graduate programs, and also administers all research activities connected with the University. The administrative head for academic affairs is the Vice President for Academic Affairs and Provost.

## **ACADEMIC YEAR**

The University of Dayton operates an early semester, split third-term calendar. The academic year begins with the fifteen-week fall term, which ends before Christmas. The winter term, also fifteen weeks, begins in January and ends late in April. The third, or spring-summer term, is split into two complete sessions of six weeks each.

The advantages of such a calendar are many. Students may enroll for the traditional fall and winter semesters and have a four-month summer vacation; or they may add half terms or full terms to enrich their programs or speed the completion of their graduate requirements. The University holds graduation ceremonies at the end of each term. Students who are employed have extra time in spring and summer; or they may enroll for the third term and work during the fall or winter term.

## **ACCREDITATION**

American Bar Association for its School of Law  
Association of American Law schools for its School of Law  
National Association of Schools of Music  
National Council for Accreditation of Teacher Education  
North Central Association of Colleges and Schools  
State of Ohio Department of Education

The University has the approval of the following:

American Chemical Society for its program in Chemistry  
American Dietetic Association for Plan IV (Program S7) in  
Home Economics  
American Medical Association for its Premedicine program  
Council on Social Work Education  
National Association for Music Therapy  
Ohio League of Law Schools for its School of Law

The University of Dayton is officially accredited by the following agencies:

Accreditation Board for Engineering and Technology, Inc., for chemical, civil, electrical, and mechanical Engineering curricula and for Baccalaureate programs in electronic, industrial, and mechanical engineering technology

American Assembly of Collegiate Schools of Business for the Baccalaureate programs of the School of Business.

## **INSTITUTIONAL MEMBERSHIPS**

The University holds institutional membership in the following:

American Assembly of Collegiate Schools of Business  
American Association for Higher Education  
American Association of Colleges for Teacher Education  
American Association of Collegiate Registrars and Admissions Officers  
American Association of University Women  
American Council on Education  
American Home Economics Association  
American Library Association  
American Society for Engineering Education  
Association of American Colleges  
Association of Catholic Colleges and Universities  
Association of Colleges and Universities Housing Officers  
Association of Governing Boards of Universities and Colleges  
Association of Independent Colleges and Universities of Ohio  
Catholic College Coordinating Council  
College Entrance Examination Board  
College and University Personnel Association  
Comparative and International Education Society  
Cooperative Education Association  
Council for Support and Advancement of Education  
Council for the Advancement of Experimental Learning  
Council of Graduate Schools  
Council on Social Work Education  
Dayton Area Chamber of Commerce  
Dayton Art Institute (sponsoring)  
Institute of International Education  
League of Ohio Law Schools  
National Association for Foreign Student Affairs  
National Association of Independent Colleges and Universities  
National Association of Student Personnel Administrators  
National Catholic Education Association  
National Council of Catholic Bishops  
National Scholarship Service and Fund for Negro Students  
North Central Association of Colleges and Schools  
North Central Conference on Summer Schools  
Ohio Academy of Science  
Ohio Association of Colleges for Teacher Education  
Ohio Association of Private Colleges for Teacher Education  
Ohio College Association  
Ohio Continuing Higher Education Association  
Society for the Advancement of Education  
Southwestern Ohio Council for Higher Education

## **RELATED UNIVERSITY SERVICES**

Besides the regular day sessions, the University conducts special as well as regular evening and summer sessions and offers short-term workshops, institutes, and conferences. Many of the programs presented during the regular day sessions are offered also in the evening and summer sessions, enabling students to work toward degrees on a part-time basis. All credited courses, whenever offered or in whatever form, conform to the same standards and are governed by the same policies and regulations which apply to regular day sessions.

The Continuing Education Office especially serves the part-time students of the Dayton community, to make the University and its course offerings, both credit and noncredit, more easily available to them. Similarly, the Office of International Education Services serves students from other countries who are enrolled at the University as well as those students who are interested in traveling or studying in other countries.

## **OFF-CAMPUS ACADEMIC CENTERS**

The University of Dayton maintains off-campus centers, all of them in Ohio, for graduate study in: Business Administration (Columbus); Education (Lima, Springfield, and Steubenville); Religious Studies (Columbus) and Political Science (WPAFB). All programs and courses are closely supervised by the Deans of Education and Business as well as the Dean for Graduate Studies and Research. Most of these courses are taught by the faculty teaching the same course on the main campus.

## **INSTITUTIONAL CONSORTIA**

### **Dayton-Miami Valley Consortium**

Fifteen institutions of higher learning in the Miami Valley, including the University of Dayton, have organized the Dayton-Miami Valley Consortium (DMVC). The participating institutions seek to increase inter-institutional cooperation, improve curricula, develop new courses and programs, share library sources, minimize cost, and centralize functions, by using computers, modern educational technology, and communication media.

The Consortium invites regularly enrolled full-time students at one institution, under certain conditions, to register for credit at no additional charge in courses offered by other Consortium institutions in which no instruction is available at their own institution.

### **Consortium for Higher Education Religion Studies**

The University is an active member of the Consortium for Higher Education Religion Studies (CHERS). This consortium makes possible cross registration, sharing library resources, dialogue with students of other institutions, interchange of facilities, and cooperative innovative planning. Area members include Earlham School of Religion, Mount St. Mary's Seminary, Payne Theological Seminary, University of Dayton, and United Theological Seminary.



United Theological Seminary, Antioch College, the University of Dayton, and Wright State University jointly employ and share a Professor of Judaic Studies under a grant from the Harriet Sanders Trust of Dayton, Ohio.

The University of Dayton cooperates with the Pontifical Marianum University (Rome, Italy) in the conferral of the degree Doctor of Sacred Theology.

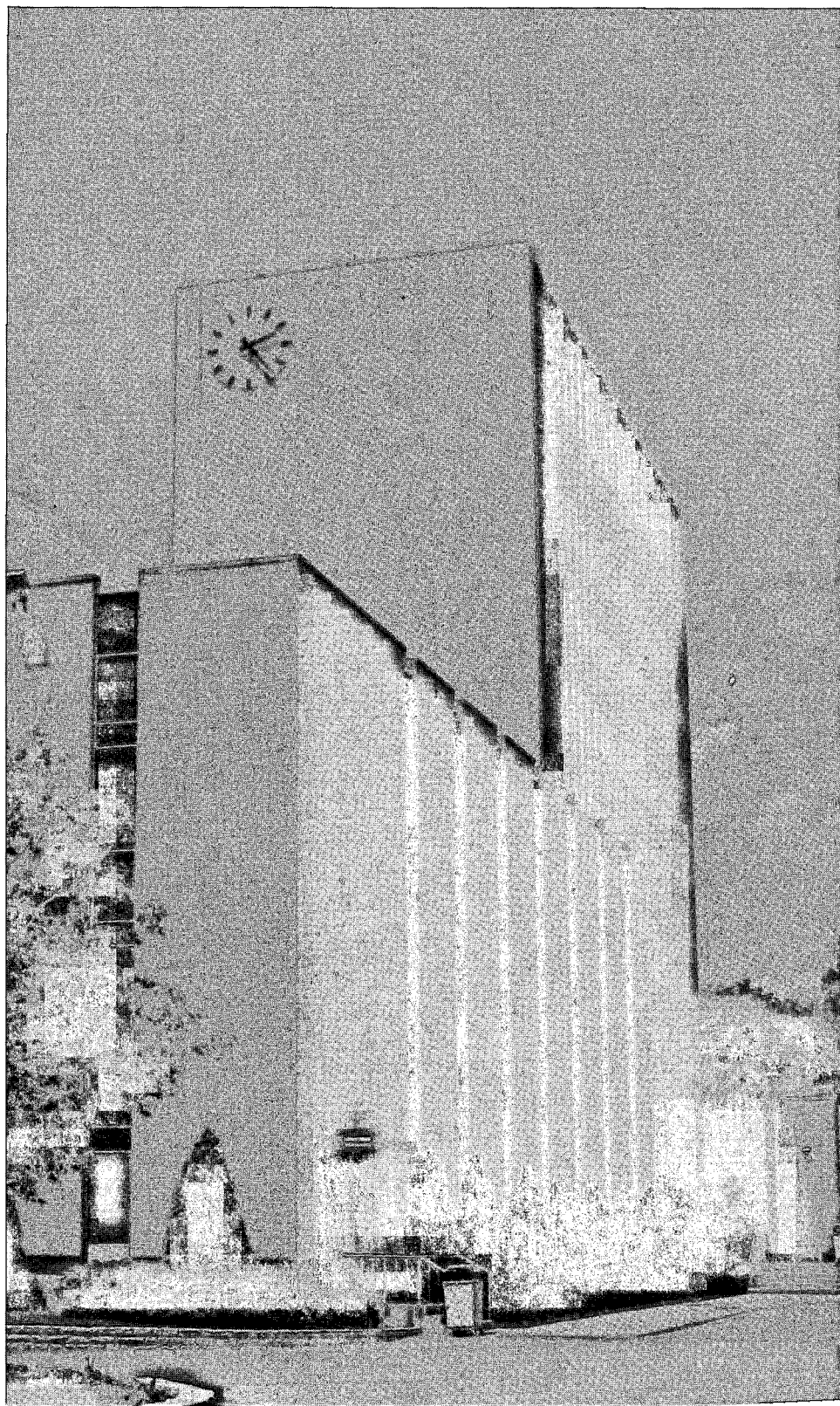
## CAMPUS MINISTRY

Campus Ministry seeks to lead the university in fostering a faith community among its members. This faith is manifested in personal and communal devotion to God, especially as revealed to Jesus Christ; in common worship; in the quality of relationships among the members of the community; and in efforts at enriching humanity and the world through the articulation of moral and religious values and their implementation.

In order to achieve this goal, Campus Ministry provides a number of services to all who are part of the university community. It cooperates with all segments of the University in fostering human development and the articulation and implementation of moral and religious values. It provides opportunities for prayer, for the celebration of the sacraments, for retreat experiences, and for pastoral counseling. It sponsors events, classes, and seminars that concern the deepening of faith, the awareness of human needs, and the practice of religious and moral values. It coordinates the efforts of more than fifteen student organizations that offer opportunities for community service. Though specifically Roman Catholic, it cooperates with and helps foster other religious groups on campus.



Brother Joseph W. Stander, S.M.  
*Vice-President for Academic Affairs and Provost*



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## II FINANCIAL INFORMATION

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### GENERAL POLICY

One half of the tuition and fees must be paid at the time of final registration for the term; the remaining one-half must be in the Bursar's Office no later than six (6) weeks after the beginning of the term.

A late registration fee will be assessed if registration is finalized on the first day of the term and later. A late payment fee will be assessed if the second one-half payment is received in the Bursar's Office after the first six (6) weeks of the term.

### TUITION AND FEES\*

\*Subject to change. See recent course composites for latest updates.

#### Tuition for Courses Taken for Undergraduate Credit

Per registered semester hour for lecture course on campus only .. \$136.00  
Per clock hour for laboratory course..... 30.00

#### Tuition for Courses Taken for Graduate Credit

Per registered semester hour except as below ..... 148.00  
Department of Religious Studies, per semester hour ..... 111.00  
Department of Religious Studies — Columbus,  
per semester hour ..... 111.00  
School of Education, per quarter hour ..... 70.00  
School of Education Lima Academic Center, per quarter hour ..... 75.00  
School of Education, Capitol University, per quarter hour ..... 75.00  
School of Education, Springfield Academic Center,  
per quarter hour ..... 75.00  
School of Education Steubenville Center, per quarter hour ..... 75.00  
School of Education, Rio Grande, per quarter hour ..... 75.00  
Ed.S. program, per quarter hour ..... 84.00  
School of Engineering doctoral program, per semester hour ..... 160.00  
Secondary and elementary teachers and school  
administrators, per semester hour (*school related courses only*).... 111.00

#### Fees

Application fee, non-refundable ..... 20.00  
Foreign student application fee, non-refundable ..... 50.00

Basic University fee, each term on campus only (This fee payable only once during the third term.)	20.00
Computer Science fee, per course	60.00
Special Course Fees	Vary
Audit per quarter hour - on campus	35.00
Audit per quarter hour - off campus	38.00
Audit per semester hour	74.00
Em credit per semester hour	15.00
Graduation fee	45.00
Late registration fee service charge	15.00
Late payment fee (second payment)	15.00
Transcript of credits, first copy of order	2.00
\$ .50 per each additional copy of same order	

An assessment of \$20.00 will be made for payment of tuition and fees by a bad check and cancellation of the student's registration will result until proper payment is made of tuition, fees, and special assessments.

## CANCELLATION AND REFUNDS

Cancellations will be allowed only after the completion of the proper Drop-Add Form. For refund purposes the effective date of cancellation is the date the student submits the official Drop-Add form, not the last day the student attends class. The date that appears on the Official Drop-Add form will be forwarded to the Bursar's Office, and that date will determine the amount of refund due, if any.

Students attending academic centers away from the main campus may write a letter to the appropriate Dean requesting withdrawal if a Drop / Add form is not available. Requests for refunds must be in writing and addressed to the Bursar.

Students who discontinue class attendance without officially completing the withdrawal procedures will be responsible for the full amount of the applicable tuition and fees.

Tuition charges for cancellations the first and second terms will be made according to the following schedule:

During the first week of classes	20%
During the second week of classes	40%
During the third week of classes	60%
During the fourth week of classes	75%
During and after the fifth week of classes	100%

Tuition charges for cancellations in either session of the split third term will be made according to the following schedule:

During the first week of classes	35%
During the second week of classes	70%
During or after the third week of classes	100%

## TRANSCRIPTS

A transcript of the permanent academic record is a confidential document to be released in compliance with the regulations of the Family Educational Rights and Privacy Act of 1974 as amended. The Registrar will issue transcripts upon a request signed by the student provided that no outstanding financial obligation to the University exists. All transcripts so requested require payment in advance. See "Fees" in Chapter II, Financial Information. Complimentary copies will be mailed to graduates within approximately six weeks after graduation.

## ASSISTANTSHIPS AND FELLOWSHIPS

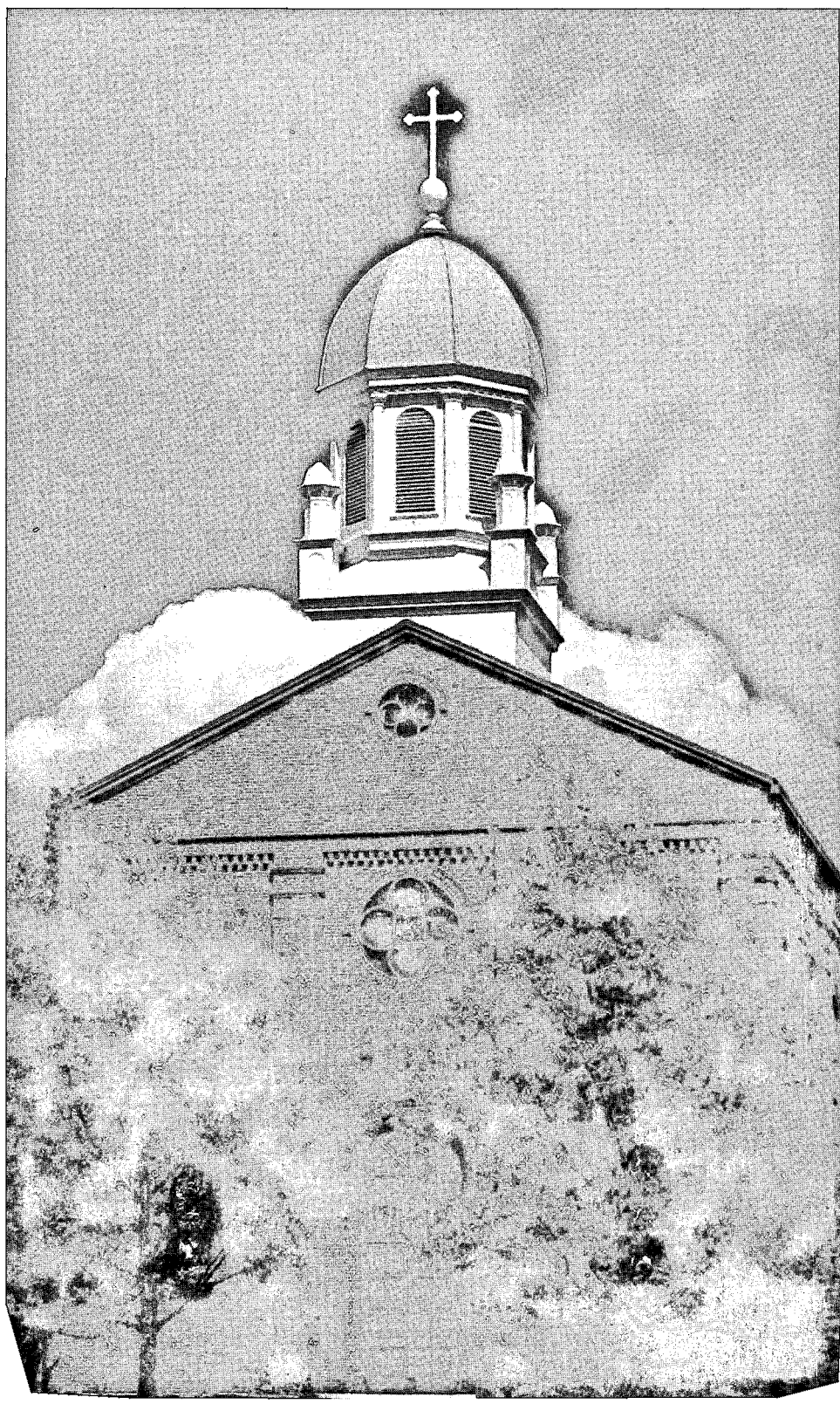
A limited number of graduate assistantships are available, in the College of Arts and Sciences, and Schools of Business, Education, and Engineering. These carry a stipend plus tuition remission for courses required in that degree. Recipients are expected to complete the Master's degree in two years. Graduate Summer Fellowships for research and creative activities during the third term of the academic years are also available to graduate students who wish to devote that term to a research project.

Detailed information and application forms may be obtained from the chairperson or director of the desired graduate program.



*George B. Noland, Ph.D.,  
Associate Provost, Dean for Graduate Studies and Research, and Director of  
the Research Institute.*





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## III LIBRARIES AND RESEARCH SERVICES

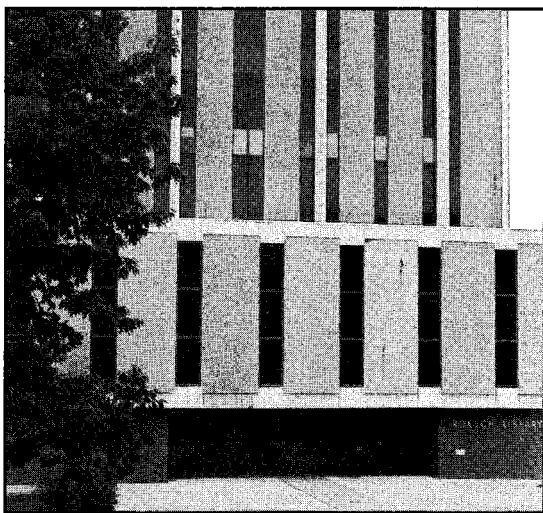
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### ROESCH LIBRARY

The Roesch Library houses the book, journal, government document, and microfilm collections for both graduate and undergraduate students. Its volume holdings number over 850,000 and its journal titles almost 3,000. Through the OCLC On-Line Union Catalog the library is interactive with the bibliographic holdings of over 2,500 other academic and research libraries across the country. The library also houses the celebrated Marian Library, rare books, other special collections, and the University Archives.

The **Marian Library** on the seventh floor of the Roesch Library, is the world's largest collection of printed materials on the Virgin Mary. Its resources, in over fifty languages, include over 65,000 books and pamphlets - some 4,000 printed before 1800 - runs of 125 periodicals, a clipping file of nearly 50,000 items, microfilm, a philatelic collection, and noteworthy accumulations of slides, medals, postcards, photographs, and other pictorial materials. Supplementing these is a general reference library comprised of national and regional bibliographies, works on the Bible, church history, religious art (especially Eastern Church art and art of medieval Europe) and the history of the book. The library publishes the scholarly annual *Marian Library Studies*. As the International Marian Research Institute, it offers graduate-level courses in Marian Studies.



*Roesch Library*

## **SCHOOL OF LAW LIBRARY**

The Library of the School of Law is located on the ground floor of the Roesch Library. Its collection exceeds 165,000 volumes.

## **SOUTHWESTERN OHIO COUNCIL FOR HIGHER EDUCATION**

The University's active membership in this council significantly augments the library resources available to its students. Some libraries in the council will lend materials directly to students from other schools; others require interlibrary loan forms, which may be secured from one of the reference librarians.

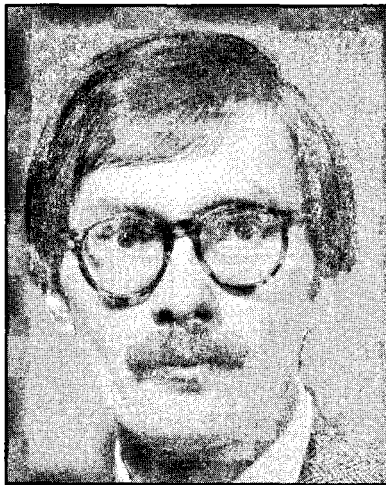
Other libraries in the area available to graduate students include the Dayton public library system, the libraries of the Engineers' Club, Miami Valley Hospital, certain units of Wright-Patterson Air Force Base, and certain local industries.

A special delivery van makes stops at many of the SOCHE libraries in the Dayton area to deliver books, films, photocopy and other materials on a daily basis.

## **COMPUTERIZED ONLINE LITERATURE SEARCHING**

Through a computer terminal in the Reference Department, the Roesch Library has access to over two hundred databases containing bibliographic information for every area of study at the university; social sciences, education, science, engineering, business and law.

Reference librarians can search these databases for a student to produce a bibliography tailored to a research project. The student is present during the computer search and can judge the results as they are printed on the terminal.



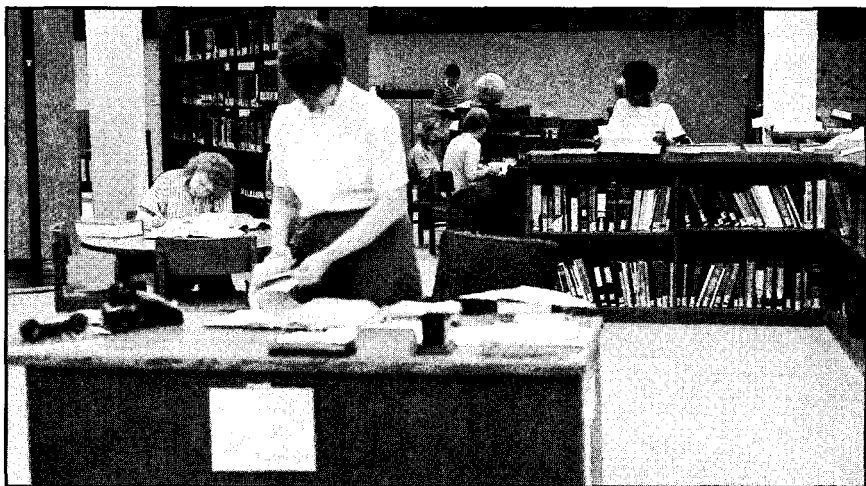
Edward D. Garten,  
*Director of University Libraries*

## **SCHOOL OF EDUCATION COMPUTER IN EDUCATION CENTER**

The School of Education Computer in Education center is located in Chaminade Hall. SECEC houses 20 microcomputers (five Apples and 15 DecisionMates). There is adjacent classroom space, a work area, and storage room. The Center provides instruction for graduates and undergraduate students in the School of Education.

## **THE SCHOOL OF EDUCATION CURRICULUM MATERIALS CENTER**

The Louis J. Faerber, S.M. Curriculum Materials Center houses the specialized collections of the School of Education and is located in Chaminade Hall. Its collection offers elementary and secondary school teaching materials, filmstrips, recordings, transparencies, cassettes, charts, material kits, and other teaching aids and resources for graduate students. The center also houses Master's projects completed in the School of Education.

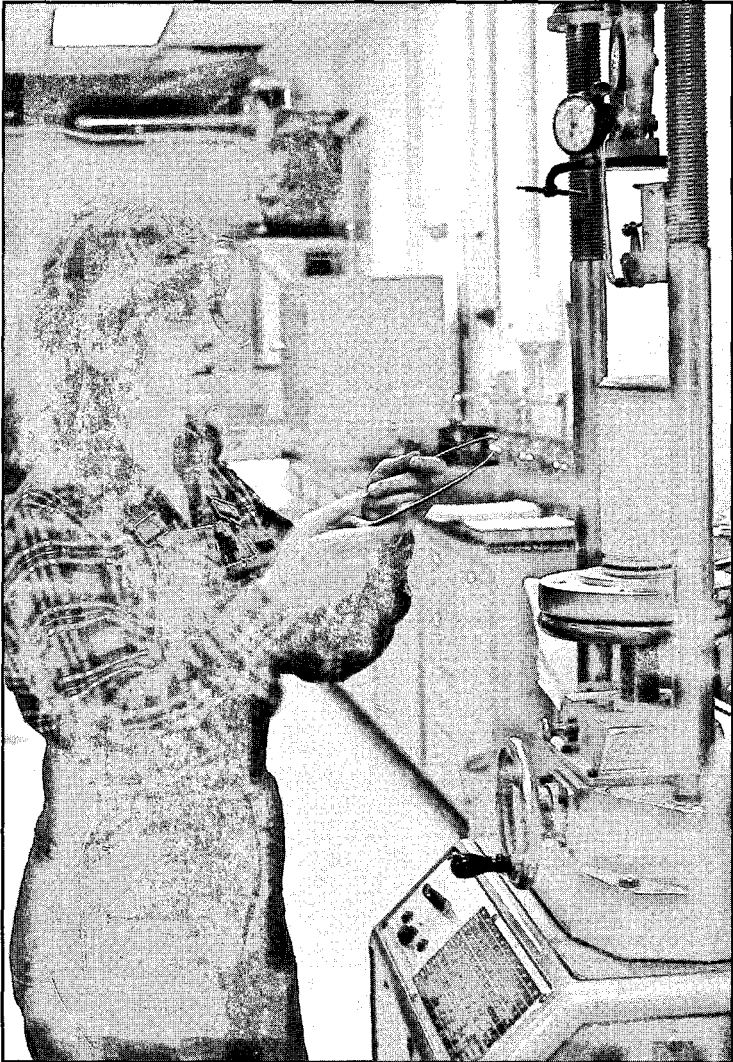


## **RESEARCH INSTITUTE**

As an integral unit of the University, the Research Institute administers sponsored research that the University agrees to perform for commercial and government agencies. Research projects are in such diverse areas as ecological studies, bone implants, blood flow, heart and muscle investigation, aerodynamics and structural mechanics, archaeological investigations, systems analysis, and the development of high strength magnetic materials.

Projects concerning a single discipline are conducted by the appropriate

academic department, and multidisciplinary projects are normally conducted in research facilities under the direct jurisdiction of the Research Institute. There is strong emphasis on the integration of all research with the instructional activities of the University, and a concerted effort is made to provide opportunities for graduate students to acquire training and experience in research.



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## IV STUDENT LIFE AND SERVICES

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The Vice President for Student Development and the Dean of Students and staff are responsible for assisting in developing and maintaining an environment which will support the educational goals and the Christian values of the University of Dayton. While students are encouraged to accept responsibility to make decisions, it is understood that decision-making involves risks. The Student Development staff provides individual and group counseling and supportive reinforcement, treating all students as individuals. All members of the Student Development Staff are professional counselors.

### HOUSING

The University of Dayton does not maintain on-campus housing for graduate students. Suitable rooms, apartments and other accommodations are available in the immediate vicinity within easy commuting distance *There is a limited number of graduate spaces for Law School students only. Law School students interested in University owned off-campus housing should contact the Housing Office upon their acceptance.*

Students new to the Dayton area are cautioned to arrange for housing prior to the beginning of a semester. Most choice accommodations are taken by the time classes start.

### FOOD SERVICE

The University of Dayton's Food Service maintains two main dining facilities; the Brass Lantern in Marycrest complex and El Granada, the main cafeteria in Kennedy Memorial Union. A large snack bar in the Union offers light meals as well as snacks. In addition, all of the residence halls have snack bars, which are open evenings and weekends. All graduate students are welcome to have meals or snacks at the above facilities.

Graduate students may purchase either five-day, seven-day, or luncheon meal tickets by the term, or make their own arrangements. Meal tickets can be obtained at the office of the Director of Food service, 107 O-Reilly Hall. Five-day lunch tickets are also available to commuters. On weekends, graduate students may eat in the cafeterias on a cash basis if they wish. Numerous fast food services are also available near the campus.

## **CAMPUS SECURITY AND PARKING**

Campus Security is the recognized, lawful, professional police agency on all University property. It is the objective of this department to make the University a comfortable, efficient, and safe place. University of Dayton Campus Security is dedicated to the preservation of freedom of movement and communication with a minimum of fear of property or personal injury.

A one-year parking permit may be obtained for a fee at the Traffic Office, Gosiger Center. This is a color-coded decal indicating the lot to which the permit holder has been assigned. Parking facilities on the main campus are limited. Restrictions to assigned lots are enforced rigidly between 6 a.m. and 5 p.m. on weekdays. After 5 p.m. daily and on weekends, all University lots (except for restricted zones) are open to all permit holders. An evening student may obtain an evening permit for the same fee. Note, however, that evening students arriving on campus before 5 p.m. on weekdays may park only in Lot A.

The Traffic Office brochure, issued with the permit, lists traffic regulations in detail. Drivers are expected to know these and observe them. The emergency telephone number on campus is 2121.

## **STUDENT IDENTIFICATION CARDS**

All registered students must have validated student identification (ID) cards. This card, validated for the given term, is needed to withdraw books from the Roesch Library and to obtain numerous other University services. ID's are issued and validated by the office of the Registrar.

## **OFFICE OF UNIVERSITY ACTIVITIES**

The Office of University Activities sponsors and coordinates extra-curricular and co-curricular activities for University organizations, departments, groups, and students in general. These not only enrich and enhance educational, cultural, and social development but foster a spirit of community in accord with the objectives of the University of Dayton.

Numerous and varied cultural, educational, social, and recreational activities take place on campus, many of them in the Kennedy Memorial Union. Among the continuing programs are the University Arts Series, with renowned guests, chiefly in music, theatre, dance, and literature; the Distinguished Speakers Series; the Music Division series of recitals and concerts by students and faculty; regular productions by the Performing & Visual Arts Department and the Theatre Division; and contemporary films and art exhibits in the Kennedy Union Art Gallery, Roesch Library, Rike Center, and O'Reilly Hall.

## **RECREATIONAL SPORTS**

The recreational Sports Department conducts activities of interest to the men and women of the University of Dayton. The aim is to provide individuals opportunities to participate in some activity of their own choosing, insofar as facilities and equipment permit. Intramural activities are organized on a team and individual basis, thereby enabling all to participate.

The Recreational Sports Office, located in Room 211 of the PAC building, is the administration center for men's, women's, and coed Intramural Programs. Any suggestions, questions, or complaints about the Intramural Program should be directed to the director of recreational sports at 229-2731.

**GRADUATE STUDENTS.** A graduate student membership costs \$25 individual and \$35 for a family membership for a full year starting August 15.

Facilities which are available to graduate students include Physical Activities Center and Fieldhouse. They house the following.

## **PAC**

- I. Collins Gymnasium
  - a. Four basketball/tennis courts
  - b. 1/10 mile jogging track
- II. Lackner Natatorium
  - a. Eight lane - 25 yd.  
Indoor heated pool  
Two - 1 meter diving boards  
One - 3 meter diving board
  - b. 2500 sq. ft. Sun Deck
- III. Weight Room
  - a. Six Universal Gym Machines
- IV. Multi-Use Room
  - a. Two table tennis tables
  - b. One set of exercise mats
- V. Racket Courts
  - a. Three handball/  
racquetball courts
  - b. One squash court

## **Fieldhouse**

- I. Main Gymnasium
  - a. Four basketball/volleyball courts
  - b. Three badminton courts
  - c. Seating for 3,500
- II. Weight Room
  - a. Nautilus Equipment
  - b. 2000 lbs. Olympic weights

## **HEALTH SERVICES**

Medical care is available at the Gosiger Memorial Health Center to all full-time and part-time graduate students. Basic medical care and most nonprescription medicines are provided without charge. The Health Center is open from 8 a.m. to 7 p.m. on weekdays and from 8 a.m. to 3 p.m. on Saturdays. In case of emergency, call Campus Security, 2121. A physician is available for consultation every weekday morning and afternoon. On Wednesday afternoons graduate students (and Marianists) are given priority in the doctor's clinic.

Pre-admission physical examinations are no longer required, but students with a chronic health problems are advised to have their physicians send records or recommendations to the medical director. Full-time graduate students are eligible for student health and accident insurance. For information about this program visit Room 111 at the Gosiger Health Center.



## **HUMAN RELATIONS OFFICE**

The Human Relations Office located in St. Mary's Hall, Room 122, provides services in three distinct areas to students, faculty, and administrative staff. These areas are Affirmative Action/Equal Employment Opportunity (AA/EEO) Compliance, Community relations, and facilitating inter-group communication within the University. Its director is the University's compliance officer for Affirmative Action/Equal Employment Opportunity (AA/EEO) and Title IX of the Education Amendment of 1972, Sec. 503 and 504 of the Rehabilitation Act of 1973, Sec. 402 of the Vietnam Era Veterans Readjustment Assistance Act of 1974, and the Age Discrimination Act of 1975.

The Office serves as a primary conduit for two-way communications between the University and the Dayton black Community.

## **INTERNATIONAL EDUCATION SERVICES**

The University of Dayton maintains two offices to serve the needs of international students and others whose native languages are not English. These services are available to any member of the University community for whom English is not the primary languages.

### **INTERNATIONAL STUDENT ADVISOR**

The international student advisor provides individual counseling on immigration, financial, and social needs, offering assistance in such matters as housing, meal tickets, and campus jobs. The advisor is always available in emergencies. Arrangements to see the international student advisor should be made within twenty-four hours of a new student's arrival on campus.

### **INTERNATIONAL SERVICES**

The coordinator, International Services, assists international students in all matters pertaining to admissions, including the evaluation of foreign credentials to determine the amount of credit transferable to the University of Dayton. The coordinator is also available to advise and assist members of the faculty and others of the campus community in matters pertaining to visas and immigration law.

## **PSYCHOLOGICAL SERVICES CENTER**

In keeping with the University's dedication to educating the whole person, the Psychological Services Center is designed to assist students in self-development. Graduate or Law students may find a time when they need an "objective third party" with whom to express their feelings and thoughts about personal situations. Difficulties with decision-making, interpersonal relationships, loneliness, family-marital issues, career choice and insomnia, are some concerns that post-graduate students may encounter. The Center provides an atmosphere in which these, or any other issues, can be discussed freely and openly. Students decide to what extent they want to divulge

personal information. Strict professional confidentiality is maintained at all times. No information regarding conversations leaves the Center without the students' permission.

All undergraduate students pay an initial student fee to cover the cost of these services. Graduate and Law students are not initially charged a fee for these services. If a choice is made to make use of the Center and its facilities, there are two possible fee structures. The first option is to pay \$10 per session.

If the need arises to use the Center throughout the time spent at the University of Dayton, then paying a \$65 fee would cover all visits. No Graduate or Law student would ever pay more the \$65 for these services. All students are encouraged to use the Center and not allow the fear of being charged a fee to be a stumbling block for seeking assistance. Special arrangements can be made.

Appointments can be made in person or by phone. Making an appointment is customary. If an emergency arises, however, no appointment is necessary and students will be seen immediately, if possible.



## GRADUATE AND ALUMNI PLACEMENT

The services of the Placement Office, Jesse Phillips Center, which are available to seniors, graduate students, and alumni seeking positions in business, industry, and government, include the following:

1. Personal enjoyment counseling.
2. A library of literature describing opportunities with more than 400 employers.
3. A listing of current job openings.
4. Direct referral to employers.
5. Campus interviews by representatives of business, industry, and government (conducted from October through March; announced in a monthly calendar which can be obtained in the Placement Office).

Part-time and summer employment are the responsibility of the Student Employment Coordinator, Office of Personnel Services. Teacher placement is the responsibility of the Teacher Placement Office, School of Education.

Information about graduate assistantships may be obtained from the appropriate departmental chairperson or program director.

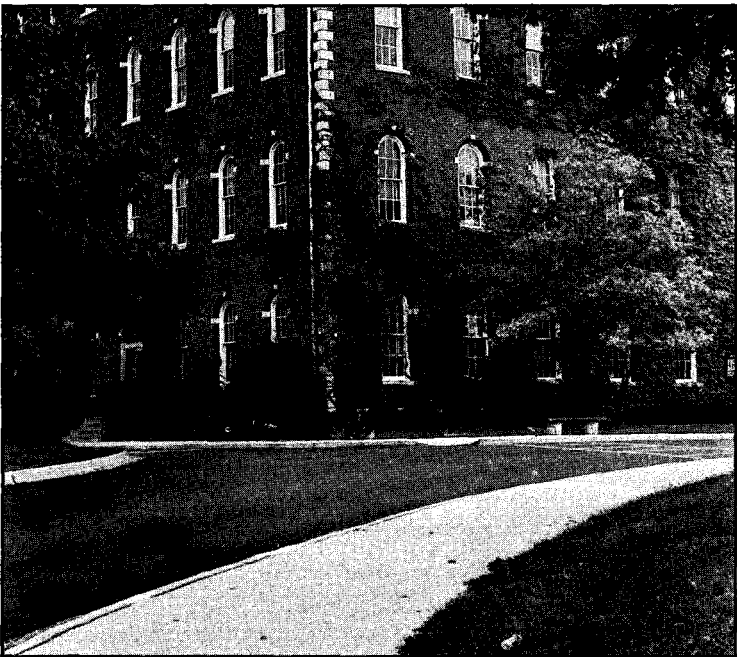
## **PRIVACY RIGHTS OF PARENTS AND STUDENTS**

In compliance with Section 438 of the General Education Provisions Act the University of Dayton has published regulations designed to protect the privacy of parents and students as to the access and to the release of records maintained by the institution (see University of Dayton Student Handbook).

## **THE STUDENT HANDBOOK**

Each student at the University of Dayton is responsible for knowing and observing the policies, regulations, and procedures contained in the official student handbook. This publication provides much other useful information on such subjects as University services, student publications, and intercollegiate and intramural sports schedules.

Student handbooks are available at the opening of the Fall term in the information Center, and the Off-Campus Center for Community Relations.



**St. Mary's Hall.**  
*Administration Building*

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## V GENERAL ACADEMIC INFORMATION

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The academic requirements and regulations described in this chapter are those of the University which, unless otherwise noted, take precedence over all others and apply to all graduate students. The student is expected to assume full responsibility for knowing and following all pertinent regulations and procedures of the graduate school as set forth in this Bulletin and for meeting the standards and requirements expressed herein.

The admission of candidates, their continuance and status, the awarding of academic credits, and the granting of degrees are all subject to the ordinary regulatory powers of the University. The University reserves the right to withhold or cancel, at its discretion, any of these privileges for reasons considered sufficient by its own governing body.

The University of Dayton presently awards the following degrees beyond the Baccalaureate:

- Master of Arts
- Master of Business Administration
- Master of Clinical Chemistry
- Master of Clinical Laboratory Technology
- Master of Computer Science
- Master of Public Administration
- Master of Science
- Master of Science in Aerospace Engineering
- Master of Science in Chemical Engineering
- Master of Science in Civil Engineering
- Master of Science in Education
- Master of Science in Electrical Engineering
- Master of Science in Electro-Optics
- Master of Science in Engineering
- Master of Science in Engineering Management
- Master of Science in Management Science
- Master of Science in Materials Engineering
- Master of Science in Mechanical Engineering
- Master of Science in Teaching
- Educational Specialist Degree in Educational Leadership
- Juris Doctor
- Doctor of Engineering
- Doctor of Philosophy in Biology
- Doctor of Philosophy in Engineering
- Doctor of Sacred Theology

## ADMISSION

Men and women graduates of approved colleges or universities who hold the Bachelor's degree are eligible for admission. Applicants must have had adequate undergraduate preparation in their proposed fields of study and must show promise for pursuing higher studies satisfactorily.

Inquiries concerning admission and requests for application forms should be addressed to the Office for Graduate Studies or to the office of the dean of the appropriate School or College. The application for admission to graduate work should be submitted by August 1 for the first term, by December 1 for the second term, by April 1 for the third term, and by June 1 for the second half of the split third term. It is the responsibility of the student that the application, with all necessary supporting documents, be complete and in order. Registration as a graduate student will not be permitted otherwise.

Upon admission, students are designated as full time or part time by their deans or program directors. The determination of such status for graduate assistants, students engaged in research, and, in general, all graduate students is made by their respective chairpersons.

Graduate students are also classified according to their relationship to formal programs, as follows:

1. **Regular status** — the student who has met satisfactorily all the general requirements of the College or School and the specific requirements of the department in which the program is given.
2. **Conditional status** — the student who must fulfill some prerequisite imposed by the School or department before admission to regular status; and the student whose preparation cannot yet be determined.
3. **Unclassified status** — the student belonging to either of the categories below. The unclassified student will be considered as the student of a School or the College but will not be officially enrolled in a graduate program leading toward a degree.
  - A. **Non-degree or special** — a student who fulfills all the requirements and is taking courses for credit but is not seeking a degree.
  - B. **Transient** — a properly qualified student working toward a degree in another institution who has written authorization from the dean of that institution to take specific courses at the University of Dayton for transfer of credit. The transient student must satisfy all registration requirements of the given course that are mandatory for students working for a degree at the University of Dayton.

## APPLICATION

The APPLICATION FORM must be completed by typewriter or printed in black ink. When completed, it should be returned to the Office for Graduate Studies.

**OFFICIAL TRANSCRIPTS** must be submitted directly from the Registrars of all previously attended colleges or universities to the Office for Graduate Studies. Registration will be permitted only when the final transcript (showing the university seal and highest degree attained) is on file.

**LETTERS OF REFERENCE** should be completed by professional persons able to judge your academic qualifications for your proposed field of study and returned to the Office for Graduate Studies.

**THE UNIVERSITY OF DAYTON** operates under an early semester, split third-term calendar. The First Term begins in late August; the Second Term in early January; the Third Term, first session, in May; and the Third Term, second session, in June. (Consult the current Graduate Announcement for exact dates.)

**IT IS THE APPLICANT'S RESPONSIBILITY** to see that all required documents are on file at least one month prior to the beginning of the term for which admission is sought.

### **ADMISSION TESTS**

GMAT . . . . . required by the SCHOOL OF BUSINESS

GRE required by the following departments: BIOLOGY, CLINICAL LABORATORY TECHNOLOGY, COMPUTER SCIENCE, PSYCHOLOGY

MAT . . . suggested for the CLINICAL PSYCHOLOGY program

**ALL APPLICANTS FOR GRADUATE ASSISTANCE** should include a statement, not to exceed a thousand words, describing academic preparation, vocational objectives, and particular interests in their field of study. Applications are due by March 1 and should be submitted directly to the department.

**INTERNATIONAL STUDENTS** applying for graduate study must complete a different application form. Contact the International Services Office for further information

An application fee of \$20.00 must accompany this form before your application can be processed. Make checks payable to the University of Dayton. This fee is not refundable.

## **INTERNATIONAL STUDENT ADMISSION**

Students from foreign countries should request information and applications from the Office of International Services. A student from a foreign country seeking admission to any graduate program must have completed a minimum of sixteen years of schooling, must have earned a Bachelor's degree or its equivalent, and must present evidence of outstanding success in the chosen field of study. An applicant who is a citizen of a foreign country will be required to supply the following information along with the formal application form:

1. A complete academic record, including secondary school.
2. Three recommendation letters.
3. Scores from the Test of English as a Foreign Language (TOEFL).
4. Scores from the Graduate Record Examination (GRE). *Exception:* instead, M.B.A. candidates must furnish scores from the Graduate Management Admissions Test (GMAT).
5. A personal *vita*, including work experience, research study or experience, and professional development objectives.
6. Evidence of sufficient funds to cover tuition, room and board, and return transportation costs; and, from countries where applicable, evidence of exchange funds and export permission. A Master's degree requires approximately two calendar years for completion.

International students should complete the application procedure two months prior to the beginning of classes for any term (see academic calendars). Initial inquiries should be made at least one year before the term in which the student seeks admission.

**NOTE:** *There are no exceptions for international students to the above rules. For specific directions, see the Guide to Admissions for International Students.*

## VETERANS

All departments at the University have been approved by the State Approving Agency for Veterans' Training. The Veterans Affairs Office is located in St. Mary's 202 and will assist in processing the necessary forms for educational benefits. Each semester the Veterans Schedule Form must be submitted and any changes in program reported in writing. Failure to follow this procedure may result in cancellation of benefits by the V.A.

## UNDERGRADUATE STUDENTS IN GRADUATE COURSES

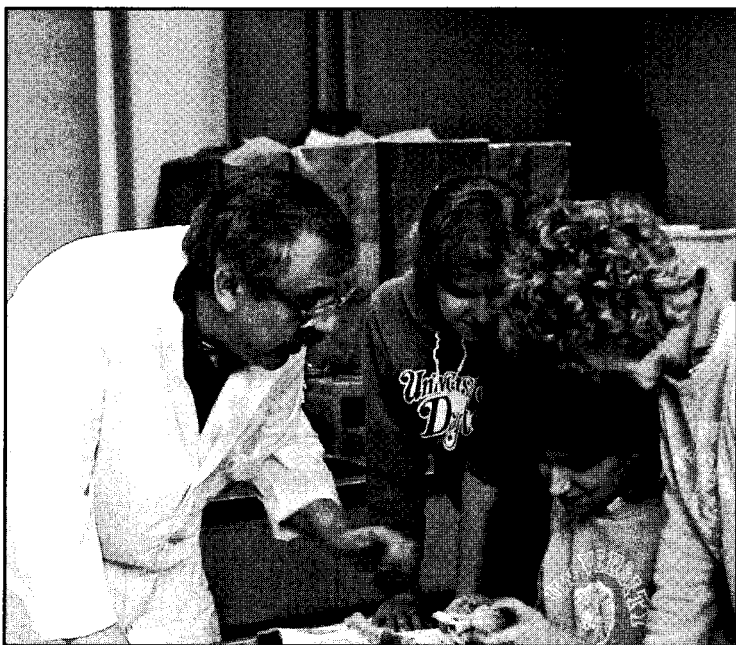
An undergraduate student may register for graduate courses only under the following conditions:

1. Graduate courses to count toward the undergraduate degree:
  - a. Approval must be obtained from the director of the appropriate graduate program.
  - b. The student's total course load must not exceed 17 semester hours during that term.
2. Graduate courses to count toward the graduate degree:
  - a. Approval must be obtained from the director of the appropriate graduate program.
  - b. The student's total course load must not exceed 17 semester hours during that term.
  - c. The student must be within 15 semester hours of completing the semester-hour requirements for graduation in the undergraduate program.

- d. Credit obtained for the graduate courses may not be counted toward both the Bachelor's degree and for any future Master's degree.
- e. The undergraduate student whose status is less than full time or  $\frac{3}{4}$  time must pay the graduate tuition rates to register in graduate courses for graduate credit.

## ADVISING

Initial academic advising is usually done by the program director or a temporary advisor. Following this the graduate student may be assigned to a permanent advisor or a graduate committee. In either case all details of the program will be decided by the student and advisor.



## REGISTRATION FOR COURSES

The responsibility for being properly registered rests with the student. Registration is required each term or session of all students who enter course work for credit and of all students who wish to audit courses. The written approval of the proper dean or the designated director or advisor is required for admission to any course. Any student who has interrupted the normal sequence of a graduate program is required to apply to the designated advisor or program chairperson for permission to resume study, at least four weeks prior to the first day of the term.



All students should consult the Graduate Composite for each term well in advance of registration in order to determine the scheduling of courses. Students enrolling at the off-campus centers should note that although the scheduling of off-campus classes follows the general pattern of the University calendar, they do not necessarily conform to the on-campus academic dates in all details. Students in the School of Law should note a separate Law School calendar in Chapter XI, and those in the School of Education should consult the School of Education section in this Bulletin.

## **MASTER'S AND DOCTOR'S DEGREE REQUIREMENTS**

The College of Arts and Sciences and the Schools of Business Administration, Education, Engineering, and Law offer programs variously distributed in time, leading to the Master's and Doctor's degrees. Specific requirements and sequences leading to these degrees are described in Chapters VI through XI, as are the specific curricula, courses, and requirements of the Schools and departments offering them.

### **Residence Requirement**

For the Master's degree, at least 24 semester hours of credit, or its equivalent, must be earned at the University of Dayton or its off-campus centers.

For the Doctor's degree, two-thirds of the semester hours required beyond the Master's degree should be earned at the University of Dayton. Generally, this is 48 semester hours beyond the Master's degree. For the Doctor's degree, a student must be a full-time student for at least two semesters or the equivalency.

### **Transfer Credits**

A maximum of two courses of graduate work may be allowed in transfer from other accredited institutions to the University of Dayton provided the work is of B grade or better. The quality points are not transferred. Usually no transfer credit will be allowed for courses taken more than five years previous to matriculation in the graduate schools of the University of Dayton.

During the initial years of operation of any new program, exceptions to this limitation may be made with the approval of the Dean for Graduate Studies.

### **Advanced Undergraduate Courses**

Some programs permit certain 400-level undergraduate courses to be applied to graduate program credit requirements. When such courses are permitted for graduate-level credit, then the work done shall be of the grade of B or higher in order for that credit to be accepted toward a degree. The student must pay the graduate tuition rates when registering in these courses for graduate credit.

## **Elective Courses**

Most graduate programs allow, and encourage, the student to select one or two courses from other related disciplines. Consult the advisor or program director for details.

## **Foreign Language Requirement**

At the discretion of the department offering a particular program, a reading knowledge of a foreign language may be required for the Master's degree. Graduate students can take language courses or class or tutorial basis by special arrangement through the Department of Languages, College of Arts and Sciences. No graduate credit is allowed for the fulfillment of language requirements.

## **Comprehensive Examination**

A comprehensive examination is required in most programs. This examination may be oral or written, or both. Application for any comprehensive examination must be approved by the chairperson of the student's major department at least two weeks prior to the examination. For further details, consult the explanation under the appropriate individual program in this Bulletin.

## **Thesis and Other Requirements**

Students in a program requiring a thesis, an equivalent project, a candidacy examination, or a dissertation may begin work only with the approval of the program director or of an advisor delegated with the authority to give it. Both the form and the content of the final work must have the approval of at least three members of the department, including the faculty advisor and the chairperson or director.

The *Manual for the Preparation of Graduate Thesis and Dissertations* is available from the office for Graduate Studies, 200 St. Mary's Hall.

At least three final copies of a Master's thesis in approved form must be submitted at least two weeks before the date of graduation. Students in doctoral programs should consult appropriate sections of this Bulletin for requirements concerning candidacy and such matters as the number of copies of the dissertation, as well as for regulations governing topics, approval, and procedures.

## **Sufficient Progress**

Students are expected to maintain sufficient progress towards a degree. At various intervals, usually at each registration period, and especially at mid-point in the program, the advisor or program director will discuss rate of progress with the student. Students not showing promise of completing the program in a reasonable time may be advised to withdraw from the University.

## **Appeal For Change of Grade**

Any appeal for change of grade for a particular course should be directed to the dean of the School in which that course is offered.

## Time Limit

All requirements for a Master's degree must be satisfied within *seven* calendar years from the time of matriculation.

All requirements for a doctoral degree must be satisfied within *five* calendar years after admission to candidacy.

## Second Master's Degree

In some cases a student, either possessing a Master's degree or currently studying toward one, wishes to obtain an additional Master's degree in a related field. Only six semester hours from the first program may be applied toward the requirements of the additional degree.

## Academic Standards

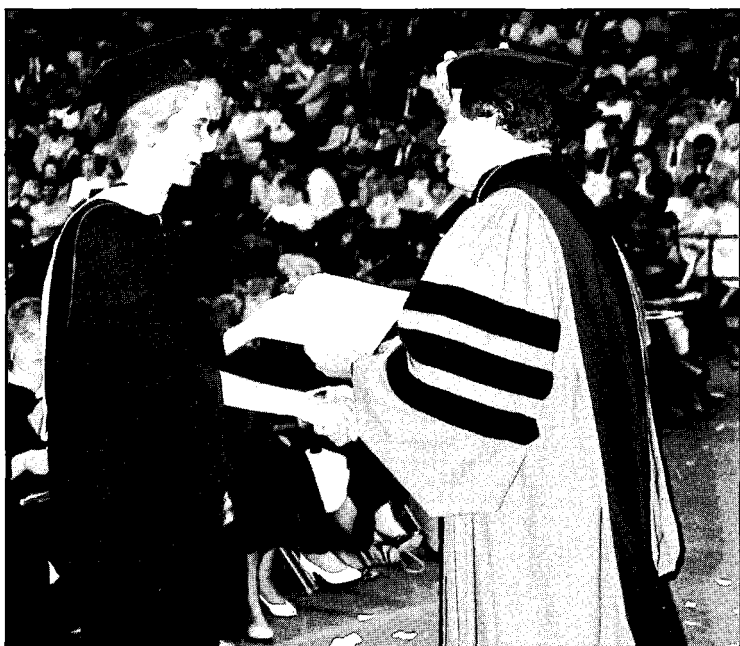
To be in good standing, a graduate student must have a 3.0 quality point average at all times. Grades are expressed on the student's permanent record in the following manner:

- A — *Excellent*: 4 quality points are assigned for each semester or quarter hour.
- B — *Average*: 3 quality points are assigned for each semester or quarter hour.
- C — *Poor*: 2 quality points are assigned for each semester or quarter hour.
- F — *Failed*: 0 quality points are assigned.
- CR — *Passed*: Credit is given, but no corresponding quality points are given. This is used by certain departments when the thesis or special courses are not to affect the 3.0 cumulative quality point average needed to be in good standing.
- I — *Incomplete*: To be used when a course has terminated but the student, for an acceptable reason, has not completed the work of the course. The I has 0 quality points per hour and does not affect the cumulative point average. It can be changed to a letter grade if the student has completed the work. Otherwise it will remain on the permanent record indefinitely.
- K — *Credit*: This mark is used only for credits accepted as transfer credit from other institutions. No quality points are allowed.
- P — *In Progress*: For the thesis or for courses which have not terminated at the end of semester. After the course or thesis is completed, the P is replaced on the permanent record by an A, B, C, F, or with the corresponding credit and quality point average.
- W — *Withdrawal*: Any withdrawal or change of course must be processed by an official Drop-Add Form through the Registration Center, with the approval of the graduate student's advisor. During the first three weeks of a full term (or 10 calendar days of a split term) a graduate student may withdraw from a class without record. Financial adjustments, if allowed, will be made only from the date of notification of withdrawal.

- X** — *Audit*: This mark indicates that the graduate student has registered to audit the course. No credit hours or quality points are awarded for this mark. **NOTE:** *Any course taken for audit may not be retaken for credit.*
- Em** — *Examination*: This mark indicates credit given to students (registered in the University) on the basis of examinations after admission to the University. The level of achievement to be demonstrated by the student on these examinations is determined by the department in which the course is taught. Such credit shall be assigned only on authorization of the dean of the School or College in which the student is registered. No quality points are allowed.

The various deans will review at intervals the work of their graduate students, and in consultation with the program directors and/or chairpersons of the departments, will recommend that those who are not doing work of a high caliber be advised to discontinue courses leading to a degree.

The disciplinary authority of the University is vested in the president by right, and in the deans and other officers on whom jurisdiction may be conferred for specific cases and in restricted areas.





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## VI INTERDISCIPLINARY AND JOINT STUDIES

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George B. Noland, Associate Provost, Dean for Graduate Studies and Research, and Director of the Research Institute.

Kitayun E. Marre, Assistant Dean for Graduate Studies

The University of Dayton, under the direction of the Associate Provost, offers individual interdisciplinary programs designed by the student in cooperation with an advisor and representatives from the selected programs. Applicants must have a Bachelor's degree with a general cumulative point average of 2.8 or above, and are expected to submit a formal written request for an individually-designed interdisciplinary program to the graduate council.

The interdisciplinary program does not take the place of an established graduate program. Rather, it is a specific program drawn up from several disciplines to meet a special need, frequently for job-related requirements. It must produce interrelated applications of specific disciplines and skills at the graduate level. For instance, a clinical dietitian employed in a hospital may seek graduate level expertise in counseling and education for patients with chemical dependencies and for teaching interns. Such a student finds that a Master of Science in the interdisciplinary program serves the special needs for a broader knowledge base encompassing Physiology, Communication, and Counseling. Under the direction of an advisor and a committee of professors from the required areas, a proposed course of study can be defined for this student, submitted to the graduate council, and after approval, carried out under the advisor's supervision. Or, to take an instance in the humanities, a student may seek graduate level expertise in historical preservation. Such a student seeks more general learning and professional expertise, and finds that a Master of Arts in the interdisciplinary program serves special needs in History, Art, and Public Administration. Again, under the direction of an advisor and a committee of professors from the required areas, a special course of study can be defined for the student, submitted to the graduate council, and after approval, carried out under the advisor's supervision.

The degree will be either a Master of Arts or a Master of Science. The Program should involve several disciplines and be directed by one faculty member from each discipline. The three faculty members constitute the advisory committee. The final program will be drawn up and approved by the advisory committee. Copies will be sent to the chairpersons of the department involved.

Of a minimum of 30 semester credit hours required, 15 may be divided between directed study and a thesis, but must be related to the interdisciplinary areas; and 6 semester credit hours of electives in more distantly related areas may also be chosen.

The formal request for an individual interdisciplinary program must include:

1. A general description of the proposed course of study and the reasons for choosing such an interdisciplinary program, rather than one offered in a single department,
2. The courses (at least 15 semester hours) which will be taken and the department involved in the overall work.
3. If a project or thesis is desired: a clear statement of the specific nature of the topic, the research intended, and the purpose of the project or thesis.

## **OTHER INTERDISCIPLINARY PROGRAMS**

### **AMERICAN STUDIES (AMS)**

Francis J. Henniger, Director of the Program

The College of Arts and Sciences, under the guidance of the program director and an advisory committee composed of the representatives of several supporting disciplines, offers the Masters of Arts in American Studies. The supporting disciplines are: Economics, English, Teacher Education, History, Philosophy, Political Science, Psychology, and Religious Studies. See Chapter VII for details of the program.

### **CLINICAL LABORATORY TECHNOLOGY (CLT)**

Charles J. Chantell, Director of the Program

The Master of Clinical Laboratory Technology program educates practicing clinical laboratory scientists (MT, CT, NMT) who wish to work in health science administration or health science education. The CLT is an interdisciplinary program that uses clinical faculty and cooperating faculty members in the Schools of Education, Business Administration, and the College of Arts and Science.

Direct application of the material gained in course work is insured during a personalized practicum under the direction of clinical faculty. See Chapter VII for details of the program.

## **COMMUNICATION (CAI) INTERDISCIPLINARY STUDY**

Donald B. Morlan, Director of the Program

The Communication interdisciplinary study program leads to the Master of Arts. It requires 24 semester hours of study in Communication, 12 semester hours of study in one of several designated interdisciplinary areas, followed by oral comprehensive examinations on both the course work and the thesis. See Chapter VII.

## **INTERNATIONAL MARIAN RESEARCH INSTITUTE (IMR)**

Theodore A. Koehler, S. M., Director of the Program

Through the Marian Library, the University of Dayton administers a program of studies in Theology, centered on the Virgin Mary in the context of modern Christology and Ecclesiology. On campus the Institute offers graduate-level summer courses of two to six weeks in length. It also sponsors workshops in Africa and other mission areas. One who completes the three-year program receives a Certificate in Marian Studies from the Institute itself. Any credits earned are valid as Continuing Education Units (CEUs). Such credits may likewise be applied toward an M.A. in Religious Studies from the University of Dayton's Department of Religious Studies. The Institute's classes are also open to qualified auditors. A special program prepares candidates for the Pontifical degrees: S.T.L. and S.T.D. with specialization in Marian theology. These latter degrees are conferred in the name of the Marianum, a pontifical theological faculty in Rome. The Baccalaureate in Theology or its equivalent is a pre-requisite for the S.T.L. Dissertations for the Pontifical degrees are written and defended under the direction of the Institute's professors.

## **TEACHER EDUCATION (EDT) INTERDISCIPLINARY STUDIES**

Thomas J. Lasley, Chairperson

James E. Gay, Assistant Chairperson

The Department of Teacher Education in the School of Education offers a program which enables students to develop an individually designed program in a specific area in Education. Students have developed concentrations in such areas as gifted education, adult education, and values education. With the assistance of the faculty, students develop a plan through a selection of offerings in Teacher Education and other departments. See Chapter IX and consult with assistant chairperson or chairperson.

## **ELECTRO-OPTICS (EOP)**

The program of study for the Master of Science in Electro-Optics is an interdisciplinary program administered by the School of Engineering with the cooperative support of the College of Arts and Sciences. See Chapter X.



## JOINT STUDIES

### **LAW AND BUSINESS ADMINISTRATION (LAW / MBA)**

In cooperation with the School of Law, the School of Business Administration offers a joint program leading to the conferment of a Juris Doctor and the Master of Business Administration. By coordinating the scheduling of courses required for the joint program, the student is able to complete all work one semester sooner than would be necessary if the two degrees were pursued independently. The resulting combination of skills provides a background of increasing importance in today's environment. See Chapter VIII and Chapter XI, and consult the directors of both programs.

### **LAW AND EDUCATION (LAW / EDU)**

The Law School and the School of Education cooperate in offering a joint program leading to both the Juris Doctor and the Master of Science in Education. Because the program provides sufficient flexibility to accommodate particular needs and plans, its design and plan can be determined for each student individually. For further information, students interested in this joint program should consult program directors in both the School of Law and the School of Education.

### **LAW AND PHILOSOPHY (LAW / PHIL)**

The School of Law and the Department of Philosophy in the College of Arts and Sciences cooperate in offering a joint degree program — concurrent studies in two disciplines that result in the Juris Doctor and the Master of Arts. Students interested in this combination must make separate application for admission to the law and the philosophy programs and satisfy the requirements of both, some of which, however, may overlap. See also Chapters VII and XI.

### **MASTER OF SCIENCE IN TEACHING (MST)**

The Master of Science in Teaching is offered in conjunction with the Department of Mathematics in the College of Arts and Sciences and by the School of Education. The degree, however, is conferred by the School of Education. See Chapters VII and IX.

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## VII COLLEGE OF ARTS AND SCIENCES

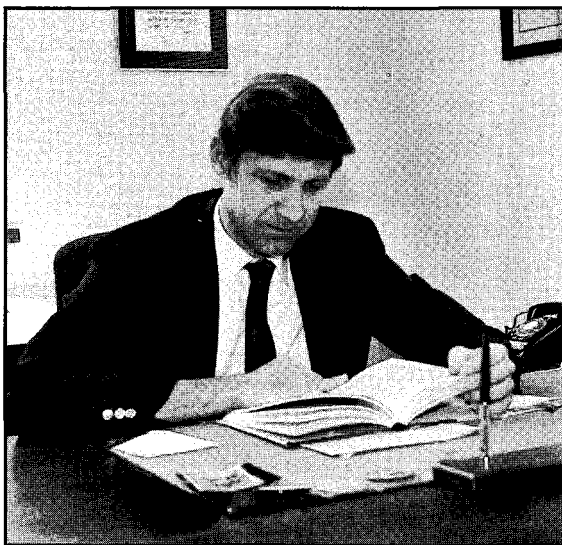
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Francis M. Lazarus, Dean

The objectives of graduate work in the College of Arts and Sciences coincide with the general aims and philosophy of education that characterize the University of Dayton.

Programs leading to the Master of Arts or the Master of Science are offered in American Studies, Biology, Chemistry, Communication, English, History, Mathematics, Applied Mathematical Systems, Pastoral Ministries, Philosophy, Physics, Political Science, Psychology, and Theological Studies. The Department of Chemistry offers the Master of Clinical Chemistry. The Department of Computer Science offers the Master of Computer Science. The Master of Public Administration is also offered through the Department of Political Science. An interdisciplinary Master of Clinical Laboratory Technology degree is offered in cooperation with the Schools of Education and Business Administration. The Doctor of Philosophy degree is offered by the Department of Biology.



Francis M. Lazarus, *Dean.*  
*College of Arts and Sciences.*

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## **AMERICAN STUDIES (AMS)**

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Francis J. Henninger, Director of the Program

The American Studies program requires that students take courses in several disciplines in order to study the American experience. The Program trains the student to research data in the required disciplines for select information, and to integrate that information toward a broader understanding of the American experience.

Because American Studies is interdisciplinary in its direction its advisory committee is composed of members from several departments: Economics, Lawrence Hadley; English, Peter Arons; Teacher Education, Joseph Watras; History, Roberta Alexander; Philosophy, Joseph Kunkel; Political Science, David Ahern; Psychology, Charles Kimble; and Religious Studies, William Roberts.

### **ADMISSION REQUIREMENTS**

An applicant must have achieved a Bachelor's degree and must have completed at least 72 semester hours in any combination of American Studies, Anthropology, Economics, Education, English, Fine Arts, History, Music, Philosophy, Political Science, Psychology, Sociology, and Religious Studies.

### **PROGRAM REQUIREMENTS**

The program requires 30 semester credit hours. Three semester hours must be taken in American Studies; 27 semester hours may be taken in two to four of the cooperating disciplines, but not less than 6 nor more than 18 semester hours may be taken in any one discipline. 0-6 semester hours of undergraduate courses may be required as prerequisite depending on academic preparation for the program.

When accepted into the program, the student must designate, as accurately as possible, which of the cooperating disciplines will be studied for the degree, and the earliest studies must include courses in at least two of those disciplines. The advisor will determine whether the student shall take AMS 300 or AMS 301 or both. The student shall complete such requirements at the earliest opportunity.

When 12 semester hours toward the Master of Arts have been completed, the student will be examined on his ability to integrate, and make sophisticated comparisons among the disciplines chosen for his degree. The examination is composed and the answers evaluated by a committee of faculty from American Studies and the disciplines in which the student is working.

In the last term the student will take AMS 590, Interdisciplinary Research. In essence this is a Master's thesis course. The course is the final step in the student's program: it is a self-designed study of information from at least two disciplines demonstrating a mature ability to produce scholarship from the integration or the comparison of the two.

Courses are chosen from the following groups:

## GROUP A

### *English*

- ENG 572 The Romantic Age in American Literature
- ENG 576 Major American Writers
- ENG 580 American Realism and Naturalism
- ENG 584 Studies in Twentieth-Century American Literature
- ENG 591 Studies in Literature<sup>1</sup>
- ENG 605 Studies in an Author<sup>1</sup>
- ENG 609 Studies in a Genre or Mode<sup>1</sup>
- ENG 613 Studies in a Literary Movement<sup>1</sup>
- ENG 621 Studies in the Teaching of Literature<sup>1</sup>

## GROUP B

### *Foundations of Education*

- EDT 502 Philosophical Studies in Education
- EDT 510 History of Higher Education in the United States
- EDT 511 History of Education in the United States

### *History*

- HST 550 Founding of America
- HST 554 The Age of Jefferson and Jackson
- HST 555 The Old South
- HST 556 Civil War and Reconstruction
- HST 560 U.S. Legal and Constitutional History
- HST 561 U.S. Legal and Constitutional History II
- HST 565 History of American Business
- HST 566 Science, Technology and the Modern Corporation
- HST 570 History of the Cold War
- HST 572 Southern Appalachia
- HST 573 Age of Excess and Reform: U.S., 1877-1920
- HST 575 The Progressive Period, 1900-1920
- HST 576 Between the Wars
- HST 577 Contemporary American History
- HST 660 Studies in U.S. History Before 1877

### *Philosophy*

- PHL 621 American Pragmatism
- PHL 625 Philosophy of Language
- PHL 628 Recent Judaic and Christian Philosophy
- PHL 642 Epistemology

<sup>1</sup>Courses which may be counted only when their content is entirely or mostly "American."

- PHL 644 Philosophy of Science
- PHL 651 Philosophy of the Person
- PHL 652 Ethics
- PHL 653 Aesthetics
- PHL 654 Philosophy of Religion
- PHL 655 Social and Political Philosophy
- PHL 656 Philosophy of Law
- PHL 657 Morality, Social Ethics, and Law

### ***Religious Studies***

- REL 530 Theological Movements
- REL 562 Contemporary Moral Problems
- REL 568 Evolution and Ethics
- REL 571 Theology and Imagination
- REL 575 Theology and Film
- REL 576 Theology and Art
- REL 577 The Religious Quest in Literature
- REL 582 Models of Catechesis
- REL 583 Religious Psychology
- REL 587 Religious Education as Autobiography
- REL 592 Contemporary Issues

## **GROUP C**

### ***Economics***

- MBA 500A Graduate Survey in Economics
- MBA 540 Managerial Economics
- MBA 541 Labor Relations and Labor Economics
- MBA 545 National Economic Policy and Forecasting
- MBA 550 Government and Business
- MBA 570 Business and Society

### ***Foundations of Education***

- EDT 501 Learning Theory and Education
- EDT 504 Human Development and Education
- EDT 509 Politics of Education

### ***Political Science***

- POL 502 Colloquium in American Politics
- POL 505 The Politics of Bureaucracy and Regulation
- POL 521 Seminar: Intergovernmental Relations
- POL 545 Seminar: Urban Politics and Policy
- POL 546 Seminar: Public Opinion and Political Behavior
- POL 552 Government Planning
- POL 555 Urban and Local Administration
- POL 557 Seminar: State Government and Politics

- POL 571 Seminar: Judicial and Constitutional Politics
- POL 572 Administrative Law
- POL 576 Public Personnel Administration
- POL 579 Seminar: Selected Topics in Public Policy

**Psychology**

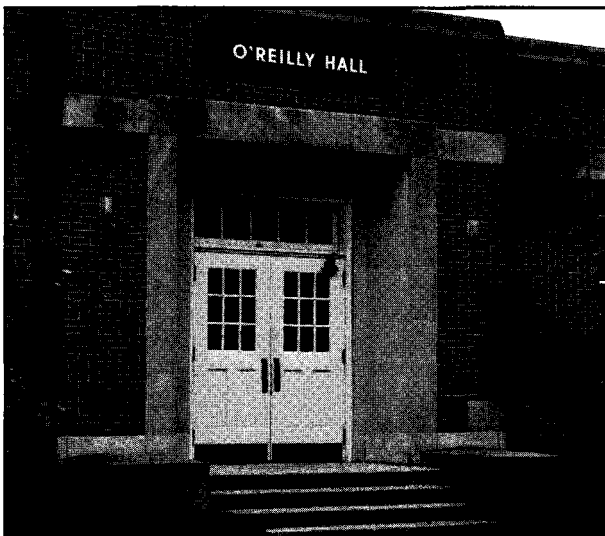
- PSY 522 Advance Cognitive Processes
- PSY 524 Human Information Processing
- PSY 525 Basic Processes in Learning and Memory
- PSY 526 History and Systems
- PSY 571 Experimental Child Psychology
- PSY 573 Developmental Psychology
- PSY 585 Experimental Social Psychology
- PSY 586 Applied Social Psychology
- PSY 587 Social Influences and Group Dynamics
- PSY 588 Interpersonal Processes
- PSY 589 Attitudes

**American Studies**

- AMS 590 Interdisciplinary Research

**COURSE OF INSTRUCTION**

AMS 590. INTERDISCIPLINARY RESEARCH: A study of the principles of interdisciplinary scholarship as well as of what can and probably cannot be accomplished by it. Contact with a teacher on a regular basis. The student produces a self-designed study of information from at least two disciplines. 3 sem. hrs.



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**Department of  
BIOLOGY (BIO)**

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Kenneth J. McDougall, Chairperson of the Department

John Rowe, Director of the Program in Biology

The Department of Biology offers programs leading to the Master of Science and the Doctor of Philosophy. Ph.D. applicants without a Master's degree will initially be placed in the M.S. program. Students who show outstanding ability may by-pass the M.S. and proceed directly toward the Ph.D.

The degrees are in Biology, but each program is tailored to the student's own interests and career plans. Specialization is accomplished by selection of courses, by choice of thesis or dissertation topic, and by participation in weekly seminars in the area of interest. The specific program is determined after consultation between the student and the advisory committee. Primarily to answer the needs of those already in scientific or teaching professions, the Department of Biology also offers a Master of Science program without a thesis requirement. Four major areas of specialization are available. These areas and typical spectra of graduate courses available are as follows:

***Animal and General Physiology***

Bioinstrumentation	Endocrinology
Pathophysiology	Immunology
Cell Physiology	Comparative Animal Physiology
Biochemistry	Biometrics
Experimental Embryology	

***Ecology/Field Biology***

Bioinstrumentation	Vertebrate Zoology
Population Biology	Invertebrate Zoology
Aquatic Biology	Microbial Ecology
Field Biology	Biometrics

***Plant and Cell Physiology***

Physiology of Higher Plant	Cell Physiology
Advanced Plant Physiology	Bioinstrumentation
Biochemistry	Biometrics
Biochemical Genetics	

***Microbiology and Genetics***

Bioinstrumentation	Biochemical Genetics
Pathogenic Bacteriology	Advanced Microbiology
Microbial Ecology	Immunology
Electron Microscopy	Biochemistry
Clinical Studies	Biometrics

## ASSISTANTSHIPS

Qualified applicants are eligible for financial assistance in the form of fellowships, traineeships, or research or teaching assistantships. Students admitted to the doctoral program are given priority for these awards. In addition to a stipend, all appointments are exempt from tuition during both the academic year and the summer session. Financial aid is usually available during the summer on a competitive basis.

## ADMISSION REQUIREMENTS

Applicants with Bachelor's degrees from accredited schools may be admitted to full graduate standing if their grades are well above the average required for the Bachelor's degree. Those with lower averages may be considered for acceptance on a probationary status, in which case particular attention will be given to the last 60 semester hours of the undergraduate program. Applications for doctoral work are accepted from holders of the M.S. Admission to the Ph.D. program at the University of Dayton requires research experience equivalent to the M.S. thesis. Ordinarily, a student will not be accepted with full standing into a Ph.D. program unless funds are available for support.

Applicants should have the equivalent of the science and mathematics requirements of the University of Dayton's Bachelor of Science in Biology. These include one year of calculus, Physics, and organic Chemistry, plus sufficient background in Biology to demonstrate a knowledge of cell Biology, genetics, developmental, and environmental Biology. Normally, a student who lacks more than one prerequisite will not be admitted to full graduate status. However, the summer session prior to entry can be used to remove a deficiency. Complete, current GRE scores (verbal, quantitative and analytical) are *required* of all applicants.



Kenneth J. McDougall.  
*Department of Biology.*



## ADVISING

Each new student is assigned a provisional advisor for assistance during the first semester. Prior to registration for the second semester each student selects a major professor, who serves as director of the student's advisory committee. The composition of this committee is representative of the general field of study in which the student expects to work.

The committee helps to plan the student's entire program. Prior to the beginning of the second semester of the M.S. program the student declares a choice of thesis or non-thesis option. The committee generally meets with the student twice a year to offer suggestions and to assess progress in the program and thesis research.

## PROGRAM REQUIREMENTS FOR THE MASTER OF SCIENCE

The M.S. degree requires 24 semester hours of work plus a thesis. A typical M.S. program includes in the 24 hours four semesters of BIO 601 (special topics in the area of specialization), BIO 552-553 (Biological Instrumentation), and supporting courses from the area of interest.

Students declaring the non-thesis option are required to complete 30 hours of course work and are expected to complete both BIO 552 and 553 in order to increase laboratory experience in the absence of thesis research. A research paper is required by the advisory committee.

All students are expected to attend BIO 501, Departmental Seminar, each semester. This is considered to be an important unifying experience for all aspects of the graduate program. In order to develop teaching skills, all students are required to teach at least one laboratory course during their time in residence and to enroll in EDS 604, College Teaching Seminar (1 semester hour). These requirements are waived only by the chairperson.

## COMBINED B.S./M.S. PROGRAM IN BIOLOGY

The B.S./M.S. in Biology is an accelerated, highly structured program that is designed for students who show an early interest in, and a strong potential for, research in the biological sciences. The combined program provides an undergraduate liberal arts education, a broad, basic background in the biological sciences, the development of expertise in a biological subfield, and thorough introduction to research instrumentation and techniques. Graduates from the program are prepared for either direct entry into the job market or for continuation toward the Ph.D. degree.

An early commitment to the program and utilization of 3rd Term sessions during the third and fourth years allows completion of all required B.S. and M.S. course work in five years. Normally the Bachelor's degree is awarded at the end of the 1st Term of the fourth year. Qualifying examinations for Master's candidacy take place during the 1st Term of the fifth year. The M.S. component of the combined program requires a research thesis. If the thesis work is underway during the fourth year it can ideally be finished by the end of the fifth year. The Master's degree is awarded upon the successful defense of the M.S. thesis.

Potential applicants to the B.S./M.S. program in Biology should declare their intentions to the department chairperson as soon as possible. Formal entry into the combined B.S./M.S. program should occur during the junior year. Details of application procedures, admissions criteria, curricula and financial support can be obtained directly from the Department of Biology.

## **DOCTOR OF PHILOSOPHY**

There are no set course requirements for the Ph.D. degree; each student follows the program outlined by the advisory committee. In practice most students find it helpful to take 80 to 90 semester hours of graduate course credits beyond the Bachelor's degree to attain the level of competence suitable for a doctoral candidate. When it is desirable, a student will be encouraged to take some work at neighboring institutions or summer laboratories. As in the M.S. program, BIO 501, 552, 553 and 601 are required courses in the Ph.D. program.

## **Ph.D. CANDIDACY EXAMINATION**

This oral examination for Ph.D. students is administered by the advisory committee, which may be supplemented by members requested by the committee and/or the department chairperson. The examination will be taken no later than the student's sixth semester for full graduate standing or, for the student who has a Master's degree in an appropriate field at the time of enrollment, no later than the fourth semester. The purpose of the examination is to judge the student's competence in the special area and in related fields. Following the examinations the student may be directed to (a) complete the dissertation, (b) strengthen preparation by demonstrating competence in one or more areas, (c) withdraw from the program. At the committee's discretion, additional competence in an area may be demonstrated by special examination or by completion of specific courses to the committee's satisfaction. The student is considered a candidate for the Ph.D. after successful completion of these requirements.

## **DEFENSE OF THESIS OR DISSERTATION**

- 1) The examination on the thesis, whether for the M.S. or the Ph.D., will constitute an oral examination on the subject matter of the thesis or dissertation.
- 2) For students electing the non-thesis option an oral examination is held over the subject matter of the research paper.
- 3) A Ph.D. student must present the dissertation for defense within *five* years after admission to candidacy or repeat the candidacy examination.
- 4) All those working toward the Master's degree must complete the program within *five* years after admission to full graduate standing.

## **TOOLS OF RESEARCH**

Since the needs of the individual student vary with the background and type of research chosen, this requirement will be determined by the committee.

The tools of research are normally for Ph.D. candidates only and, as determined by advisory committees, may include one or two of the following: a reading knowledge of French or German or Russian or Spanish; an ability to program a digital or analog computer.

## **RESIDENCE REQUIREMENT**

A student is strongly advised to devote as much time as possible to graduate studies. Normally attendance at the University as a full-time student for one full year for the M.S. and for two full years for the Ph.D. will satisfy the residence requirement. If the advisory committee encourages attendance of a semester or a summer as a full-time student at a neighboring institution, that time may be applied to the residence requirement.

## **SEQUENCE OF EVALUATION**

The program is centered around development of professional competence. Each student is assessed in the following steps:

- 1) a preliminary diagnostic evaluation at the beginning of the program.
- 2) a qualifying examination at the beginning of the second year of full-time graduate study.
- 3) a candidacy examination over the area of specialization (Ph.D. students only).
- 4) a defense of thesis.

The performance of each student is evaluated, at least yearly, in terms of overall progress toward obtaining the degree. A student judged to be making unsatisfactory progress may be placed on probation or dismissed from the program. Further details concerning the policies of the graduate program can be found in: *A Manual for Graduate Study in the Department of Biology at the University of Dayton*. A copy of this is given to every graduate student.

## **PRELIMINARY EVALUATION**

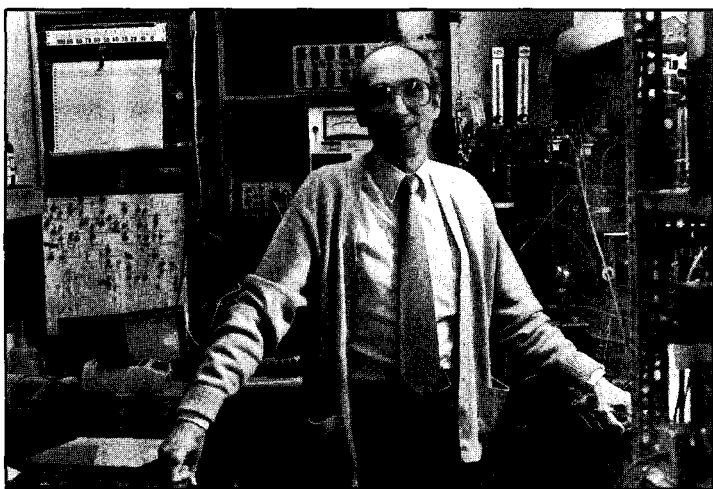
An orientation program introduces new students to the department. During this period, there will be an assessment of the student's background knowledge of cell Biology, genetics, developmental Biology, and environmental Biology. According to the outcome of these examinations and after consultation with the faculty a student may be directed to enroll in one or more of the core undergraduate courses to provide a sufficiently broad base for a professional career. Normally no graduate credit is given for these courses.

## **QUALIFYING EXAMINATION**

At the beginning of the second full year of graduate work, the student will take a qualifying examination. The purpose of the examination is to aid the student's committee in planning the remainder of the program. The examination will cover basic biological concepts, subject matter of graduate courses taken,

and broad areas of the student's specialty. The emphasis will be not only on facts but on the student's command of self-expression, ability to reason, and to integrate knowledge. Depending on the outcome of this examination, and overall performance during the first year, the student then completes the requirement for the M.S. or withdraws from the program. Students showing outstanding ability and wishing to proceed toward the Ph.D. degree may be given the option of by-passing the M.S.

Students who choose to complete a Master's degree are considered candidates for that degree after the qualifying examination. A student who wishes to continue beyond the Master's degree will be advised to continue for the Ph.D. degree or to terminate studies at the University on the basis of the performance in earning the Master's degree.



Bro. Donald R. Geiger, S.M.  
*Department of Biology*

## COURSES OF INSTRUCTION

Certain undergraduate courses in Biology and other science or Engineering departments may be taken for graduate credit if recommended by the major advisor and approved by the Biology chairperson and the graduate dean.

BIO 501. SEMINAR: Presentation of biological research data by staff members and visiting scientists. Required of all graduate students each semester. *0 sem. hr.*

BIO 502. VERTEBRATE ZOOLOGY: The morphology, physiology, ecology, and distribution of representative vertebrate groups. Three hours lecture per week. *3 sem. hrs.*

BIO 502L. VERTEBRATE ZOOLOGY LABORATORY. *1 sem. hr.*

- BIO 505. MICROBIAL ECOLOGY: A study of the diversity of microorganisms and the interrelationships between microorganisms and their environments. Emphasis is placed on aquatic ecosystems. *3 sem. hrs.*
- BIO 505L. MICROBIAL ECOLOGY LABORATORY: Examination of the methods of isolation and enumeration of microorganisms and techniques for determining their activities in the field and laboratory. *1 sem. hr.*
- BIO 512. RADIATION BIOLOGY: Principles concerning the nature of ionizing radiation, its use in studying biological systems, and its effect on organisms. Two hours lecture, and two, two-hour laboratory periods per week. *4 sem. hrs.*
- BIO 517. ENDOCRINOLOGY: Discussion of hormonal regulation of metabolism, growth and reproduction. Three hours lecture. *3 sem. hrs.*
- BIO 517L. ENDOCRINOLOGY LABORATORY: Laboratory dealing with functional analysis of the mechanisms and activity of the endocrine system. *1 sem. hrs.*
- BIO 521. BIOCHEMICAL GENETICS: An analysis of the nature of the gene and gene action. Particular attention will be given to genetic control of protein synthesis and to recent advances in biochemical and physiological genetics. Two hours lecture. *2 sem. hrs.*
- BIO 521L. BIOCHEMICAL GENETICS LABORATORY: A laboratory to accompany BIO 521 employing an experimental approach to genetic problems. Students work the entire term on a project. *1 sem. hr.*
- BIO 522. IMMUNOLOGY: Discussion of antigens, antibody, antigenicity, immunogenicity, and antigen-antibody reactions including hypersensitivity, immune tolerance and transplants. Biochemistry recommended. *3 sem. hrs.*
- BIO 523. ADVANCED MICROBIOLOGY: Lectures, readings and discussions of current concepts in basic and applied microbiology, with emphasis on modern methods of microbial taxonomy, major groups of bacteria, microbial ecology, and industrial fermentation. *3 sem. hrs.*
- BIO 524. CELL PHYSIOLOGY: The molecular basis for structure and function and energy transduction in animal and plant cells as well as the organization, function and development of membrane and subcellular organelles. *3 sem. hrs.*
- BIO 524L. CELL PHYSIOLOGY LABORATORY: Isolation and chemical characterization of cellular organelles, study of cell structure by light microscope. *1 sem. hr.*
- BIO 530. COMPARATIVE ANIMAL PHYSIOLOGY: Organized on a function-system basis, the course deals with environment-organism interaction and with integrative systems of the principal phyla of animals. *3 sem. hrs.*
- BIO 530L. COMPARATIVE ANIMAL PHYSIOLOGY LABORATORY: Laboratory to accompany BIO 530, must be taken concurrently with BIO 530. *1 sem. hr.*
- BIO 531. EXPERIMENTAL EMBRYOLOGY: Morphological and physiological aspects of development along with an introduction to teratology. Three hours lecture per week. *3 sem. hrs.*

BIO 535. PROBLEMS IN FIELD BIOLOGY: A course designed to acquaint students with field-oriented problems in Biology. *1-3 sem. hrs.*

BIO 538. POPULATION BIOLOGY: An advanced course considering the relationship of genetics and ecology. Emphasis on the growth and regulation of natural populations. Prerequisites: ecology and genetics. *3 sem. hrs.*

BIO 538L. POPULATION BIOLOGY LABORATORY: Field and laboratory exercise to accompany BIO 538. *1 sem. hr.*

BIO 540. PHYSIOLOGY OF HIGHER PLANTS: Uptake and transport of materials, energy metabolism, and growth in higher plants. Three hours lecture per week. *3 sem. hrs.*

BIO 540L. PHYSIOLOGY OF HIGHER PLANTS LABORATORY *1 sem. hr.*

BIO 546. PLANT DEVELOPMENT: Study of the major organ systems of the vascular plants with emphasis on the nature of their cell types and tissue composition and their patterns of development. *3 sem. hrs.*

BIO 546L. PLANT DEVELOPMENT LABORATORY *1 sem. hr.*

BIO 550. BIOMETRICS: The design and analysis of experiments in quantitative Biology. Rectilinear and curvilinear regression, correlation, and the distribution function of various statistics. *3 sem. hrs.*

BIO 552. BIOLOGICAL INSTRUMENTATION: The theory of separation, measuring and data handling techniques, and their applications to modern Biology. Required of all graduate students. Two hours lecture, and two, two-hour laboratory periods per week. *4 sem. hrs.*

BIO 553. BIOLOGICAL INSTRUMENTATION: A continuation of BIO 552. *2 sem. hrs.*

BIO 554. ELECTRON MICROSCOPY: A course covering the basic principles underlying the use of the electron microscope. Topics include different methods of preparing biological specimens for the electron microscope, their use in research, and interpretation of electron micrographs. *2 sem. hrs.*

BIO 554L. ELECTRON MICROSCOPY LABORATORY: Instruction and practice in the use of the electron microscope. Specimen preparation including fixation, dehydration, embedding and thin sectioning, and darkroom procedures are covered in this lab. *2 sem. hrs.*

BIO 555. LABORATORY TECHNIQUES (TOPIC): Advanced treatment of new techniques and instrumentation used in specialized areas of Biology. Changes with advances in a specialty reflected in the course title. *1-3 sem. hrs.*

BIO 560. ADVANCED PLANT PHYSIOLOGY: A treatment of several areas of plant physiology based on current research literature. Since the course is taught from current journals, the topics change. May be repeated. Prerequisite: a course in plant physiology. *2 sem. hrs.*

BIO 564. **PATHOPHYSIOLOGY:** The role of physiological stress in human physiology and its relation to the disease process. Attention to status assessment through the critical interpretation of clinical laboratory data. *3 sem. hrs.*

BIO 564L. **PATHOPHYSIOLOGY LABORATORY** *1 sem. hr.*

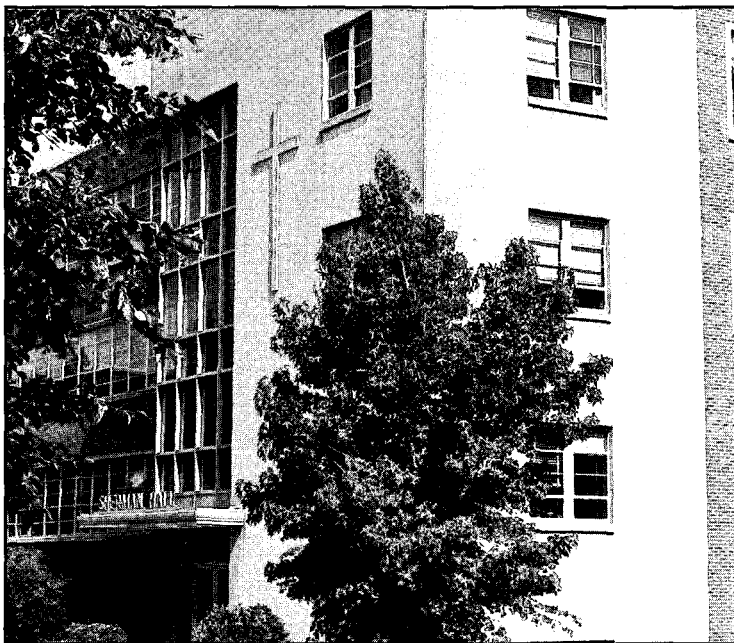
BIO 580. **CLINICAL STUDIES (TOPIC):** Hospital or other clinical experience in patient-oriented areas of Biology such as Microbiology, Mycology, Immunology, Parasitology and Physiological Chemistry. Permission required. *1-6 sem. hrs.*

BIO 596. **CURRENT BIOLOGY PROBLEMS:** The consideration of recent developments in biological thought and procedure. By permission of chairperson only. *1-3 sem. hrs.*

BIO 599. **THESIS** *3-6 sem. hrs.*

BIO 601. **SPECIAL TOPICS:** The development, presentation, and discussion of topics in specialized areas of Biology. Required of all graduate students each semester. *1 sem. hr.*

BIO 699. **DISSERTATION** *3-6 sem. hrs.*



*Sherman Hall.*

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# MASTER OF CLINICAL LABORATORY TECHNOLOGY (CLT)

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Charles J. Chantell, Program Director

## ADVISORY STAFF

Margaret R. Carroll, M.A., M.T. (ASCP), Clinical Assistant Professor of  
Medical Technology, Miami Valley Hospital

Charles J. Chantell, Ph.D., Associate Professor of Biology,  
College of Arts and Sciences

Helen B. Frye, Ph.D., Professor of Teacher Education, School of Education

Shirley A. Pohl, M.A., M.T. (ASCP), Clinical Assistant Professor of  
Medical Technology, Good Samaritan Hospital

Harry A. Washing, Ph.D., Associate Professor of Management,  
School of Business Administration

The goal of the CLT program is to educate practicing clinical laboratory scientists (MT, CT, NMT) as specialists in either health science administration or health science education. The program emphasizes an interdisciplinary approach utilizing existing graduate and upper-level undergraduate courses from the College of Arts and Sciences, School of Business Administration, and the School of Education plus specialized clinical courses to add depth and breadth to the individual's graduate study. Each student's curriculum can be structured to meet specific needs and career objectives.

## ADMISSION POLICIES

The CLT program is open to students who:

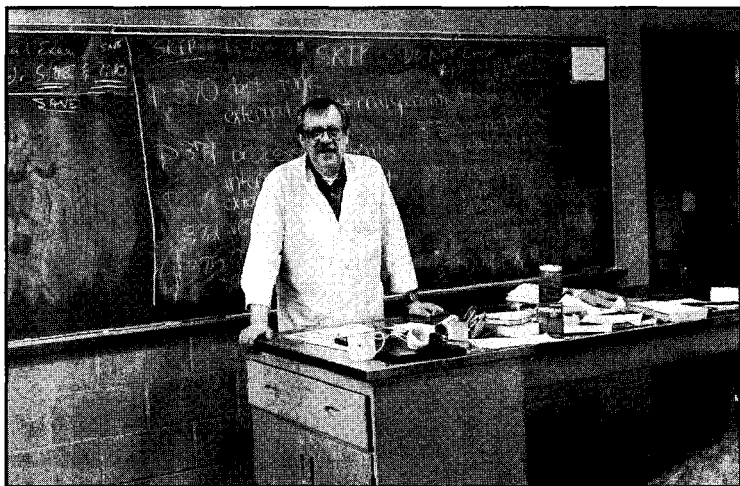
- 1) Have earned a Baccalaureate degree in a health science field from an accredited institution,
  - 2) Have had professional certification from the appropriate accrediting body, and
  - 3) Have had clinical laboratory work experience in their professional specialty.
- Formal acceptance into the CLT program will normally occur in the Fall. However, potential applicants can enroll in the Graduate School at any time as unclassified students. Courses taken during this time can be credited in the CLT program upon formal acceptance of the applicant.

Applicants may be admitted to full graduate standing if their grade point average is the equivalent of 2.9 or higher. Those with lower averages may be considered for acceptance on a probationary status. In the latter case particular attention will be given to the last sixty semester hours of the undergraduate program with special emphasis on grades in basic and clinical science courses.

Graduate Record Examination scores for the verbal, quantitative and analytical segments of the test are required for admission. Applicants should request that three letters of reference, preferably from academic and clinical sources,



be submitted to the Graduate Office. Along with the application form, a prospective student must submit a letter of not more than 1,000 words stating career objectives and reasons for entering the program.



Charles J. Chantell.  
*Department of Biology.*

## ADVISING

After formal acceptance into the program, each student is assigned a committee of three faculty from the advisory staff who reflect the student's area of interest. Initial course selections will be made by the student and the Program Director. Formal committee meetings will be held at the end of each academic year to plan an appropriate curriculum and review progress. The committee and the student will develop, through written presentation, a project dealing with an administrative or educational aspect of laboratory function. After the completion of a minimum of 24 semester hours, a final meeting of the student and the Advisory Committee takes place. The purpose of this meeting is to evaluate the clinical project and administer a comprehensive examination. The format of this examination includes written and oral portions covering areas determined by the committee. Successful completion of this examination and positive assessment of completed work results in approval of the student's candidacy for the Master of Clinical Laboratory Technology degree upon completion of 30 semester hours of program course work.

## PROGRAM REQUIREMENTS

The CLT degree requires a minimum of 30 semester hours of course work. The overall structure of the program has three curricular groupings.

**GROUP I***Semester Credit Hours*

<b>Required Courses</b> .....	10 to 12
EDT 648 Techniques in Hospital Instruction .....	2
MBA 500D Graduate Survey in Management and Organization .....	3
CLT 597 or 598 Practicum in Clinical Laboratory Administration or Education .....	3
BIO 580 Clinical Studies (Topic) .....	1 to 2
BIO 601 Special Topics .....	1

The EDT and MBA courses are taken early in the program, the CLT and BIO courses are taken later in the program. The latter courses attempt to integrate academic theory with the reality of the clinical laboratory.

**GROUP II****Science Electives** ..... 6 to 7

So as to maintain and strengthen technical skills, all CLT students must take two elective courses. These can be chosen from Biology and Chemistry graduate courses (and certain undergraduate courses) and include, but are not limited to, the following:

BIO 512 Radiation Biology	BIO 552 Bioinstrumentation I
BIO 517 Endocrinology	BIO 553 Bioinstrumentation II
BIO 521 Biochemical Genetics	BIO 564 Pathophysiology
BIO 522 Immunology	CHM 551 General Biochemistry I
BIO 550 Biometrics	CHM 552 General Biochemistry II

**GROUP III****Management/Education Electives** ..... 12 to 14

The remainder of each CLT student's program should emphasize the administrative or teaching end-goal. Appropriate courses from the College of Arts and Sciences and the Schools of Business Administration and Education include, but are not limited to, the following:

MGT 314 Personnel Management	EDT 501 Learning Theory and Education
MGT 440 Women in Management	EDT 502 Philosophical Studies in Education
MBA 500B Survey in Accounting	EDT 503 Educational Research Methodology
MBA 500E Survey in Statistics	EDT 507 Teaching and Learning Styles
MBA 500G Survey in Quantitative and Computer Methods	EDT 538 Introduction to Computers
MBA 563 Management Information and Control Systems	EDT 539 Computers in Education
MBA 571 Organizations and Their Environments	EDT 540 Advanced Computers in Education
MBA 580 Organizational Theory	EDT 541 Methods: Computers in Education
MBA 585 Organizational Systems	
MBA 586 Interpersonal Dynamics in Organizations	
MBA 587 Organizational Behavior	

PSY 431	Interviewing and Counseling	EDA 513	Evaluation of Educational and Organizational Systems
EDC 530	Psychology of Individual Differences	EDT 637	Test Construction Measurement
EDC 531	Dynamics of Personality		

The number of semester hours earned in Management or Education courses cannot exceed 49% of the total semester hours earned.

## COURSES OF INSTRUCTION

Descriptions of all above-mentioned courses, except CLT 597 and 598, can be found under the appropriate department or program headings in the graduate and undergraduate bulletins.

**CLT 597. PRACTICUM IN CLINICAL LABORATORY ADMINISTRATION:** Course is limited to four to seven students at one time: a personalized work study experience with a laboratory supervisor concentrating on patterns of work flow, requisition distribution, recording and reporting systems, emergency procedures, priority decision making, personnel work and time assignments, use of quality control data, and relationships with other hospital personnel. Prerequisite: MBA 500D. *3 sem. hrs.*

**CLT 598. PRACTICUM IN CLINICAL LABORATORY EDUCATION:** Course is limited to four to seven students at one time: a personalized work study experience with an educational coordinator of a hospital medical technology program. Emphasis is placed on planning, structuring and evaluating learning experiences. An opportunity is afforded to relate educational theory to practice. Prerequisite: EDT 648. *3 sem. hrs.*

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Department of  
**CHEMISTRY (CHM)**

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B. Lawrence Fox, Chairperson of the Department

The Department of Chemistry offers graduate programs leading to the Master of Science and the Master of Clinical Chemistry.

## **CHEMISTRY PROGRAM**

The purpose of the Master's program in Chemistry is to present a rigorous approach to modern theories in Chemistry and to increase the desire and potential for fundamental research through a program of literature search and laboratory experimentation.

Written examinations are given to assist the student and advisor in formulating the student's program.

## **ASSISTANTSHIPS**

Teaching assistantships normally requiring a maximum of 9 hours of laboratory instruction per week are available. The stipend for a 9-12 month appointment is supplemented by tuition remission for graduate course work. Appointment as a teaching assistant requires fluency in spoken English. Research assistantships in selected areas are sometimes available. Current availability may be ascertained by contacting the Chemistry Department.

## **ADMISSION REQUIREMENTS**

The undergraduate prerequisites are the minimum requirements specified by the American Chemical Society. Those students who have graduated from A.C.S.-approved schools will have fulfilled these requirements. Others may have to take certain courses concurrently from the undergraduate program to meet A.C.S. requirements. Complete, current Graduate Record Examination (GRE) scores, including the Advanced Chemistry examination, are recommended of all applicants and are required of all international students.



Lawrence B. Fox.  
*Department of Chemistry.*

## PROGRAM REQUIREMENTS

Normally 30 semester hours are required for the Master of Science. These include 21-24 semester hours of course work and 6-9 semester hours of research. The course work hours must include at least three semester hours in each of the major fields of organic, physical, and inorganic Chemistry. The student and advisor decide upon the remainder of the program. Electives in other departments may be chosen with the approval of the Chemistry department chairperson.

All candidates for the Master of Science are required to submit proof of their ability to do independent work. Normally this proof takes the form of a thesis. Additional course work may be substituted if the student has previously demonstrated research proficiency commensurate with the Master's degree as judged by the department.

## BIOCHEMISTRY OPTION

This option is designed for students planning careers in Biochemistry or the medical sciences. Those who want to specialize in Biochemistry should have undergraduate preparation in general, analytical, organic, and physical Chemistry. Applicants with an undergraduate degree in Biology together with a sufficient background in Chemistry are ideally suited for this program. The degree will require 30 semester hours, of which 21-24 semester hours are from approved course work and 6-9 semester hours are from thesis research.



*Wohleben Hall.*

## CLINICAL CHEMISTRY PROGRAM

The purpose of the program leading to the Master of Clinical Chemistry is to provide experienced clinical laboratory personnel with advanced training in basic Chemistry, analytical procedures, modern biochemistry, and clinical chemical research. It may also prepare the student for an advanced degree (Ph.D.) program in clinical Chemistry.

### ADMISSION REQUIREMENTS

All entering students must have prior work experience in a clinical laboratory. Typical students will have a Bachelor's degree in areas such as medical technology, Chemistry, Biology or premedicine/pre-dentistry. Undergraduate course requirements include the equivalent of 2 semesters each of general and organic Chemistry and one semester each of quantitative analysis and physical Chemistry. Students lacking one of the requirements may be admitted on the condition that the deficiency is rapidly corrected by course work, no graduate credit being allowed.

### PROGRAM REQUIREMENTS

#### *Laboratory Experience*

The normal requirements for the Master's degree are 30 semester hours, with a minimum of 21 semester hours of approved course work and up to 9 hours for an approved thesis and oral defense of the thesis. Students with sufficient experience in clinical Chemistry research can petition for the non-thesis option, which requires 30 hours of course work. Approval of the department is required for waiver of thesis work. Students are required to pass an oral examination to prove competence in clinical Chemistry laboratory practices.

Each candidate, in consultation with an advisor, will select a program of study designed according to the student's goals and background, to fulfill the requirements for the Master's degree. The program, and any subsequent changes, must be approved by the department.

#### *Suggested Courses*

	<i>Semester Hours</i>
CHM 517	Inorganic Chemistry . . . . . 3
CHM 506, 506L	*Identification of Organic Compounds . . . . . 4
CHM 515, 515L	Analytical Chemistry . . . . . 3
CHM 551, 552	General Biochemistry I, II . . . . . 6
CHM 555	Special Topics in Clinical Chemistry . . . . . 1
CHM 557, 558	Applications of Clinical Chemistry I, II . . . . . 2
CHM 512	Intermediate Organic Chemistry . . . . . 3
CHM 550	Biometrics . . . . . 3
CHM 560, 561	Research . . . . . 6

\*CHM 507 must be taken by students who do not enroll in CHM 506.

**COURSES OF INSTRUCTION**

CHM 504. SPECIAL TOPICS IN THEORETICAL CHEMISTRY: A treatment of special topics surveyed in CHM 527-528. Prerequisite: CHM 304. *3 sem. hrs.*

CHM 506. IDENTIFICATION OF ORGANIC COMPOUNDS: Systematic study of the reactions of functional groups and of the physical and spectral properties of organic compounds leading to their identification. Two class periods per week. Prerequisite: CHM 313-314. *2 sem. hrs.*

CHM 506L. IDENTIFICATION OF ORGANIC COMPOUNDS: Laboratory course to accompany CHM 506. Two three-hour laboratory periods per week. *2 sem. hrs.*

CHM 507. INTRODUCTION TO SPECTROSCOPY: A lecture course that treats NMR, IR, and MS theory and interpretation. One class meeting per week. Prerequisite: CHM 314 or equivalent. *1 sem. hr.*

CHM 512. INTERMEDIATE ORGANIC CHEMISTRY: Modern theory of organic Chemistry and reaction mechanisms. Prerequisite: CHM 314 or equivalent. *3 sem. hrs.*

CHM 515. ANALYTICAL CHEMISTRY: Methods of analysis based on modern instrumentation including chemical, electrical and spectral methods. *2 sem. hrs.*

CHM 515L. ANALYTICAL CHEMISTRY LABORATORY: A laboratory course to accompany CHM 515. *1 sem. hr.*

CHM 517. INORGANIC CHEMISTRY: An introductory course. The fundamentals of modern inorganic chemistry including atomic structure, principles of structure and bonding, acid-based chemistry, periodicity, coordination compounds, nonaqueous solvents, electro-chemistry, molecular symmetry, and the chemistry of representative elements. *3 sem. hrs.*

CHM 539. SPECIAL TOPICS IN PHYSICAL CHEMISTRY: Topics of current interest in areas such as chemical instrumentation, electronics, physical biochemistry, macromolecular Chemistry, and spectroscopy. *3 sem. hrs.*

CHM 544. COORDINATION CHEMISTRY: Properties of transition metal ions, reaction mechanisms in coordination compounds, bioinorganic systems, electron transfer mechanisms, and the experimental tools common to coordination Chemistry. Prerequisite: CHM 517 or equivalent. *3 sem. hrs.*

CHM 546. SPECIAL TOPICS IN MODERN ANALYTICAL CHEMISTRY: Modern analytical methods. Subject matter may include NMR, EPR, electroanalytical methods, GLC, mass spectrometry, IR and Raman spectroscopies, visible and ultraviolet spectrophotometric methods, X-ray techniques, ESCA and Auger spectroscopies, atomic absorption, and fluorescence. *3 sem. hrs.*

CHM 550. SPECIAL TOPICS IN ORGANIC CHEMISTRY: Modern physical organic Chemistry, spectroscopy, photochemistry, molecular rearrangements, stereochemistry, and natural products. *3 sem. hrs.*

CHM 551. GENERAL BIOCHEMISTRY I: The chemistry of proteins, carbohydrates, lipids, and nucleic acids. The metabolism of these compounds is related to bioenergetics, membranes, enzymes, and certain disease processes. Prerequisites: CHM 314 and 201.  
3 sem. hrs.

CHM 552. GENERAL BIOCHEMISTRY II: Electron transport and oxidative phosphorylation, lipid metabolism, nitrogen metabolism, nucleic acid and protein synthesis, biochemical genetics, regulation, hormones, and nutrition. Prerequisite: CHM 551.  
3 sem. hrs.

CHM 553. TOPICS IN BIOCHEMISTRY: Topics of current interest in biochemistry. Prerequisite: CHM 551 or 552 or permission of instructor.  
1-3 sem. hrs.

CHM 554. DIRECTED READINGS  
1-3 sem. hrs.

CHM 555. SPECIAL TOPICS IN CLINICAL CHEMISTRY: Topics of current interest in clinical Chemistry.  
1-3 sem. hrs.

CHM 557. APPLICATIONS OF CLINICAL CHEMISTRY I: The relationship between medical practice and clinical chemistry. Each class will be devoted to the study of hospital cases related to a single disorder. Physicians present the medical aspects. A clinical chemist presents the laboratory work and specific problems.  
1 sem. hr.

CHM 558. APPLICATIONS OF CLINICAL CHEMISTRY II: A continuation of CHM 557.  
1 sem. hr.

CHM 560-561. RESEARCH  
0-9 sem. hrs.

CHM 562L. INTRODUCTORY BIOCHEMISTRY LABORATORY: Spectrophotometry; pH and dissociation; thin-layer, column, and paper chromatography; enzymology and enzyme purification, quantitative and qualitative techniques for studying proteins, amino acids, lipids, carbohydrates, and nucleic acids; and radioisotopic tracer techniques. Corequisite: CHM 551 or special permission of instructor.  
2 sem. hrs.

**NOTE:** *The following courses are not applicable to any Master's degree in Chemistry:*

CHM 502. PHYSICAL CHEMISTRY: A concise treatment of theoretical Chemistry. Prerequisite: CHM 124.  
3 sem. hrs.

CHM 525-526. PRINCIPLES OF ORGANIC CHEMISTRY: An introduction to the fundamentals of organic Chemistry. Prerequisite: CHM 124. 3 sem. hrs. each term.

CHM 525-526L. PRINCIPLES OF ORGANIC CHEMISTRY: Laboratory course to accompany CHM 525-526. One three-hour laboratory per week.

**NOTE:** *The following courses apply only to the Biochemistry option or Master of Clinical Chemistry degree.*

CHM 527-528. THEORETICAL PRINCIPLES OF CHEMISTRY: Prerequisite: CHM 201 or equivalent. Corequisite: MTH 218.  
3 sem. hrs. each term.

CHM 527-528L. THEORETICAL PRINCIPLES OF CHEMISTRY: Laboratory course to accompany CHM 527-528. One three-hour laboratory per week. 1 sem. hr. each term



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## Department of **COMMUNICATION (COM)**

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Donald B. Morlan, Chairperson of the Department

The graduate program of the Department of Communication leads to the Master of Arts.

Recognizing that in our increasingly complex society there is now and will continue to be a need for specialists in communication, the Communication graduate program concentrates on the development of an academically rigorous program. It is particularly appropriate for the student seeking a terminal degree in communication and who is or plans to be employed in a communication-related profession.

The Communication graduate program also encourages interdisciplinary study with cooperating disciplines to achieve a course of study flexible enough to meet the needs of the Ph.D.-bound student, the student returning to or continuing with education, and the primary and/or secondary teacher wishing to improve and update education.

### **ASSISTANTSHIPS**

Graduate assistantships are available. The assistantships carry a stipend and a tuition remission for courses required for the degree. The assistantships are for 1 year with possible renewal for 1 additional year. No student can receive an assistantship for more than 2 academic years.

Assistantships in the department are, for the most part, teaching assistantships. However, some assistantships may carry a reduced teaching load when combined with other departmental responsibilities such as coaching forensics or faculty research assistance.

The minimum requirements for assistantship in the department are:

1. The equivalent of an academic minor in communication and related areas or a demonstrated successful professional background in a communication-oriented occupation for a minimum of 3 years.
2. A 2.8 undergraduate cumulative point average (or the equivalent) and a 3.0 in the academic major or minor (Communication).

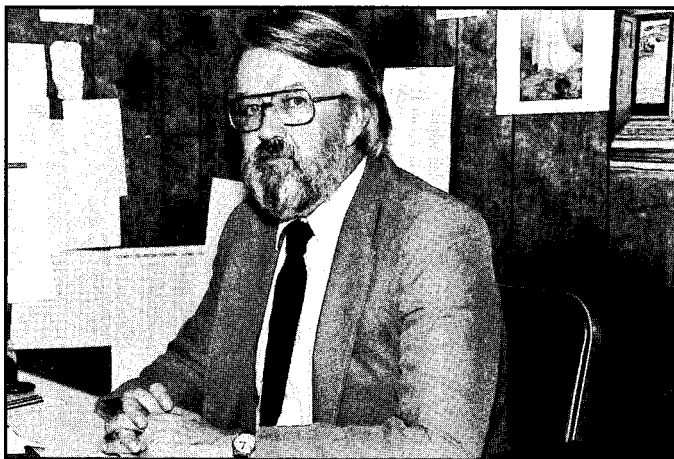
### **ADMISSION REQUIREMENTS**

1. The student seeking admission should have a Bachelor's degree from a recognized institution of higher learning. In case of seniors who have almost completed undergraduate requirements, the graduate committee may permit the taking of graduate courses which will be applied to the Master's degree only after the appropriate Bachelor's degree has been awarded.
2. The student seeking admission should have a 2.8 undergraduate cumulative point average (or the equivalent). The graduate committee will recognize the potential merits of professional experience and/or maturity as they review an applicant's credentials.

3. The student seeking admission will ordinarily have completed those studies necessary in mass and/or speech communication to pursue graduate study with success. The graduate committee will also recognize demonstrated professional accomplishments in a communication field.
4. The student seeking admission for the interdisciplinary plan (Plan B), will ordinarily have completed those studies necessary in the minor area to pursue the interdisciplinary graduate program with success.

Applicants who do not meet the above requirements and yet wish to pursue the graduate program in Communication may, at the discretion of the graduate committee, be admitted on conditional status. Such students may be assigned appropriate undergraduate credit which will not count toward the graduate degree or may be placed on probation until the successful completion (grade B or better) of specific Communication graduate courses (including, but not limited to, the department's core courses — COM 501 and COM 536.

Graduate credit from other accredited institutions will be reviewed by the graduate committee. Transfer of such credit may be accepted up to a maximum of six semester hours.



Donald B. Morlan.  
*Department of Communication.*

## **PROGRAM OPTIONS AND REQUIREMENTS**

### **Requirements for All Students**

All Communication graduate students must complete COM 501 (Critical Study of Communication Research and Methods) and COM 536 (Theories and Models of Communication). Each course is offered 1 term of each academic year.

## **Plan A — Communication (Non-Interdisciplinary)**

There are 2 options under Plan A.

### **1. Thesis Option**

Students take 24 semester hours of course work and 6 hours of thesis credit. Following the completion of the thesis, students are required to present a portion of their thesis in a special program for Communication faculty and interested graduate students. The program cannot be scheduled until the thesis has been approved by the thesis committee.

Before completion of 18 semester hours of course work, students must select their thesis committee.

Students must submit a prospectus which follows department format to the thesis committee and have it approved before major work on the thesis is undertaken.

For details on the prospectus, thesis and special presentation, consult the handbook "Graduate Study in Communication" in the Communication Department office.

### **2. Non Thesis Option**

Students take 36 semester hours of course work. Students are required to write a comprehensive 6-hour examination over their course work. The examination cannot be taken until students have successfully completed 27 semester hours of course work. A student must be enrolled to take the examination.

Students may take the written examination a total of 2 times. Students who do not pass the examination the second time will be dropped from the Communication program. For details on the examination, consult the handbook "Graduate Study in Communication," found in the Communication Department office.

## **Plan B — Communication/Interdisciplinary**

Courses in Business Administration, English, Psychology and Political Science have been designated for Communication/Interdisciplinary study (Plan B) leading to the Master of Arts. There is one option under Plan B.

### **Plan B**

Students take 36 semester hours of course work; 24 of those hours must be in Communication and 12 of those hours in one of the interdisciplinary areas. Students are required to write a comprehensive 6-hour examination over their communication and interdisciplinary course work. The examination cannot be taken until students have successfully completed 27 semester hours of course work.

Students may take the written examination a total of 2 times. Students who do not pass the examination the second time will be dropped from the program. For details on the examination and the Communication/Interdisciplinary program, consult the handbook "Graduate Study in Communication," found in the Communication Department office.

## COURSES OF INSTRUCTION

**COM 501. CRITICAL STUDY OF COMMUNICATION RESEARCH AND METHODS:** Introduction to the study of communication research and methods. Required course for all Communication graduate students. *3 sem. hrs.*

**COM 502. METHODS OF RHETORICAL CRITICISM:** Critical survey and application of traditional to contemporary methods of rhetorical criticism. Prerequisite: COM 501. *3 sem. hrs.*

**COM 503. EXPERIMENTAL METHODS IN COMMUNICATION RESEARCH:** Procedures and methods used in designing and executing experimental research in the field of communication. Experimental designs; hypothesis formation; the experimental plan; and data analysis. Prerequisite: COM 501. *3 sem. hrs.*

**COM 506. ETHICS OF COMMUNICATION:** Investigation and application of the general ethical principles of persuasion and the special problems related to professional areas: platform and business communication, electronic and print journalism, public relations, classroom communication, and forensic behavior. *3 sem. hrs.*

**COM 508. THE PROCESS OF INTERPERSONAL COMMUNICATION:** Focus on the theories, concepts, constructs, and research related to the process of interpersonal communication. *3 sem. hrs.*

**COM 511. THEORIES OF PERSUASION:** An examination of the major approaches to the study of persuasion from classical rhetorical to contemporary behavioral theorists. *3 sem. hrs.*

**COM 515. LANGUAGE IN COMMUNICATION:** Study of language barriers to effective communication as developed by major theorists in general semantics. Special emphasis on the works of Alfred Korzybski and Samuel Bois. *3 sem. hrs.*

**COM 517. ORGANIZATIONAL COMMUNICATION:** A study of communication activities within organizations: theories and systems of organizational communication, internal communication systems, research methods, and the interface of management and communication. *3 sem. hrs.*

**COM 521. THE INVESTIGATION OF LISTENING PROBLEMS:** Examination of listening theory and problems with implementation through research performed in the students' prospective professional areas. Major objective is the improvement of listening techniques. *3 sem. hrs.*

**COM 526. APPLIED PROFESSIONAL COMMUNICATION:** A practical examination of professional writing and speaking. *3 sem. hrs.*

**COM 527. SMALL GROUP COMMUNICATION:** An examination of the theoretical and practical aspects of small group communication. Topics include: communication and decision-making, communication and conformity, and within-group communication. *3 sem. hrs.*

**COM 530. DEVELOPMENT OF MASS MEDIA:** History and analysis of the development and interdependence of mass media; print and electronic. Emphasis on its role and responsibility in political and economic progress of U.S. *3 sem. hrs.*

COM 531. DIRECTED STUDY IN COMMUNICATION: An intensive study of a specialized area of communication selected through consultation with the instructor. Permission. May be repeated once with change of instructor. *3 sem. hrs.*

COM 536. THEORIES AND MODELS OF COMMUNICATION: Survey and analysis of current theories and models of communication. Required course for all Communication graduate students. *3 sem. hrs.*

COM 537. CONFLICT RESOLUTION THROUGH COMMUNICATION: An analysis of the different methods of communication employed to resolve conflicts. Types of conflict include: marital conflict; role conflict; and societal conflict. *3 sem. hrs.*

COM 540. LAW AND NEWS MEDIA: Limitations of freedom of the press. The right of the people to know and the news media to report, within limits of decency, fair comment, and privacy. Censorship. Off the record material. Libel laws. Copyright restrictions. Postal regulations. *3 sem. hrs.*

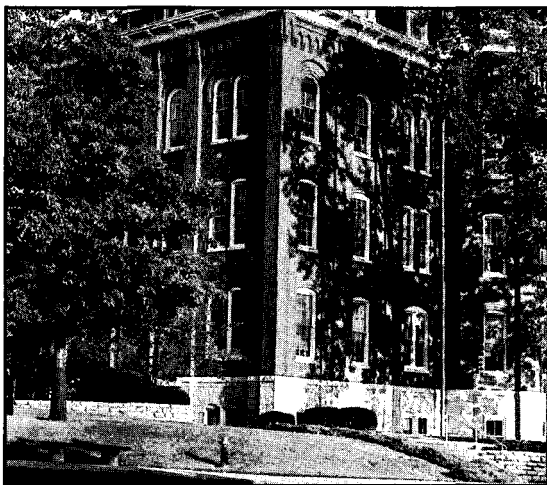
COM 555. PUBLIC RELATIONS WORKSHOP: Investigation and application of communication as students plan and implement a public relations program for an established organization. *3 sem. hrs.*

COM 562. TOPICS IN COMMUNICATION: Selected topics in communication, for example: mass communication, historical and contemporary public address and criticism. May be repeated when topic and instructor change. *3 sem. hrs.*

COM 566. ARGUMENTATION: Principles of argumentation and logic are applied during construction of a professional brief. Oral proficiency stressed. *3 sem. hrs.*

COM 591. PUBLIC RELATIONS INTERNSHIP: Practical public relations participation in an approved organization eight hours weekly. Class meeting, oral presentation, analytical report required. Permission. Prerequisite: COM 555. *3 sem. hrs.*

COM 598-599. THESIS *3-6 sem. hrs.*



*St. Joseph's Hall.*

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Department of  
**COMPUTER SCIENCE (CPS)**

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Lawrence A. Jehn, Chairperson of the Department  
Leon E. Winslow, Director of the Program

The graduate program in the Department of Computer Science leads to the degree of Master of Computer Science (MCS). This is a professional degree program designed primarily for the manager, engineer, educator, or technician involved in computer-related activities. Students whose undergraduate education is in a field other than computer science are encouraged to apply. Certain undergraduate computer science prerequisites are required for admission to the graduate program (see ADMISSION REQUIREMENTS). The program serves both full-time and part-time students and accommodates both professionally oriented students and persons committed to teaching in secondary schools or community colleges.

### **ASSISTANTSHIPS**

Graduate assistantships are offered to qualified students in the MCS program for assisting with or teaching sections of introductory Computer Science courses. The assistantship is essentially an apprenticeship in the introductory aspects of structured programming and algorithm construction. Competent assistants making satisfactory progress toward the degree can normally renew their assistantships for a second year. Recipients are expected to complete the requirements for the Master's degree in two years. Assistants contribute half-time service of 20 hours per week. Stipends and complete tuition remission for six semester hours per term are provided. Detailed information and forms for application may be obtained from the Computer Science department.

### **ADMISSION REQUIREMENTS**

The student seeking admission should have a Bachelor's degree from an accredited institution of higher education with a cumulative grade point average of 3.00. Complete current Graduate Record Exam (GRE) scores (verbal, quantitative and analytical) are required. Applicant's scores should rank in the upper 50th percentile. For success in the program the student should have the equivalent of at least one year of college Mathematics which is normally calculus. Many of the graduate courses have, in addition to the calculus, topics such as linear algebra, statistics, and discrete Mathematics as prerequisites.

For admission to the program, the student must demonstrate better than average knowledge of algorithm construction and its implementation on a digital computer in a structured procedure-oriented language, of assembly programming, and of data structures. This requirement can be met by completing the following undergraduate courses (or their equivalent): CPS 150 Algorithms and Programming I, CPS 151 Algorithms and Programming II, CPS 250 Algorithms and Programming III, and CPS 350 Data Structures

and Algorithms, with a minimum cumulative grade point average of 3.2. The graduate committee of the department will recognize the potential merit of professional experience and/or maturity as it reviews an applicant's credentials.

A student deficient in the undergraduate prerequisites but meeting other admission requirements will be admitted conditionally. A maximum of 9 graduate credits may be earned while in this status. It is the responsibility of the student to apply for regular status upon completion of all prerequisites. Graduate credit from other accredited institutions of graduate learning will be reviewed by the graduate committee. Transfer of such credit may be accepted up to a maximum of six semester hours.

## **PROGRAM REQUIREMENTS**

The degree requires 36 semester hours, 24 of which must be taken from Computer Science courses numbered 510 or above, including CPS 530 Algorithm Design, CPS 532 Data Structures and CPS 536 Operating Systems. The remaining 12 semester hours may be selected from graduate courses of other departments of the university. A minimum of a two semester sequence must be elected when courses are selected from departments other than Computer Science. There is no formal thesis requirement and no foreign language requirement. Each student's program requires the approval of a faculty advisor and will require a series of core courses in the specific area of interest of the student. A student failing to make normal progress will be required to withdraw from the program.

## **APPLICATION**

An application for admission to graduate studies in Computer Science may be obtained from the Office for Graduate Studies, room 200 St. Mary's Hall, University of Dayton 45469. Your application, a transcript of credits, GRE scores, and three letters of recommendation must be returned to the Office for Graduate Studies.

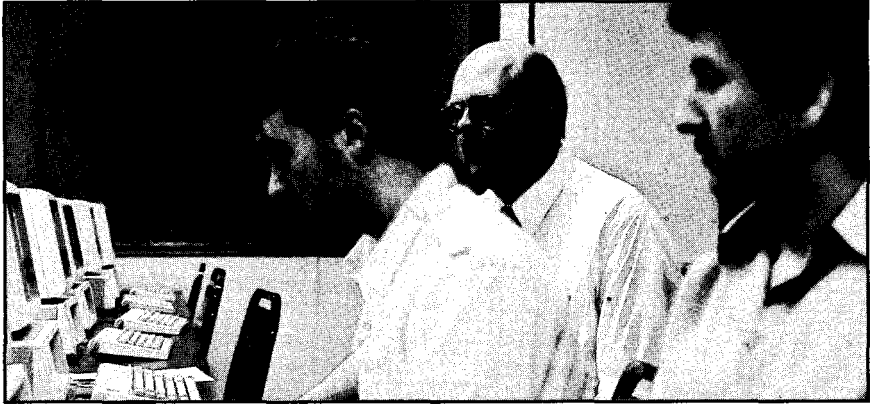
## **INTERNATIONAL STUDENTS**

Students from foreign countries should request information and applications for admission to graduate studies from the Office of International Services. A score of 550 or better is required on the TOEFL exam for those for whom English is a second language. A student from a foreign country seeking admission must have earned at least a Bachelor's degree or its equivalent. For further details see International Students Admission.

## **FACILITIES**

The University's computing resources consist of a UNIVAC Series 90/80-3 Time Sharing System and Digital Equipment Corporation (DEC) VAX 11/780 and an 8600 in a cluster. Students have access to these systems both through terminals located around the campus and through the batch dispatch office. Access from off campus is also available through telephone dial-up facilities.

Both computer systems support a variety of languages including BASIC, FORTRAN, COBOL, PL/I, Pascal, and Ada as well as special languages for specific applications. There is also a large selection of microcomputers available which are used in a variety of courses.



Joseph E. Lang.  
Department of Computer Science.

## COURSES OF INSTRUCTION

*Courses numbered 510 and above have specific prerequisites. It is the students' responsibility to ascertain that they possess the necessary prerequisites for the courses for which they register. Students not having the necessary prerequisites will be required to withdraw from the course. No exception will be made.*

**CPS 502. COMPUTING — GENERAL SURVEY:** A nontechnical introduction to the history and organization of digital computers. Survey of the diverse applications of computers in government, business, education, and the arts. Discussion of the psychological and sociological impact of the computer and information age and related ethical issues. Primarily for students in the humanities and in Education.

3 sem. hrs.

**CPS 509. TOPICS IN COMPUTER SCIENCE:** Lectures in special areas of interest determined by the department. May be taken more than once for additional credit when the topics or contents change. Prerequisite: permission of the department. By arrangement.

1-3 sem. hrs.

**CPS 510. SYSTEMS ANALYSIS:** Systems development life cycle, systems analysts and their environment, tools of the analysts; data flow diagrams, data dictionaries, analyzing process logic; the HIPO technique; normalization; file and data base organization; project management techniques (PERT). Prerequisite: programming ability in a structured procedure oriented language, CPS 342 or 350.

3 sem. hrs.

**CPS 512. SYSTEMS DESIGN:** Introduction to software design methodologies, especially structured design; software productivity; topics related to mainframes, minis, micros, data base, data communications, distributed data processing, project management, privacy and security of automated systems. Prerequisite: CPS 510.

3 sem. hrs.



CPS 514. MANAGEMENT INFORMATION SYSTEMS: The systems approach to managing information; MIS organization within the company; application of organizational behavior to MIS; manager's view of computer systems; planning, designing, and implementing the MIS; advanced concepts of MIS. Prerequisite: CPS 510.  
3 sem. hrs.

CPS 528. DISCRETE STRUCTURES: Survey of various mathematical topics with applications to Computer Science, e.g. graph theory, Boolean Algebra, formal logic. MTH 361.  
3 sem. hrs.

CPS 530. ALGORITHM DESIGN: Concepts of data and their use in the systematic design, implementation, and maintaining of software systems including formal analysis and verification of systems. Prerequisite: CPS 342 or 350.  
3 sem. hrs.

CPS 532. DATA STRUCTURES: Review of basic data concepts, linear lists, strings, arrays, and orthogonal lists, trees and graphs, multilinked structures, searching and sort techniques. Algorithm design and analysis, memory design, system design, accessing methods, run time cost and efficiency. Prerequisite: CPS 530.  
3 sem. hrs.

CPS 536. OPERATING SYSTEMS: Study of operating system principles and the functions of data, job, and task management. Prerequisite: CPS 245 or 250, 342 or 350.  
3 sem. hrs.

CPS 538. OPERATING SYSTEM PRINCIPLES: Models and algorithms pertinent to the design of computer operating systems; concurrent processes including synchronization, communication, and deadlock problems; process and device scheduling policies, design of file systems, reliability and protection. Prerequisites: CPS 532, 536.  
3 sem. hrs.

CPS 542. DATA BASE MANAGEMENT SYSTEMS: Physical and logical organization of data files; hierarchical, network and relational data base models; data definition language and data manipulation language of a commercial data base management system such as IDMS; query languages. Prerequisites: COBOL, CPS 342 or 350.  
3 sem. hrs.

CPS 543. COMPARATIVE LANGUAGES: The evolution of programming languages. The study of the concepts common to languages, constructs, organization, specification, and analysis of languages. The role of languages in software development. Prerequisite: CPS 342 or 350.  
3 sem. hrs.

CPS 544-545. SYSTEMS PROGRAMMING: Analysis of compilers and their construction; programming techniques discussed in the current literature; advanced computer applications in both mathematical and nonnumeric areas. Prerequisites: CPS 530, 536.6 sem. hrs.

CPS 552. DISCRETE EVENT SIMULATION TECHNIQUES: Simulation models; random number generation testing, special purpose simulation languages, statistical analysis of output; regenerative models; trace-driven models. Emphasis on models related to computer operating system design and performance evaluation. Prerequisites: CPS 342 or 350, MTH 367.  
3 sem. hrs.

CPS 555-556. **NUMERICAL ANALYSIS:** Functional approximation, quadrature methods, numerical solution of differential equations; matrices and large scale systems, modern iterative matrix methods; minimax approximations; data smoothing. Prerequisites: FORTRAN 77, MTH 302, 319. *6 sem. hrs.*

CPS 560. **COMPUTER GRAPHICS:** Types of graphic hardware and their characteristics. Overview of software and techniques used in computer graphics. Two and three dimensional graphics displays. Prerequisites: programming ability in a procedure-oriented language, MTH 302, 319, CPS 342 or 350. *3 sem. hrs.*

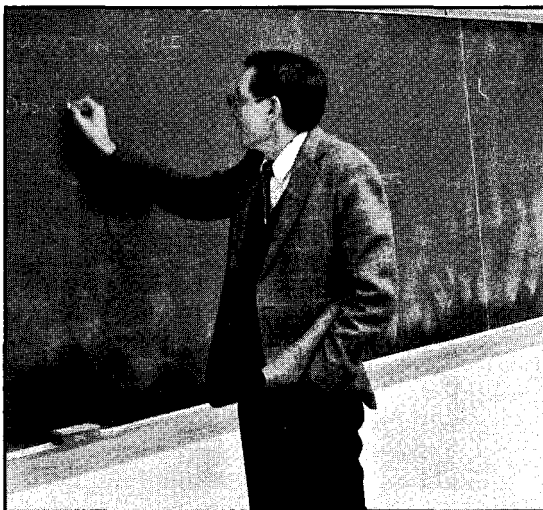
CPS 570. **DATA COMMUNICATIONS:** The study of networks of interacting computers. The analysis of distributed processing and distributed data bases. Prerequisites: CPS 346. *3 sem. hrs.*

CPS 577-578. **COMPUTER SYSTEM DESIGN:** Introduction to design and analysis of combinational and sequential circuits of MSI devices to design arithmetic and other computer functions. Analysis of a specific microcomputer architecture including usage of its machine and assembler language. Interfacing of various components with computers. Prerequisites: CPS 346, PHY 207. *6 sem. hrs.*

CPS 582. **AUTOMATA THEORY:** Finite automata, sequential machines. Turing-machines, computability, existence of self-reproducing machines. Prerequisite: CPS 528. *3 sem. hrs.*

CPS 591. **SPECIAL RESEARCH PROBLEMS:** Individual readings and research in a specialized area. May be taken for at most 6 semester hours. Prerequisite: permission of the department. By arrangement. *1-3 sem. hrs.*

CPS 592. **SPECIAL TOPICS:** Lectures and/or laboratory experience in some areas determined by the department. May be taken for at most 6 semester hours. Prerequisite: permission of the department. By arrangement. *1-3 sem. hrs.*



Leon E. Winslow.  
*Department of Computer Science.*

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## Department of **ENGLISH (ENG)**

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R. Alan Kimbrough, Chairperson of the Department

The program leading to the Master of Arts with a major in English offers advanced study of English and American literature, language, and writing.

The program serves both full-time and part-time students. Besides the traditional courses in English and American literature, it offers special courses in subjects such as applied rhetoric, composition and literature pedagogy, and minority literature. Thus the program accommodates both prospective Ph.D. students and persons committed to teaching in secondary schools or community colleges, as well as liberal arts students eager to develop research skills, writing skills, and literary judgment.

### **ASSISTANTSHIPS**

Graduate assistantships are offered to qualified students in the M.A. program for teaching required sections of basic freshman courses. The assistantship is essentially an apprenticeship in teaching, and most assistants gain experience in both traditional freshman composition and proficiency-based courses. Competent assistants making satisfactory progress towards the degree can normally renew their assistantship for a second year.

### **ADMISSION REQUIREMENTS**

Students seeking admission must have completed studies in English and American literature which will enable them to pursue graduate studies with distinction. Students will ordinarily have completed, with a grade point average of at least 3.0, 24 semester hours in literature, of which at least 18 are in upper-division courses.

### **PROGRAM REQUIREMENTS**

Normally 30 semester hours are required. Every applicant who, after 12 hours of graduate work, has attained a grade point average of at least 2.75 will be given a Diagnostic Examination; this examination will be reviewed with the candidate by the candidate's advisor and two other members of the graduate faculty. They will also review, at this time, the candidate's academic background and comments by faculty members who have had the candidate in classes. On the basis of this material and the review, the Committee will make recommendations about the candidate's graduate program to the chairperson; among these recommendations will be the total number of hours the candidate needs for completion of the degree. Exceptionally well qualified students may earn the Master's degree in fewer than 30 semester hours; students with deficiencies may be required to take up to 36 semester hours of graduate study.

ENG 601, Research and Bibliography, is required of each applicant for the degree. ENG 588, Studies in Criticism, is required of each applicant who has not had a satisfactory undergraduate course in literary criticism. Students in the program must take at least 12 hours of 600-level courses (including ENG 601).

Because the Master of Arts is not a specialist degree, candidates must take a balanced program of courses. Normally such a program will include a balance of early and later literature and of English and American literature or a balance of literature, writing, and teaching.

A thesis upon a topic approved by the Graduate Committee of the department, for which six semester hours of credit are granted, can be accepted if the interview committee recommends this option.



R. Alan Kimbrough.  
*Department of English.*

## COURSES OF INSTRUCTION

Prerequisite for enrolling in any of the following courses for credit is at least 24 semester hours in literature. All 600-level courses normally meet for two hours but yield three semester hours of credit. The starred courses (\*) may be repeated for graduate credit when the topics or contents change.

ENG 505. CREATIVE WRITING\*: Supervised practice in various literary forms. Both group discussions and individual conferences and critiques. Permission of chairperson required. 3 sem. hrs.

ENG 507. STUDIES IN WRITING\*: Special topics in composition, argumentation, technical writing, report writing, and the like. 1-6 sem. hrs.

ENG 514. MEDIEVAL ENGLISH LITERATURE: A study of the dominant types in the literature of England from the beginning to 1500. 3 sem. hrs.

ENG 515. CHAUCER: A study of the life, the times, and language of Chaucer. The main concentration is on *The Canterbury Tales* as rendered in Middle English. 3 sem. hrs.

- ENG 522. EARLY RENAISSANCE LITERATURE: A survey of the literature of the sixteenth century from Thomas More to Sidney and Spenser. *3 sem. hrs.*
- ENG 524. SHAKESPEARE\*: A study of significant aspects of Shakespeare's plays and poems. *3 sem. hrs.*
- ENG 532. LATER RENAISSANCE LITERATURE: A survey of the literature of the early seventeenth century from Bacon, Jonson, and Donne to Marvell, exclusive of Milton. *3 sem. hrs.*
- ENG 536. STUDIES IN DRAMA TO 1642\*: Studies in English drama from the beginning to the closing of the theatres. *3 sem. hrs.*
- ENG 538. MILTON: A study of the major and minor poems and of selected prose of Milton. *3 sem. hrs.*
- ENG 542. STUDIES IN NEO-CLASSICAL LITERATURE\*: Studies in literature from Dryden to Johnson. *3 sem. hrs.*
- ENG 552. ENGLISH ROMANTICISM: A study of the major poets and critics of the Romantic Age. *3 sem. hrs.*
- ENG 556. STUDIES IN NINETEENTH-CENTURY LITERATURE\*: A study of the literature in England in the nineteenth century. *3 sem. hrs.*
- ENG 560. TWENTIETH-CENTURY BRITISH LITERATURE: A consideration of significant developments in modern British literature. *3 sem. hrs.*
- ENG 572. AMERICAN ROMANTICISM: A study of significant developments in American literature of the mid-nineteenth century. *3 sem. hrs.*
- ENG 576. MAJOR AMERICAN WRITERS\*: An intensive comparative study of two or three American writers. *3 sem. hrs.*
- ENG 580. AMERICAN REALISM AND NATURALISM: A study of representative writers from the post-Civil War period in American literature. *3 sem. hrs.*
- ENG 584. STUDIES IN TWENTIETH-CENTURY AMERICAN LITERATURE\*: A study of significant developments in American literature of the twentieth century. *3 sem. hrs.*
- ENG 588. STUDIES IN CRITICISM\*: A treatment of significant topics in theoretical and/or practical criticism. *3 sem. hrs.*
- ENG 590. TEACHING OF COLLEGE ENGLISH: Discussion, instruction, and practice in the methods of teaching composition and literature. Required of and open only to assistants. *1 sem. hr.*
- ENG 591. STUDIES IN LITERATURE\*: An analysis of selected literary problems or areas. *1-6 sem. hrs.*
- ENG 592. HISTORY OF ENGLISH: A study of stages in the development of the English language and of influences shaping its development from the beginning to the present time. *3 sem. hrs.*

ENG 594. **THE STRUCTURE OF ENGLISH:** Studies in the grammatical structure of modern English in the light of historical development. Traditional and modern linguistic points of view considered. *3 sem. hrs.*

ENG 599. **THESIS** *3-6 sem. hrs.*

ENG 601. **RESEARCH AND BIBLIOGRAPHY:** An introduction to the methods and tools of literary scholarship. Required of all degree applicants. *3 sem. hrs.*

ENG 605. **STUDIES IN AN AUTHOR\*:** A consideration of the body of an author's work and its relationship to the life of the author. *3 sem. hrs.*

ENG 609. **STUDIES IN A GENRE OR MODE\*:** An intensive analysis of a significant literary form or mode. *3 sem. hrs.*

ENG 613. **STUDIES IN A LITERARY MOVEMENT\*:** An analysis of a significant literary school, group, or movement. *3 sem. hrs.*

ENG 621. **STUDIES IN THE TEACHING OF LITERATURE\*:** An exploration of ways to teach literature more effectively for particular students. *3 sem. hrs.*

ENG 625. **STUDIES IN THE TEACHING OF COMPOSITION\*:** An exploration of ways to teach writing more effectively for particular groups of students. *3 sem. hrs.*



Kitayun E. Marre.  
*Department of English.*

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**Department of  
HISTORY (HST)**

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Roberta Sue Alexander, Chairperson of the Department

The Department of History through its graduate program seeks to develop in students that combination of mature judgment and scholarly competence associated with the ability to conduct research, to write effectively, and to evaluate historical conclusions and interpretations. As a secondary purpose, the program is designed to prepare students for successful careers especially in teaching, government services, and archival management.

### **ADMISSION REQUIREMENTS**

Applicants for the graduate program in History must have completed a total of twenty-four semester credit hours of History, and achieved a grade point average of at least 3.00 in all History courses.

### **ASSISTANTSHIPS**

Graduate assistantships are available. The assistantships carry a stipend and tuition remission for courses required for the degree. The assistantships are for one year with possible renewal for an additional year. No student can receive an assistantship for more than two academic years.

Graduate assistants generally provide instructional service by way of grading, teaching, and counseling students under the supervision of a professor. They may also be required to provide research services. In the second year of an assistantship, graduate students may be allowed to teach survey courses.

### **PROGRAM REQUIREMENTS**

A research seminar (HST 601) is required of all students. In addition, the candidate must take at least three other 600-level courses (one of which must be a graduate seminar [HST 610-680]). No more than two independent study courses (HST 696) may be taken with the same professor.

Up to six semester hours of work may be taken outside the History Department with the approval of the chairperson.

There is a written examination covering the minor field and an oral examination covering the major area. For details on these examinations and on the fields examined, consult the most recent "Graduate History Information Sheet" in the History Department's office.

A proficiency examination in a foreign language is required of all graduate work. The student may choose to show competence in any foreign language that is pertinent to the major program.

The Master's program may be completed under either of the two following options:

### Option A

Thirty semester hours of acceptable course work and research are required. These must include three semester hours for the research seminar (HST 601), six semester hours for the thesis (HST 699), and at least nine semester hours earned in other 600-level courses (one of which must be in a graduate seminar [HST 610-680]).

The thesis should be 80 to 160 pages in length, and stylistically it should conform to Turabian. Three years from the time it is begun are to be allowed for the completion of the thesis, though, in case of extenuating circumstances, the time allotment can be extended. Three copies of the thesis are required, and approval is by the director and two readers chosen by the director.

An oral comprehensive examination in the field of the thesis is taken concurrently with an oral examination on the major area chosen by the student. These oral examinations are taken after the student has successfully passed a written examination in his or her minor field.

### Option B

Thirty-three semester hours of acceptable course work are required, including three semester hours for the research seminar (HST 601) and at least nine semester hours earned in other 600-level courses (one of which must be a graduate seminar [HST 610-680]). The student does not write a thesis. Written and oral examinations in the major and minor areas chosen by the student are taken after the completion of all required course work.



Roberta S. Alexander.  
*Department of History.*

## COURSES OF INSTRUCTION

For the convenience of teachers and other employed persons, courses will be offered in the late afternoon and evening hours except during the third term, second session, when they will be offered primarily in the morning hours.



Courses numbered in the 500s appear also in the undergraduate Bulletin. Enrollment is open to both graduate students and advanced undergraduate students. See the Department's "Graduate History Information Sheet" for methods used to evaluate graduate work in such double-numbered courses. Only double-numbered courses given in the evening have a high proportion of graduate students. Courses numbered in the 600s are restricted to graduate students. The particular emphasis of 600-level courses will be announced each term in the "History Course Descriptions" bulletin found in the History Department's office. These courses may be repeated for graduate credit when topics and content change. HST 601 (Graduate Research Seminar) is required of all students.

HST 502. MAIN CURRENTS IN ANCIENT HISTORY: Aspects of the civilizations of ancient Near Eastern countries, Greece, and Rome selected because of their integration into Western civilization. Emphasized topics: Hebrew world view and value system, Greek democracy, Roman political and social institutions. *3 sem. hrs.*

HST 505. MEDIEVAL EUROPE: The development of European history from the 4th to the 14th century: birth of the Middle Ages; development of Christianity; Byzantine, Islamic, and Carolingian Empires; feudalism; Crusades; rise of universities; birth of national cultures. *3 sem. hrs.*

HST 507. RENAISSANCE AND REFORMATION: The development of European history from the 14th century to the middle of the 17th. Emphasis on the economic, political, social, and religious aspects of the Renaissance, Protestant Revolution, and Catholic Reformation. *3 sem. hrs.*

HST 511. ERA OF ABSOLUTISM, ENLIGHTENMENT: Intellectual and cultural developments between the later Reformation and the era of the French Revolution, with emphasis on political, economic, and social trends of the Old Regime. *3 sem. hrs.*

HST 512. FRENCH REVOLUTION AND NAPOLEON: Ideological, economic, social, and political background of the French Revolution; analysis of the revolutionary governments; the resulting international wars; the rise and fall of Napoleon. *3 sem. hrs.*

HST 515. SOVIET UNION SINCE 1917: A detailed survey and analysis of the U.S.S.R. from the Revolution of 1917 to the present. *3 sem. hrs.*

HST 516. EUROPEAN MILITARY HISTORY: Survey of warfare on the European continent from classical Greece through World War II emphasizing the military's role in society, military institutions, organizations, weapons, and campaigns. *3 sem. hrs.*

HST 517. AMERICAN MILITARY HISTORY: Survey of American military affairs from early settlement through Vietnam. Military, naval and air campaigns will be examined. *3 sem. hrs.*

HST 519. MODERN FRANCE: French history from the Bourbon Restoration to the present, emphasizing political, socio-economic, and cultural developments. *3 sem. hrs.*

- HST 520. MODERN ITALY: Italian history from 1815 to the present stressing national unification, the role of the church, rise of fascism, post-World War II, and contemporary issues and new alignments. *3 sem. hrs.*
- HST 521. MODERN GERMANY: Study of the development of the German nation from 1848 through the period of unification, Bismarck, William II Weimar, the Third Reich, the post-World War II Germanies, to the present. *3 sem. hrs.*
- HST 523. HISTORY OF LONDON: Study of the evolution of London from a small Roman town to the world's first industrial metropolis. Particular attention to social and environmental conditions and the life of the people. *3 sem. hrs.*
- HST 524. ENGLISH CONSTITUTIONAL AND LEGAL HISTORY: Study of the origins and development of common law and parliamentary government in England from the Saxon folkmoot to modern representative government. *3 sem. hrs.*
- HST 526. TUDOR-STUART ENGLAND: Economics, diplomacy, society, and culture in England from 1485 to 1714. For the Tudor period, emphasis on the development of the national state, royal absolutism, and the Reformation; for the Stuart period and Cromwellian Interregnum, the evolution of the constitutional question. *3 sem. hrs.*
- HST 528. MODERN ENGLAND — 1815 TO PRESENT: The development of England as an industrialized nation as a 19th century empire; the results of industrialization, urbanization, and loss of empire due to two world wars. *3 sem. hrs.*
- HST 538. THE MIDDLE EAST, NINETEENTH AND TWENTIETH CENTURIES: Survey of the Ottoman Empire, Iran, Egypt, and the modern states of the Middle East in international politics. *3 sem. hrs.*
- HST 540. MODERN CHINA AND JAPAN: In-depth study of the economic, political, social, cultural, and foreign relations developments of modern China and Japan from the 18th century to the present. *3 sem. hrs.*
- HST 545. KOREAN AND VIETNAM WARS: In-depth study of the two most important wars fought by the United States after World War II. Examines the wars in the context of America's changing global role and policy since 1945. *3 sem. hrs.*
- HST 550. THE FOUNDING OF AMERICA: Foundations of American nationality and democratic growth under the British colonial system, with special attention to the economic, political, social and cultural life of the era. *3 sem. hrs.*
- HST 554. THE AGE OF JEFFERSON AND JACKSON: The range of historical, cultural, social, and political trends traditionally associated with the presidencies of Jefferson and Jackson; the period from the 1790s to the 1850s. *3 sem. hrs.*
- HST 555. THE AMERICAN SOUTH: Studies the role of the South in American History. *3 sem. hrs.*
- HST 556. CIVIL WAR AND RECONSTRUCTION: Remote and immediate causes of the Civil War, especially from 1850 to 1861: problems of North and South during the war; consequences of the war, efforts to create a new Union, 1865-1877; problems resulting from those efforts. *3 sem. hrs.*

HST 557. CONTEMPORARY LATIN AMERICA: A survey of modern trends in Latin America from the late 19th century to the present with a special emphasis on United States-Latin American relationships. *3 sem. hrs.*

HST 560. U.S. LEGAL AND CONSTITUTIONAL HISTORY I: From colonial beginnings through Reconstruction. The first semester of a year's sequence that analyzes the major developments in American legal and constitutional thought and institutions. Emphasis on the evolution of the U.S. Constitution, constitutional theory and practice, and the legal profession. *3 sem. hrs.*

HST 561. U.S. LEGAL AND CONSTITUTIONAL HISTORY II: From the Gilded Age to the present. Continuation of HST 560. Prerequisite: HST 560. *3 sem. hrs.*

HST 565. HISTORY OF AMERICAN BUSINESS: Historical study of the evolution of modern capitalism from the colonial period to the present. *3 sem. hrs.*

HST 566. SCIENCE, TECHNOLOGY, AND THE MODERN CORPORATION: Historical study of the emergence of twentieth century science-based industry. *3 sem. hrs.*

HST 570. HISTORY OF THE COLD WAR: A study of the origins and development of the Cold War from the 1940s to the present. *3 sem. hrs.*

HST 572. SOUTHERN APPALACHIA: A study and appraisal of the internal and external historical forces that have shaped the Southern Appalachian region. *3 sem. hrs.*

HST 573. THE AGE OF EXCESS AND REFORM: U.S., 1877-1920: Analysis of the development of the United States as an urban-industrial nation and world power and efforts to maintain traditional political, social, and economic forms and values amidst rapid change. *3 sem. hrs.*

HST 576. BETWEEN THE WARS: Intensive study of United States History from 1919 to 1941, emphasizing Normalcy, the Depression, the evolving New Deal, and the approach to World War II. *3 sem. hrs.*

HST 577. CONTEMPORARY AMERICAN HISTORY: Diplomatic and domestic history of the United States since the beginning of World War II, including the War, wartime conference diplomacy, Russia and the Cold War, cultural trends of mid-century, social equality, and the politics of protest. *3 sem. hrs.*

HST 580. HISTORY OF AMERICAN DIPLOMACY: An analytical study of America's foreign relations from the founding of the Republic through the "imperial period" to the Cold War. *3 sem. hrs.*

HST 582. HISTORY OF MEXICO: Mexico since 1820, with emphasis on the revolution of 1910 and the struggle for democracy. Consideration of diplomatic and cultural relations between Mexico and the U.S. *3 sem. hrs.*

HST 584. CARIBBEAN SINCE 1801: The cultural, social, economic, and political history of the islands and the northern shore of South America in modern times, stressing areas that have gained independency or autonomy. *3 sem. hrs.*

- HST 590. STRATEGIES OF HISTORIANS: Seminar investigating the various intellectual processes by which historians have approached particular historical questions. A wide sampling of the works of representative historians is supplemented by analyses of their methodologies and philosophies of history. 3 sem. hrs.
- HST 600. HISTORIOGRAPHY: A study of the principal historians and the chief contributions to the development of historical writing. Some familiarity with historical method required in research papers. 3 sem. hrs.
- HST 601. GRADUATE RESEARCH SEMINAR: Investigation and synthesis of primary research materials in the student's field of concentration. The seminar is unified around methodological solutions to problems in research and writing. Required of all students. 3 sem. hrs.
- HST 610. STUDIES IN EARLY EUROPEAN HISTORY 3 sem. hrs.
- HST 620. STUDIES IN MODERN EUROPEAN HISTORY 3 sem. hrs.
- HST 631. STUDIES IN AFRICAN HISTORY 3 sem. hrs.
- HST 632. STUDIES IN MIDDLE EASTERN HISTORY 3 sem. hrs.
- HST 640. STUDIES IN ASIAN HISTORY 3 sem. hrs.
- HST 660. STUDIES IN U.S. HISTORY 3 sem. hrs.
- HST 665. STUDIES IN COMPARATIVE HISTORY 3 sem. hrs.
- HST 680. STUDIES IN LATIN AMERICAN HISTORY 3 sem. hrs.
- HST 696. SPECIAL STUDIES: Tutorial readings or research in special fields. By permission of chairperson only. 1-3 sem. hrs.
- HST 699. THESIS 3-6 sem. hrs.

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Department of  
**MATHEMATICS (MTH)**

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John W. McCloskey, Chairperson of the Department

Graduate study in the Department of Mathematics offers students the opportunity to acquire skills in areas normally pursued after the completion of the Bachelor's degree. Three different programs leading to the following degrees are available:

- **Master of Science in Mathematics**, with emphasis on various applications or pure Mathematics.
- **Master of Science in Applied Mathematical Systems**. This is an interdisciplinary program administered by the Department of Mathematics; it includes components from Computer Science and Engineering in addition to a concentration in applied Mathematics.
- **Master of Science in Teaching (MST)** with a concentration in Mathematics. See also Joint Programs under School of Education.

## **ASSISTANTSHIPS**

Financial assistance is available to qualified students in the form of graduate teaching assistantships. A graduate teaching assistant receives a stipend plus tuition remission and normally assists a professor in a basic calculus course. Most graduate assistants require two years to complete the work for a Master's degree.

## **MASTER OF SCIENCE — MATHEMATICS**

The primary goal of the program is to develop the student's knowledge of mathematical principles and methods to serve as a basis for a professional career or as a foundation for additional studies at the doctoral level.

## **ADMISSION REQUIREMENTS**

In addition to satisfying the general admission requirements of the graduate school, an applicant must have had courses or be able to demonstrate equivalent knowledge in the following areas:

MTH 302 Linear Algebra and Matrices

MTH 361 Introduction to Abstract Algebra

MTH 430 Analysis

A student with deficiencies in these areas may be admitted into the program on the condition that these deficiencies are removed during his first year of graduate study.

## **PROGRAM REQUIREMENTS**

Thirty semester hours are required. These may include (a) a maximum of six semester hours of approved 400-level mathematics courses, (b) a maximum of six semester hours of approved courses outside the department, and (c) a maximum of six semester hours for a thesis in special cases.

In this program, a student must successfully pass written examinations covering the content of three areas of study by his committee, as well as an oral examination within three months of the expected date of graduation.



John W. McCloskey.  
*Department of Mathematics.*

## **MASTER OF SCIENCE — APPLIED MATHEMATICAL SYSTEMS**

The primary objective of this program is to train students to do professional work in the applications of Mathematics. The program strives to provide both a background in Mathematics and an ability to relate Mathematics to problems encountered in applications. Students will have the opportunity to gain experience in mathematical modeling techniques and to work on a semester or year-long project.

### **ADMISSION REQUIREMENTS**

Applicants should have a Bachelor's degree in some technical area such as Engineering, Computer Science, Physics, or Mathematics and have at least a 2.8 average on a 4.0 scale. Applicants should have been ranked in the upper 50% on the GRE. Individuals not having these qualifications may be admitted on a conditional basis if there are sufficient reasons to believe that the student will succeed in the program.

Prerequisites include basic undergraduate skills in Mathematics and Computer Science. In particular a student should have taken an undergraduate calculus sequence (MTH 118, 119, 218) and a course in elementary differential equations (MTH 219). An understanding of the properties of matrices (MTH 302) and some experience with the basic procedures of statistics (MTH 367) is expected. The student should have a working knowledge of an advanced programming language such as FORTRAN or PL/I and have some experience with numerical analysis (CPS 353). Any individual deficient in some prerequisite area would be permitted to take courses to resolve this deficiency during the first year of study in the Applied Mathematical Systems program.

## PROGRAM REQUIREMENTS

The program consists of 30 hours of course work plus at least 3 hours devoted to a research project in the Mathematics Clinic (MTH 541). At least 15 hours of these courses should be taken from the offerings of the Mathematics Department. At most 6 hours of approved 400-level courses may be part of the student's program. The core areas required of all students in the program are as follows:

	<i>Semester Hours</i>
1) Real and Complex Analysis - MTH 430, 521, or 573 and MTH 431 or 525 .....	6
2) Numerical Analysis - CPS 555 or 556 .....	3
3) Differential Equations - MTH 531 or 535 .....	3
4) Linear Algebra - MTH 565 .....	3
5) Mathematical Modeling - MTH 540 .....	3
6) Mathematics Clinic (Project) - MTH 541 .....	3-6

An individualized degree program should consist of courses taken from the six core areas plus electives approved by the student's committee and the program director. These electives should satisfy the specific needs and interests of the individual student and may include courses in related areas such as Computer Science, Physics, Electrical or Mechanical Engineering and Management Science. Any core course which is already part of the student's academic background may be replaced with an elective consistent with the other requirements of the program.

There are three major options available for expansion on the core areas. These options and their course requirements are:

- I. Differential Systems. Advanced and Partial Differential Equations (MTH 531 and MTH 535) plus 6 additional hours of Mathematics courses approved by the committee.
- II. Engineering Systems. Continuum Mechanics and Theory of Elasticity (MEE 503 and MEE 533) plus 6 additional hours of Engineering courses (of a mathematical nature) approved by the committee.
- III. Computational Systems. Numerical Analysis (CPS 555 and CPS 556) plus 6 additional hours of Computer Science courses approved by the committee.

## MASTER OF SCIENCE IN TEACHING

The Master of Science degree in Teaching is offered in conjunction with and conferred by the School of Education. A graduate student in Mathematics seeking the MST degree should satisfy the same admission requirements as the Master of Science in Mathematics. The program then requires 18 hours of Mathematics courses approved by the department plus specific Education courses designed to satisfy state requirements. No written examination is required for this degree.

## COMPUTING FACILITIES

Several departmental microcomputers and the university's mainframe computer are available for student use in conjunction with projects and/or course work.

## COURSES OF INSTRUCTION

MTH 519-520. STATISTICAL INFERENCE: Sample spaces, Borel fields, random variables, distribution theory, characteristic functions, exponential families, minimax and Bayes' procedures, sufficiency, efficiency, Rao-Blackwell theorem, Neyman-Pearson lemma, uniformly most powerful tests, multi-variate normal distributions.

*3 sem. hrs. each.*

MTH 521-522. REAL VARIABLES: The topology of the real line, continuity and differentiability, Riemann and Stieltjes integrals, Lebesgue measure and Lebesgue integral. Measure and integration over abstract spaces,  $L_p$ -spaces, signed measures, Jordan-Hahn decomposition, Radon-Nikodym theorem, Riesz representation theorem, and Fourier series.

*3 sem. hrs. each.*

MTH 525. COMPLEX VARIABLES I: Analytic functions, integration on paths, the general Cauchy theorem. Singularities, residues, inverse functions and other applications of the Cauchy theory.

*3 sem. hrs.*

MTH 526. COMPLEX VARIABLES II: Infinite products, entire functions, the Riemann mapping theorem and other topics as time permits. Prerequisite: MTH 525 or equivalent.

*3 sem. hrs.*

MTH 531. ADVANCED DIFFERENTIAL EQUATIONS: Existence and uniqueness theorems, linear equations and systems, self-adjoint systems, boundary value problems and basic nonlinear techniques. Prerequisite: MTH 403 or equivalent.

*3 sem. hrs.*

MTH 535. PARTIAL DIFFERENTIAL EQUATIONS: Classification of partial differential equations; methods of solution for the wave equation, Laplace's equation, and the heat equation; applications. Prerequisite: MTH 403 or equivalent.

*3 sem. hrs.*

MTH 540. MATHEMATICAL MODELING: An introduction to the use of mathematical techniques and results in constructing and modifying models designed to describe and/or predict behavior of real world situations. Prerequisite: permission of the instructor.

*3 sem. hrs.*

MTH 541. MATHEMATICS CLINIC: Student teams will be responsible for the development or modification and testing of a mathematical model designed for a particular purpose. Faculty guidance will be provided. May be repeated once for a maximum of 6 credit hours. Prerequisite: permission of the chairperson.

*3 sem. hrs.*

MTH 543. LINEAR MODELS: Least square techniques, lack of fit and pure error, correlation, matrix methods, F test, weighted least squares, examination of residuals, multiple regression, transformations and dummy variables, model building, ridge regression, stepwise regression, multiple regression applied to analysis of variance problems. Prerequisite: MTH 368 or equivalent.

*3 sem. hrs.*



MTH 545. SPECIAL FUNCTIONS: The special functions arising from solutions of boundary value problems which are encountered in engineering and the physical sciences. Hypergeometric functions, Bessel functions, Legendre polynomials. Prerequisite: MTH 403 or equivalent. *3 sem. hrs.*

MTH 551. METHODS OF MATHEMATICAL PHYSICS: Linear transformations and matrix theory, linear integral equations, calculus of variations, eigenvalue problems. Prerequisite: MTH 403 or equivalent. *3 sem. hrs.*

MTH 555-556. NUMERICAL ANALYSIS: Quadrature methods, the numerical solution of ordinary and partial differential equations; matrices and large scale systems, modern iterative matrix methods, minimax approximation, orthogonal functions, and data smoothing. Prerequisites: CPS 144 or 150, MTH 302 or equivalent, and MTH 319. *3 sem. hrs. each.*

MTH 561. MODERN ALGEBRA I: Groups, rings, integral domains and fields; extensions of rings and fields; polynomial rings and factorization theory in integral domains; modules and ideals. *3 sem. hrs.*

MTH 562. MODERN ALGEBRA II: Finite and infinite field extensions, algebraic closure, constructible numbers and solvability by use of radicals, Galois theory, and selected advanced topics. Prerequisite: MTH 561. *3 sem. hrs.*

MTH 565. LINEAR ALGEBRA: Vector spaces, linear transformations and matrices; determinants, inner product spaces, invariant direct-sum decomposition and the Jordan canonical form. *3 sem. hrs.*

MTH 571. TOPOLOGY I: An axiomatic treatment of the concept of a topological space; bases and subbases; connectedness, compactness; continuity, homeomorphisms, separation axioms and countability axioms; convergence in topological spaces. *3 sem. hrs.*

MTH 572. TOPOLOGY II: Compactification theory, paracompactness and metrizability theorems, uniform spaces, function spaces, and other advanced topics of current interest. Prerequisite: MTH 571 or equivalent. *3 sem. hrs.*

MTH 573. FUNCTIONAL ANALYSIS: The study of linear metric spaces with emphasis on Banach and Hilbert spaces. The Hahn-Banach theorem, the Banach fixed point theorem, and their consequences. Approximations and other selected advanced topics. *3 sem. hrs.*

MTH 575. DIFFERENTIAL GEOMETRY: Vector and tensor algebra; covariant differentiation. An introduction to the classical theory of curves and surfaces treated by means of vector and tensor analysis. *3 sem. hrs.*

MTH 590. TOPICS IN MATHEMATICS: This course, given upon appropriate occasions, deals with specialized material not covered in the regular courses. May be taken more than once as topics change. Prerequisite: consent of advisor. *3 sem. hrs. each term.*

MTH 598. THESIS

*3-6 sem. hrs.*

**SPECIAL TOPICS:**

*In addition to the above courses, the department offers a sequence of one-semester-hour courses on specialized topics to service the graduate programs in the School of Engineering. These are generally offered only during the Third term.*

**MTH 581. FOURIER TRANSFORMS AND CONVOLUTION:** Fourier integral theorem; graphical interpretations; properties of Fourier transforms; application to partial differential equations. Properties of convolution; the convolution theorem, and Rayleigh's theorem; numerical and graphical convolution. Prerequisite: permission of the instructor. Third term each year. *1 sem. hr.*

**MTH 582. OPERATIONAL CALCULUS:** Generalized functions and their differentiation properties; the Dirac (Delta) -functions and its relatives; Fourier transforms and convolution of generalized functions. Prerequisite: MTH 581. Third term each year. *1 sem. hr.*

**MTH 583. TENSOR ANALYSIS:** Introduction to elementary tensors in cartesian, oblique, and generalized coordinates. Differentiation of tensor fields. The general form of gradient, divergence, and curl. Third term each year. *1 sem. hr.*

**MTH 584. NONLINEAR OSCILLATIONS:** Phase trajectories of linear and nonlinear conservative systems, nonlinear oscillatory systems, and the theory of first approximations. *1 sem. hr.*

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Department of  
**PHILOSOPHY (PHL)**

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Lawrence P. Ulrich, Chairperson of the Department

The graduate program in Philosophy leading to the Master of Arts provides the conditions for cooperative study and research enabling a student to acquire a more comprehensive knowledge and understanding of major philosophical positions in both the history of Philosophy and in contemporary philosophy and develop abilities for critical philosophical reflection.

Some of the students earning this degree have gone on to do doctoral work in Philosophy and other academic areas. Some have gone on to teach Philosophy at four-year and two-year colleges. Still others have pursued the program out of a general interest in advanced philosophical studies or in conjunction with further professional studies.

A distinctive feature of the graduate program in Philosophy is the emphasis on the continuity of philosophic inquiry from the ancient and the medieval eras to the modern and contemporary periods. Of special philosophical interest is the concept of personhood. Each graduate student initially arranges a program in consultation with the chairperson of the Philosophy Department and thereafter in consultation with an assigned academic advisor. A program of study developed in accordance with student objectives normally calls for exposure to areas beyond those of immediate interest to the student.

## **ASSISTANTSHIPS**

Graduate teaching assistantships are available for the first and second years of study. These offer tuition and fee remissions. Residence counselorships, which include stipends as well as tuition and fee remission are also available for qualified students.

### **Teaching Apprenticeship**

All graduate teaching assistants participate in a two-year apprenticeship program. In the first year, students work closely with a faculty member in the teaching of the introductory course in Philosophy and participate in monthly seminars on pedagogical problems and solutions encountered at this level. In the second year, students who successfully complete their first-year apprenticeship are eligible to teach the introductory course under supervision in both semesters. Teaching assistants sign up each semester for one hour credit in PHL 698 *Teaching Apprenticeship in Philosophy*.

## **ADMISSION REQUIREMENTS**

Students working toward the Master of Arts in Philosophy are subject to the general graduate policies and requirements of the University and the College of Arts and Sciences. In addition, the following departmental requirements hold:

a formal statement of a student's objectives in taking the Philosophy program is requested along with the application. For admission to regular status, a student must have had at least 24 semester hours in undergraduate Philosophy courses or have equivalent competence. Otherwise, the student can apply for conditional or unclassified status.

## **PROGRAM REQUIREMENTS**

Students pursuing the Master of Arts need a minimum of 30 semester hours of satisfactory graduate work. Six of these may be given for a satisfactory thesis (if the thesis option is chosen), or six may be given for satisfactory graduate or professional course work in non-philosophy subjects.

### **Readings Examination**

Students pursuing the Master of Arts degree must show competency in understanding prime source material of major philosophers in the history of Philosophy. This is evidenced by passing an oral examination based on the reading list available through the department. Authors include Plato, Aristotle and Aquinas or Anselm for the ancient and medieval period, and Descartes, Hume and Kant for the modern period.

## **PROGRAM OPTIONS**

Students working toward the Master of the Arts with a major in Philosophy have the following options available to them:

### **Thesis**

Students may choose to write a research thesis in view of their personal and professional objectives. For further information consult the chairperson.

### **Language Examination**

Students wishing to continue their philosophic studies are strongly urged to learn at least one or two foreign languages to improve their professional skills in Philosophy. Language examinations may be arranged through the chairperson of the Philosophy Department. If they are passed, the results will be noted on the student's official records; but no graduate credit is awarded for passing a language examination. Satisfactory completion is shown by the grade CR (credit) on the transcript. These credits do not reduce the 30 semester hours of course work required for the degree.

## JOINT M.A. IN PHILOSOPHY - J.D. IN LAW

The Department also affords opportunities to qualified Law students to pursue the Master of Arts Degree in Philosophy jointly with the Juris Doctor at the University of Dayton Law School. For additional information, consult the chairperson of the Philosophy Department.



Lawrence P. Ulrich.  
*Department of Philosophy.*

## COURSES OF INSTRUCTION

The department regularly reviews its curriculum and cycles its courses to help meet the needs of its students and fulfill program objectives. The curriculum consists of courses utilizing classic and contemporary primary texts in four areas to promote breadth at the Master's degree level:

- Continuity of Western Philosophic Problems**
- Diversity of Worldwide Philosophic Styles and Methods**
- Persons and Knowledge**
- Persons and Values**

A Course Registration Guide is regularly published in advance of registration with notice on course objectives, context, texts, methods of instruction, and methods of evaluation for the course. Graduate classes normally meet in the late afternoon and early evening hours during the fall and winter semesters. In the summer semester, courses may be arranged through the chairperson.

## CONTINUITY OF WESTERN PHILOSOPHIC PROBLEMS

PHL 601. PHILOSOPHY OF PLATO: A detailed analysis of some of Plato's major dialogues such as the *Meno*, *Theaetetus*, *Sophist*, *Parmenides*, and *Timaeus*.

*3 sem. hrs.*

PHL 602. PHILOSOPHY OF ARISTOTLE: A study of some of the major metaphysical, logical, epistemological, moral, and political issues discussed in Aristotle's texts.

3 sem. hrs.

PHL 603. MEDIEVAL STUDIES: A study of the writings of a particular medieval philosopher and / or a particular problem in medieval philosophy.

3 sem. hrs.

PHL 604. PHILOSOPHY OF AQUINAS: A study of the moral, social, political, legal, religious, epistemological, and metaphysical issues raised by St. Thomas in his own writings, as developed in those of his commentators, and as they bear on problems in recent philosophy.

3 sem. hrs.

PHL 605. PHILOSOPHY OF DESCARTES: A critical examination of Descartes' philosophy in his major works in view of the characteristic claims of rationalism.

3 sem. hrs.

PHL 606. PHILOSOPHY OF HUME: A detailed examination of the epistemological, metaphysical, and ethical issues discussed in Hume's major texts and by contemporary commentators.

3 sem. hrs.

PHL 607. PHILOSOPHY OF KANT: An in-depth study of either Kant's theoretical philosophy such as the problem of metaphysics as found in the *Dissertation of 1770*, the *Critique of Pure Reason*, and the *Prolegomena to Any Future Metaphysics*, or his practical philosophy such as the problem of objective ethics as found in the *Critique of Practical Reason* and in the *Foundations of the Metaphysics of Morals*.

3 sem. hrs.

PHL 608. PHILOSOPHY OF HEGEL: A study of *The Phenomenology of Spirit* as an introduction to Hegel's overall philosophy with special attention to important passages such as the master-slave dialect which has influenced subsequent philosophical development.

3 sem. hrs.

## DIVERSITY OF WORLD-WIDE PHILOSOPHIC STYLES AND METHODS

PHL 621. AMERICAN PRAGMATISM: An examination of the major philosophic writings in the American Pragmatic tradition with stress on C. S. Peirce, William James, or John Dewey.

3 sem. hrs.

PHL 622. EXISTENTIALISM: A study of existentialism as an original view of the human person and the lived world by one major existential philosopher such as Sartre or Heidegger.

3 sem. hrs.

PHL 623. MARXIST PHILOSOPHY: An examination of the central concepts developed and analyzed by Karl Marx in his major works. Also studied are some contemporary developments of Marxist thought.

3 sem. hrs.

PHL 624. PHENOMENOLOGY: A study of the origins of phenomenology in the descriptive psychology of Brentano, its development to a form of transcendental idealism by Husserl, and the attempt of Husserl to establish philosophy as a rigorous science by a phenomenological method. The bearing of phenomenology on Heidegger's and Sartre's attempts to develop a phenomenological ontology will also be explored.

3 sem. hrs.

PHL 625. PHILOSOPHY OF LANGUAGE: An in-depth examination of such topics as meaning, naming, referring, and truth with emphasis on contemporary theories and problems in the Anglo-American tradition. *3 sem. hrs.*

PHL 626. ORIENTAL PHILOSOPHY: A critical examination of Hindu and Buddhist philosophies with concentration on the ultimate reality, consciousness, and salvation. *3 sem. hrs.*

PHL 627. PROCESS PHILOSOPHY: A critical study of Alfred North Whitehead's *Process and Reality* in view of its historical setting, his other works, and the works of such process philosophers as Bergson and Hartshorne. *3 sem. hrs.*

PHL 628. RECENT JUDAIC AND CHRISTIAN PHILOSOPHY: A examination of current approaches and solutions to the perennial problems of Judaic and Christian philosophy by such thinkers as Alston, Dupre, Grisez, Mavrodes, McNerny, Noonan, Plantinga, Smart, Weiss and others. Topics include: the relation of religious belief to reason; the significance of suffering and of death; moral belief and natural law; immortality and resurrection. *3 sem. hrs.*

## PERSONS AND KNOWLEDGE

PHL 641. ADVANCED LOGIC: A study of both formalization and interpretation of such concepts as necessity, entailment, consistency, completeness, negation and a wide range of propositional attitudes. *3 sem. hrs.*

PHL 642. EPISTEMOLOGY: An examination of recent developments in the theory of knowledge in Anglo-American philosophy, with emphasis on alternative theories of cognitive justification, scepticism, and the "justified true belief analysis" of knowledge. *3 sem. hrs.*

PHL 643. METAPHYSICS: A detailed analysis of some central metaphysical concepts such as identity and personal identity, causality and necessity, freedom and determinism. Topics can vary but will include an examination of the concept of metaphysics itself. *3 sem. hrs.*

PHL 644. PHILOSOPHY OF SCIENCE: An examination of selected methodological issues in either the physical or social sciences, with emphasis on the following: explanation, confirmation, theory and concept formation, observation and the problem of objectivity. *3 sem. hrs.*

## PERSONS AND VALUES

PHL 651. PHILOSOPHY OF THE PERSON: An investigation into the nature of human beings as described in those contemporary models that do not exclusively concentrate on the cognitive abilities or features of the human being. Such issues as freedom, motivation, action, consciousness, intentionality, and interpersonal relations will be examined philosophically. *3 sem. hrs.*

PHL 652. ETHICS: A critical review and evaluation of ethical and metaethical theories since G. E. Moore. *3 sem. hrs.*

PHL 653. AESTHETICS: A critical examination of important concepts as well as problems and theories in the philosophy of art. *3 sem. hrs.*

PHL 654. **PHILOSOPHY OF RELIGION:** A study of the nature of religion and a critical evaluation of the issues related to religious language and the concept and existence of God. *3 sem. hrs.*

PHL 655. **SOCIAL AND POLITICAL PHILOSOPHY:** A critical philosophic examination of major social and political philosophies as well as the central concepts in social and political philosophy. *3 sem. hrs.*

PHL 656. **PHILOSOPHY OF LAW:** A study of legal norms and values in legal reasoning with clarification of core concepts of a legal system such as responsibility, defenses, fault, and equity and of the major styles of legal theory such as natural law and positive law. Different patterns of legal decision-making, e.g., criminal, civil, and constitutional will be stressed. *3 sem. hrs.*

PHL 657. **MORALITY, SOCIAL ETHICS, AND LAW:** A philosophic study of certain important moral, social, and religious values such as equality, order, liberty, life, property, rights, justice, respect, and charity especially in the context of legislative, judicial, and interinstitutional decision-making. *3 sem. hrs.*

### **SPECIAL COURSES**

PHL 690. **SEMINAR:** Topics, authors, and/or problems in philosophy selected by the professor. *3 sem. hrs.*

PHL 695. **DIRECTED STUDIES:** To augment the graduate student's previous training or to allow advanced study on a particular problem, philosopher, or historical era. Arrange through the chairperson. *3 sem. hrs.*

PHL 698. **TEACHING APPRENTICESHIP IN PHILOSOPHY:** Participation each term as a teaching apprentice to faculty and in the direct teaching of lower-level undergraduate philosophy courses. Required of and open only to graduate philosophy assistants. *1 sem. hr.*

PHL. 699. **THESIS** *3-6 sem hrs.*



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Department of  
**PHYSICS (PHY)**

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J. Michael O'Hare, Chairperson of the Department

The Master of Science program in the Department of Physics seeks to provide the student with the thorough understanding and appreciation of the discipline. Advanced study in Physics may be used to develop competence for involvement in research and development programs in industry and government, to enrich the background for teaching Physics on the junior college or secondary school level, or to prepare for advanced degree (Ph.D.) academic programs.

### **ADMISSION REQUIREMENTS**

Applicants will be admitted to advanced study in Physics if the graduate admission committee of the department determines that they are qualified for the degree program. A series of examinations covering basic Physics subjects on the intermediate level are available to candidates entering the program. These assist the student and the Department to choose the courses appropriate to the student's needs. The applicant will be required to make up any deficiencies which the department deems necessary to attain the level of the graduate course. In general, a properly prepared student should have the following background:

1. Physics courses which are approximately the equivalent of the following University of Dayton courses:  
PHY 303 Intermediate Mechanics  
PHY 408 Intermediate Electricity and Magnetism  
PHY 301 Thermodynamics  
PHY 390 Introduction to Quantum Mechanics
2. Mathematics through differential equations and preferably advanced calculus.
3. Additional upper-level undergraduate Physics courses relating to the area of the student's interest, such as electronics, optics, solid state, or atomic and nuclear physics.

### **ASSISTANTSHIPS**

A limited number of graduate assistantships are available. These generally carry a stipend and tuition remission for the course required for the degree. Recipients are expected to complete the requirements for the Master's degree in two years. Students in the Electro-Optical Science may also apply for assistantships in the Department of Physics. Detailed information and forms for making application may be obtained from the chairperson or director of the proposed program.

## PROGRAM REQUIREMENTS

The formal requirement for the degree is 30 semester hours of course work properly distributed. Eighteen of these must be graduate Physics courses. No foreign language competency is necessary for the Master of Science with a major in Physics. Each program, tailored to the student's own interest and career plans, is determined after consultation between the student and the advisory committee in accord with the following guidelines:

- A core sequence is required of all degree students:

	<i>Semester Hours</i>
PHY 511 Classical Mechanics .....	3
PHY 515 Statistical Mechanics .....	3
PHY 523 Electromagnetic Theory I .....	3
PHY 525 Quantum Mechanics I .....	3

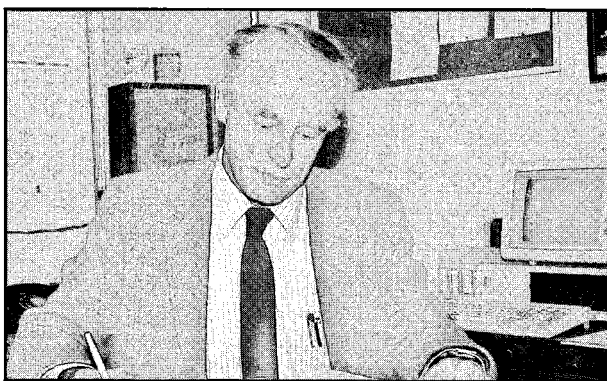
- An area of concentration is accomplished through special topic courses and involvement in the current research activities of the faculty and staff of the Department of Physics. These activities include experimental and theoretical solid state physics with emphasis on optical, electrical, and magnetic properties of material, laser interactions with material, semiconductors, optical spectroscopy, surface phenomena, resonance studies, and environmental applications of physics.

- By the end of the first term, students are expected to be sufficiently familiar with computer programming to solve basic problems in physics using the computer. This requirement can be fulfilled on an *ad hoc* basis or by taking a formal programming course.

- Courses in such related disciplines as Mathematics, Chemistry, and Engineering may be chosen up to a maximum of 12 semester hours with the approval of the chairperson of the department.

- A maximum of six semester hours of graduate credit may be granted for advanced undergraduate courses (300-400 level) with the approval of the graduate committee of the department.

**NOTE:** Courses for which undergraduate credit has been allowed may not be repeated for graduate credit.



J. Michael O'Hare  
Department of Physics

- The Master's thesis is recommended for those students who have no comparable experience. An oral examination before a committee designated by the chairperson of the department must be passed before credit can be given. A maximum of six semester hours toward a degree can be given for thesis work.

## COURSES OF INSTRUCTION

PHY 511. CLASSICAL MECHANICS: Analytical dynamics; variational techniques, Hamilton's Principle: the Lagrangian, the Hamiltonian, Hamilton-Jacobi and Poisson Bracket formulations of mechanics; Galilean and Lorentz invariance; and relativistic dynamics. Prerequisite: PHY 303-403 or equivalent. *3 sem. hrs.*

PHY 515. STATISTICAL MECHANICS: Basic assumptions, statistics of independent particles, the Maxwell Boltzman distribution, Fermi-Dirac, Bose-Einstein statistics, applications of distribution laws. *3 sem. hrs.*

PHY 518. Topics can include calculation techniques in modern physics, complex variable theory, dispersion relations, linear vector spaces, operators, matrix mechanics, eigenvalue equations. Prerequisites: MTH 403-404 or consent of instructor. *3 sem. hrs.*

PHY 519. THEORETICAL PHYSICS II: Topics can include orthogonal functions, Dirac delta function. Laplace's equation, Poisson's equation, D'Alembert's equation, transformation theorems. Green's function, group theory. Prerequisite: PHY 525 or consent of instructor. *3 sem. hrs.*

PHY 520. ADVANCED SOLID STATE PHYSICS: Crystal structure, thermal properties of solids; insulators; band theory of solids; semi-conductors; luminescence. Prerequisite: PHY 525 or permission of instructor. *3 sem. hrs.*

PHY 523. ADVANCED ELECTRICITY AND MAGNETISM I: The boundary value problems of electrostatics and magnetostatics in material media, conservation laws, existence and nature of electromagnetic radiation derived from Maxwell's equations. *3 sem. hrs.*

PHY 524. ADVANCED ELECTRICITY AND MAGNETISM II: Radiating systems, interference and diffraction; wave guides and resonant cavities; Cherenkov radiation, bremsstrahlung, and multipole fields, special applications of electromagnetic theory. Prerequisite: PHY 523. *3 sem. hrs.*

PHY 525. QUANTUM MECHANICS I: The physical basis of quantum mechanics, wave packets, free particle motion: Schrodinger's equation applied to potential problems; harmonic oscillator and the hydrogen atom; three-dimensional extrapolation and scattering. *3 sem. hrs.*

PHY 526. QUANTUM MECHANICS II: Linear vector spaces and spin; time dependent and time independent perturbation theory; development of the formal theory of scattering; discussion of the importance of symmetries and rotations. Prerequisite: PHY 525. *3 sem. hrs.*

PHY 540. INTRODUCTION TO POLYMER SCIENCE: An introduction to polymers. A largely nonmathematical survey of the field. Prerequisites: college chemistry and calculus. 3 sem. hrs.

PHY 541. PHYSICAL PROPERTIES OF POLYMERS: An intensive discussion of the interrelations between molecular and gross physical properties of polymers. Prerequisites: PHY 540 or equivalent, background in differential equations. 3 sem. hrs.

PHY 590. GRADUATE THESIS: A research problem in a selected topics resulting in a written thesis. 0-6 sem. hrs.

PHY 595. GRADUATE SEMINAR: Weekly seminars presented by graduate students, faculty, and guest lecturers on current topics. No credit.

PHY 599. SPECIAL PROBLEMS IN (NAMED AREA): Lecture, seminar, laboratory, or library work in designated areas of topical interest in Physics. May be taken more than once. 1-3 sem. hrs.

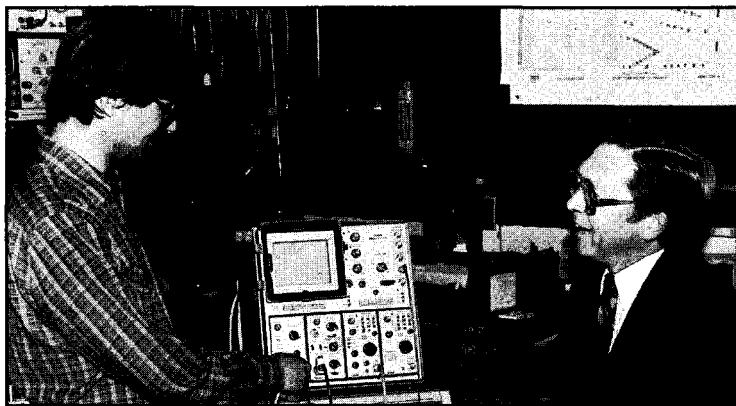
## ELECTRO-OPTICS PROGRAM

Certain courses in the Electro-Optics programs may be taken for graduate Physics credit. These are:

PHY 599/EOP501. GEOMETRIC OPTICS: Wavefronts and rays; Fermat's principle; Gaussian optics and axially systems; aperture stops; pupils and fields lenses; Lagrange invariant; angular and visual magnification; optical systems; plane mirrors and prisms; aberration theory; introduction to computer ray tracing.

PHY 599/EOP502. OPTICAL RADIATION AND MATTER: Maxwell's equations; electromagnetic waves; interaction of radiation with atomic electrons; molecular and lattice vibration; study of phenomena related to the interaction of optical radiation with matter; polarization; crystal optics; nonlinear dielectric effects.

PHY 510/EOP503. PRINCIPLES OF MODERN OPTICS I: Wave theory; electro magnetic theory; mathematical techniques; Fresnel and Fraunhofer diffraction; coherence; and interference.



James R. Schneider  
Department of Physics.

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## Department of POLITICAL SCIENCE (POL)

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Gerald E. Kerns, Chairperson of the Department

The Department of Political Science offers three graduate programs; each one is designed to accomplish a particular objective.

- **Master of Arts with a major in Political Science** is primarily an academic degree leading toward increased knowledge of the political process, teaching, or advanced study. For this preparation, the department stresses thorough knowledge of a few of the subareas of political science rather than attempting a superficial acquaintance with all of them.
- **Master of Arts with a major in Political Science and a specific concentration in International Affairs is a special program.** This special program is intended to be a general degree in international affairs for people with interest in government, military service, international business, or for personal satisfaction.
- **Master of Arts in Public Administration** is a professional degree which is designed to prepare students for administrative careers in contemporary society.

### ASSISTANTSHIPS

The department offers two graduate assistantships each year. The graduate assistants perform research tasks for the faculty. Each assistant receives full tuition remission plus stipend. An assistantship once granted is renewable for a second year.

## MASTER OF ARTS POLITICAL SCIENCE PROGRAM

### ADMISSION REQUIREMENTS

For admission to the program leading to the Master of Arts, the department requires the following:

1. Baccalaureate degree from an accredited college or university.
2. Undergraduate concentration in one of the fields of the social sciences.
3. Sufficient academic preparation and experiences that would indicate student's ability to pursue graduate studies.
4. Candidates who have earned their degrees in a pass-fail grading system must supply the department with their scores in the general section of the GRE.

**NOTE:** *If the candidate's concentration has been outside of the social science areas, if deficiencies in academic records are indicated, the department may admit the student **conditionally** or require additional work. Courses considered prerequisite by the department may not later be included within the candidate's graduate program. In all cases, the standard university requirements of 2.5 will apply.*

## DEGREE REQUIREMENTS

After consultation with the graduate advisor and in accordance with the student's long range academic objectives, a candidate for the Master of Arts must complete the following requirements:

1. Thirty-six semester hours consisting of 18 semester hours of required courses and 18 semester hours of electives:

### *Semester Hours*

#### **Required Courses** (18 semester hours)

POL 501 Scope and Methods of Political Science .....	3
POL 502 Colloquium in American Politics .....	3
POL 503 Colloquium in Comparative Politics .....	3
POL 514 Development of Political Theory .....	3
POL 590 Research Seminar in Political Science .....	3
POL 597 Research Project .....	3

#### **Electives** (12 Semester Hours)

These must be selected from elective graduate courses in political science, 400-level undergraduate courses in Political Science, and/or graduate courses in cognate fields.

2. Oral defense of the research paper before the students and the faculty of the department at the completion of 30 semester hours of course work.
3. Students must achieve a minimum B (3.0) cumulative average in all courses. Their progress will be evaluated at the completion of 12 semester hours of credit. They must have a minimum of B average to obtain the degree.

## CURRICULUM

### **General Courses**

- POL 502 Colloquium in American Politics
- POL 521 Intergovernmental Relations
- POL 545 Urban Politics and Policy
- POL 546 Seminar: Public Opinion and Political Behavior
- POL 557 Seminar: State Government and Politics
- POL 579 Selected Topics in Public Policy

### **American Political Processes**

- POL 501 Scope and Methods of Political Science
- POL 567 Independent Study in Political Science
- POL 590 Research Seminar in Political Science
- POL 597 Research Project

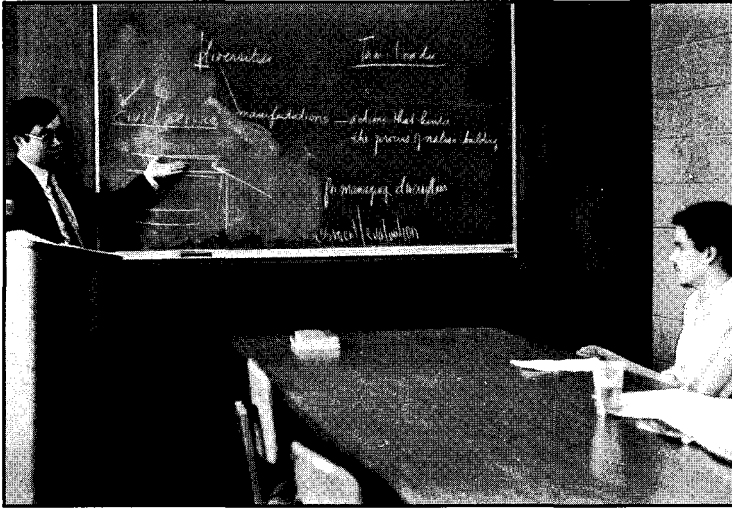
### **Comparative Politics**

- POL 503 Colloquium in Comparative Politics
- POL 520 Seminar in Soviet Politics
- POL 522 Seminar in Asian Politics
- POL 529 Seminar in European Politics

POL 569 Seminar in Political Theory: Theory and Practice of Communism  
 POL 583 Comparative Public Policy

***Political Theory and Public Law***

POL 514 Development of Political Theory  
 POL 569 Seminar: Selected Topics in Political Theory  
 POL 571 Seminar: Judicial and Constitutional Politics



Antonio E. Lapitan.  
*Department of Political Science.*

## **MASTER OF ARTS CONCENTRATION IN INTERNATIONAL AFFAIRS**

### **DEGREE REQUIREMENTS**

Thirty-six semester hours of course work including:

POL 503 Colloquium in Comparative Politics  
 POL 515 International Relations  
 ECO 510 International Economics  
 POL 590 Research Seminar

While there is no formal language requirement for the degree, it should be recognized that proficiency in at least one modern foreign language is highly desirable for anyone in international affairs.

Candidates should structure their programs around courses in the two major areas offered in consultation with their faculty advisor, and must satisfactorily complete a research seminar in one of those areas. The major areas offered for the degree are:

- **International Relations**
- **Comparative Politics and Modernization**

Students *must* achieve a minimum of B (3.0) cumulative average in all courses. At the completion of 12 semester hours of credit the progress of the student will be evaluated by a committee of three faculty. It is *incumbent* upon the student after the completion of 12 semester hours of credit to *initiate* the petition for review. Petition is to be made to the chairperson of the MAIA Committee.

## **Curriculum**

### ***International Relations***

POL 515 International Relations  
 POL 516 Comparative Foreign Policy Analysis  
 POL 517 American Foreign Policy  
 POL 518 United States Security Policy  
 POL 406 International Law and Organization  
 HST 580 American Diplomatic History  
 HST 549 The Cold War  
 ECO 510 International Economics  
 POL 576 Independent Study  
 POL 590 Research Seminar

### ***Comparative Politics and Modernization***

POL 503 Colloquium in Comparative Politics  
 POL 509 Soviet Foreign Policy  
 POL 520 Soviet Politics  
 POL 522 Seminar in Asian Politics  
 POL 523 Latin American Politics  
 POL 525 Politics in the Middle East  
 POL 529 Seminar in European Politics  
 POL 554 Development Administration  
 POL 457 Political Change in the Third World  
 POL 569 Seminar in Political Theory and Practice of Communism  
 POL 583 Comparative Public Policy  
 POL 567 Independent Study  
 POL 590 Research Seminar

## **MASTER OF PUBLIC ADMINISTRATION**

Peter B. Nelson, Director of the Program

### **ADMISSION REQUIREMENTS**

1. Baccalaureate degree from an accredited college or university.
2. Cumulative grade point average of 2.7 in a 4.0 grading system, or a combined score of at least 1000 on the verbal and quantitative sections of the Graduate Record Examination. Those with lower averages and GRE scores may be



- considered for acceptance on a conditional basis. In such cases particular attention will be given to the information requested in admissions requirements 4 and 5.
3. Students applying from schools operating on a pass-fail grading system are required to submit scores from the verbal and quantitative sections of the GRE. Other applicants are encouraged to submit GRE scores as additional evidence of their competence to do graduate work.
  4. The following will also be considered:
    - A. At least three letters of recommendation from individuals in a position to judge the applicant's capacity for graduate work. Persons who have graduated from college within the past five years are requested to submit at least one letter from a former professor.
    - B. The applicant's work experience and statement of career objectives.
    - C. The applicant's undergraduate academic preparation and achievements in disciplines related to the public service.
  5. An applicant may be required to submit additional information when the departmental graduate committee feels that such information is necessary.

## DEGREE REQUIREMENTS

- I. To receive the degree of Master of Public Administration, the student must satisfactorily complete thirty-six semester hours of course work with a cumulative grade point average of 3.0 or better.
  - A. The thirty-six hours of course work must include POL 510, POL 581, POL 511, and at least one course under the heading Environment of Public Administration. The required courses may be waived for students with appropriate academic backgrounds.
  - B. The remainder of the thirty-six hours must consist of courses selected from the M.P.A. curriculum. Exceptions will be made by the program director in case the student's interests and career objectives make other courses particularly useful. No more than six semester hours of courses outside the M.P.A. curriculum may be taken at the 400 level.
- II. Within the general requirements in A and B above, the student may select one of three options:
  - A. The student may take 30 semester hours of academic courses and 6 hours of POL 595, Internship. A student taking this option is encouraged to begin the internship only after completing 18 credit hours of other courses and successfully passing the certifying examination.
  - B. The student under certain conditions may take 30 hours of academic course work and 6 hours of POL 596, Public Service Project. This option is available only to students employed in administrative positions in public or quasi-public agencies other than internship positions. Students are encouraged to enroll in POL 596 only after completing 18 hours of other courses, and successfully passing the Certifying Examination.

C. The student may take the full 36 semester hours in regular academic courses.

Students selecting this option are encouraged to complete at least three hours of POL 578, Independent Study in Public Administration.

III. Upon the completion of 18 semester hours of course work, including credit hours transferred from other schools or programs, each student must apply to the director of the M.P.A. Program for a written certifying examination.

The examination committee will explore each student's (1) performance in the program to date, (2) strengths and weaknesses in mastering the discipline of Public Administration, and (3) potential for a career in the public service.

During the course of the examination, the following characteristics of the student will be evaluated specifically:

A. Knowledge of factual matter important for a career in public administration

B. Skills in interpersonal relationships, problem analysis, and oral and written communication.

C. Ability to deal with key concepts and to interrelate subject matters.

The examination committee will consist of faculty members from the University of Dayton. The committee will take one of three actions:

A. Certify the student for further course work without restriction.

B. Certify the student for further coursework with restrictions.

C. Require that the student be re-examined. No more than one re-examination per student may be given. Failure to pass the re-examination will result in removal from the program.

## **Curriculum**

### ***Administration and Management***

POL 510 Public Administration

POL 535 Fiscal Administration

POL 576 Public Personnel Administration

POL 577 Public Sector Labor Management Relations

POL 595 Government Internship

POL 596 Public Service Project

POL 544 Managing for "Smaller"

### ***Analytic Tools and Policy Analysis***

POL 511 Quantitative Methods in Public Administration I

POL 512 Quantitative Methods in Public Administration II

POL 579 Selected Topics in Public Policy

POL 584 Introduction to Public Policy

POL 552 Government Planning

### ***Internal/Group/and Organizational Dynamics of Public Administration***

POL 581 Organization Theory

POL 505 Politics of Bureaucratic Regulation

COM 517 Organizational Communications

COM 537 Conflict Resolution through Communication

***Environment of Public Administration***

POL 545 Urban Politics and Policy

POL 555 Urban Administration

POL 572 Administrative Law

POL 521 Intergovernmental Relations

POL 583 Comparative Public Policy

POL 554 Comparative Development Administration

***Other Courses***

POL 540 Seminar in Public Administration

POL 578 Independent Study in Public Administration

**COURSES OF INSTRUCTION**

Graduate students in Political Science and Public Administration may take no more than two 400-level courses for graduate credit, with the permission of the chairperson of the appropriate graduate committee. Undergraduate courses specified as a condition for admittance to the graduate program do not count as graduate credit.

POL 501. SCOPE AND METHODS OF POLITICAL SCIENCE: Analysis of theoretical approaches to the study of politics and the techniques and methodologies currently employed in political science research. 3 sem. hrs.

POL 502. COLLOQUIUM IN AMERICAN POLITICS: An examination of the various theoretical and empirical approaches developed in the study of American politics. Special consideration will be given to works considered critical in the formation of a scientific study of American political life. 3 sem. hrs.

POL 503. COLLOQUIUM IN COMPARATIVE POLITICS: An examination of various theoretical and empirical approaches in the study of comparative politics and political development with special emphasis on cross-national comparison and the use of aggregate data in comparative analysis. 3 sem. hrs.

POL 504. LEGISLATIVE POLITICS: An examination of the actors, interactions and processes which shape public policy in the legislative arena. This course may be jointly offered with POL 414. In such cases, the graduate requirements will be distinct from undergraduate requirements. 3 sem. hrs.

POL 505. THE POLITICS OF BUREAUCRACY AND REGULATION: Examination of the nature and meaning of bureaucracy in contemporary American society and the devices for its evaluation and control. This course may be jointly offered with POL 413. In such cases, the graduate requirements will be distinct from undergraduate requirements. 3 sem. hrs.

POL 509. SOVIET FOREIGN POLICY: This course is designed to provide the student with a broad introduction to Soviet views on East-West relations. The course will deal with cooperative and competitive aspects of those relations in three areas—political, economic, and military, and the problem and opportunities they present for Soviet foreign security and policy. 3 sem. hrs.

POL 510. PUBLIC ADMINISTRATION: Study of the administrative organization, systems, processes, and methods as applied to governmental programs and operations, with a comparison of structural and behavioral approaches. 3 sem. hrs.

POL 511. QUANTITATIVE METHODS IN PUBLIC ADMINISTRATION I: Introduction to research techniques involving quantitative methods and analysis applicable to the formation and implementation of public programs. Emphasis on basic statistics and research methodology. Aimed at an understanding of appropriate application and interpretation of quantitative methods, rather than competence in practical or scholarly use. 3 sem. hrs.

POL 512. QUANTITATIVE METHODS IN PUBLIC ADMINISTRATION II: Continuation of POL 511 with emphasis on application of analytic techniques to specific public management problems. Cost-benefit analysis and public sector applications of operations research will be emphasized. 3 sem. hrs.

POL 514. DEVELOPMENT OF POLITICAL THEORY: Study of the Western political heritage as fashioned by the great Western political thinkers from Plato through Marx and Lenin. 3 sem. hrs.

POL 515. INTERNATIONAL RELATIONS: Analysis of selected theories and approaches in the study of international relations, with particular emphasis on the nature of power and the sources of transformation in the contemporary international system. 3 sem. hrs.

POL 516. COMPARATIVE FOREIGN POLICY ANALYSIS: Systematic analysis of the external factors shaping the foreign policies of selected states and of current models of foreign policy decision-making. Special emphasis will be placed on comparison of Soviet and American policy. 3 sem. hrs.

POL 517. AMERICAN FOREIGN POLICY: Study and analysis of the factors, both internal and external, which have shaped American foreign policy in the post World War II period, the major instruments of policy and their effectiveness, and the impact of changes since 1970. 3 sem. hrs.

POL 518. UNITED STATES NATIONAL SECURITY POLICY: Analysis of United States global security policies and defense strategies with attention to continuities and changes in doctrines, commitments, perceptions of the Soviet threat, and the impact of technology. 3 sem. hrs.

POL 520. SOVIET POLITICS: The nature of the Soviet state, its economic system, the role of the Communist party and the influence of Marxist-Leninist ideology will be examined along with contemporary problems and political dynamics. 3 sem. hrs.

POL 521. INTERGOVERNMENTAL RELATIONS: Study of the interaction process of various levels of government in the United States, including problems of federalism, inter-state cooperation, and federal-urban relations. 3 sem. hrs.

POL 522. SEMINAR IN ASIAN POLITICS: Systematic analysis of the political structure and processes of two or more countries in the Far East and two or more in Southeast Asia, with emphasis on their capabilities to maintain political stability. May be repeated once when focus changes. 3 sem. hrs.

- POL 523. LATIN AMERICAN POLITICS: Systematic analysis of the political, economic, and social structures and forces shaping politics in selected Latin American countries. *3 sem. hrs.*
- POL 525. POLITICS IN THE MIDDLE EAST: Analysis of major political and social forces, such as religion and nationalism, that shape the contemporary Middle Eastern states. *3 sem. hrs.*
- POL 529. SEMINAR IN EUROPEAN POLITICS: Systematic analysis of the political structures and processes of two or more countries in Western Europe and two or more in the Soviet Union and Eastern Europe, with emphasis on selected contemporary political, economic, and social problems. May be repeated once when focus changes. *3 sem. hrs.*
- POL 535. FISCAL ADMINISTRATION: Study of governmental expenditures and revenues, budgetary and financial reporting, fiscal policy, and other areas of fiscal management, with emphasis on current practices and problems. *3 sem. hrs.*
- POL 540. SEMINAR IN PUBLIC ADMINISTRATION: Seminar on selected problems in public administration. May be repeated once when topic changes. *3 sem. hrs.*
- POL 544. MANAGING FOR "SMALLER": An examination of the concept of public management under conditions of declining resources. Analysis of the root causes of urban decline and the problems associated with it. Exploration of non-traditional approaches to local governance in declining areas. *3 sem. hrs.*
- POL 545. URBAN POLITICS AND POLICY: A study of the political processes and governmental structures in urban areas with emphasis on the relations among governmental units, community power structure, and the formulation and execution of public policy. *3 sem. hrs.*
- POL 546. SEMINAR PUBLIC OPINION AND POLITICAL BEHAVIOR: Study of conventional and unconventional modes of political behavior; attitudes, opinions and beliefs which are useful in explaining political behavior. Emphasis on the political socialization of children and post-adolescents and on political information processing. *3 sem. hrs.*
- POL 552. GOVERNMENT PLANNING: Consideration of the planning function in the administrative process and the role of planning agencies in decision making and problem solving. Evaluation of trends and changing characteristics of planning in the United States. *3 sem. hrs.*
- POL 554. COMPARATIVE DEVELOPMENT ADMINISTRATION: Analysis of the development functions of public administration in selected countries. Focus will be on the administration of development programs as well as on the development of administrative capabilities in the Third World countries. *3 sem. hrs.*
- POL 555. URBAN ADMINISTRATION: Study of the structures, processes, programs, policies, and problems of administrative agencies of local government, with particular emphasis on metropolitan areas. *3 sem. hrs.*

**POL 557. SEMINAR: STATE GOVERNMENT AND POLITICS:** A comparative study of the political institutions and processes of state governments in the United States, with emphasis on current issues. *3 sem. hrs.*

**POL 567. INDEPENDENT STUDY IN POLITICAL SCIENCE:** Reading and research on special topics in political science under the direction of a faculty member. Research paper. May be repeated once when topic changes. *3 sem. hrs.*

**POL 569. SEMINAR: SELECTED TOPICS IN POLITICAL THEORY:** An examination of selected issues or writers in political thought. Example of topics: political concepts of authority, freedom, contemporary political theorists, modern ideologies. May be repeated once when the content changes. *3 sem. hrs.*

**POL 571. SEMINAR: JUDICIAL AND CONSTITUTIONAL POLITICS:** Special topics, including aspects of the judicial process such as the actors within it (lawyers, juries, judges, prosecutors, police, etc.) and judicial policy making, its substance, the underlying philosophy, and the values attitudes, prejudices, and behavior of its makers. May be repeated once when content changes. *3 sem. hrs.*

**POL 572. ADMINISTRATIVE LAW:** Study of the judicial functions and activities of federal agencies; formal and informal processes in administrative hearings; basic principles of administrative law; judicial interpretation; the question of increased judicialization of the administrative process. *3 sem. hrs.*

**POL 576. PUBLIC PERSONNEL ADMINISTRATION:** Survey of the development of personnel administration in the federal government and some state and municipal governments, focusing on such questions as selection, training, and labor relations. *3 sem. hrs.*

**POL 577. PUBLIC SECTOR LABOR MANAGEMENT RELATIONS:** This course is designed to focus on the labor relations function as it is found in the public sector. Topics to be covered include the rise of government employee labor unions, collective bargaining and policy impacts of public employee unions. *3 sem. hrs.*

**POL 578. INDEPENDENT STUDY IN PUBLIC ADMINISTRATION:** Intensive independent research under the direction of a faculty member. Research paper. May be repeated once when topic changes. *1-3 sem. hrs.*

**POL 579. SELECTED TOPICS IN PUBLIC POLICY:** Policy process, policy outcomes and policy impact in an area or areas of public policy varying among such topics as transportation, education, welfare, national defense, science, civil rights, and urban and community development. May be repeated once when topic changes. *3 sem. hrs.*

**POL 581. ORGANIZATION THEORY:** Survey of current literature and research on the theory of complex organizations. Rationality in decision-making; problems of authority; behavioral, political, and technical influences on organizations. *3 sem. hrs.*

**POL 583. COMPARATIVE PUBLIC POLICY:** Study of the applicability and limitations of current approaches in public policy analysis for cross-national and/or cross-cultural comparison. Emphasis on the analysis of how such public policy issues as defense, welfare, education, and economic development are determined by select political systems in the developed and developing world. *3 sem. hrs.*

**POL 584. INTRODUCTION TO PUBLIC POLICY:** This course is designed to introduce students to the study of public policy and public policymaking. The central concerns of the course involve competing models of the policy process, the policymaking process in the United States, the interplay between the political and economic systems in policymaking, and the processes of policy analysis and policy evaluation.

*3 sem. hrs.*

**POL 590. RESEARCH SEMINAR IN POLITICAL SCIENCE:** Directed research on a selected topic in American or comparative politics which requires the application of a specific approach, generation and analysis of data which result in a major research paper.

*3 sem. hrs.*

**POL 595. GOVERNMENT INTERNSHIP:** Assignment to appropriate government agencies or units for the purpose of gaining wide experience with the administrative system through a rotating program of work experiences.

*3-6 sem. hrs.*

**POL 596. PUBLIC SERVICE PROJECT:** For students currently employed in administrative positions in public or quasi-public agencies. Completion of a written project relating theories and information from the field of public administration to the student's work experience and career objectives.

*3-6 sem. hrs.*

**POL 597. RESEARCH PROJECT:** Required of all M.A. students. Completion of the research paper begun in POL 590; evaluation of the substance, methodology, and findings of the paper by the professor; and presentation of the paper to students and faculty of the Political Science department.

*3 sem. hrs.*

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Department of  
**PSYCHOLOGY (PSY)**

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Kenneth J. Kuntz, Chairperson of the Department

Donald J. Polzella, Director of Graduate Studies and Research in Psychology

The Department of Psychology offers five Master of Arts programs:

- **Clinical Psychology**
- **Developmental Psychology**
- **Experimental-Human Factors Psychology**
- **General Psychology**
- **Social Psychology**

In all programs emphasis is on integrating theory and literature with appropriate applied experience and on competence in the development of relevant and original research. This is the product of individual supervision and a low student-to-faculty ratio. The aim of the department is to prepare the student for further graduate work at the Ph.D. level and/or for functioning at the M.A. level of specialization in an applied/community setting or through teaching and research.

To further specific research interests graduate students are encouraged to work with faculty members on a one to one basis. Academic advisors and the chairperson of the department will direct students to faculty members who share their specific interests and areas of specialization.

Graduate teaching and research assistantships are available on a competitive basis and include a stipend as well as tuition and fee remission. The Department of Psychology also offers a limited number of traineeships to students in the Clinical Psychology Program. The traineeship placements are at local mental health agencies and vary in number and stipend from year to year depending upon the budgets and needs of the agencies participating in the traineeship program.

## **ADMISSION REQUIREMENTS AND PROCEDURE**

Under normal circumstances a grade point average of 3.0 or better (based on a 4.0 system) is required for admission to the graduate program. In addition, a minimum of 3.0 average in undergraduate course work in Psychology is required.

It is expected that the applicant will have completed the requirement of a four-year undergraduate college, usually in liberal arts or science, including a minimum of 15 semester hours in Psychology. These Psychology courses must include a course in introductory statistics, a course in experimental psychology or research design or the equivalent, and six semester hours in upper-level Psychology courses. For students in Clinical Psychology, the upper-level courses should include Abnormal Psychology and Theories of Personality.

Students without Psychology preparation may be admitted to the Experimental-Human Factors Psychology program on a conditional basis. Regular admission will follow contingent upon the completion of under-



graduate work specified by the admissions committee. Students are urged to contact the Director of Graduate Studies and Research in Psychology if they are considering this option.

Acceptance within a specific program is competitive, based upon the strength of the student's application and the number of positions available.

## Applications

Application forms may be obtained from the Office for Graduate Studies at the University of Dayton to which all correspondence concerning the completion of the application should be directed. For the Fall term the application deadline is March 15th. Applications after this deadline will be accepted but will not be reviewed in the original screening of applicants. For information about application for the Spring and Summer terms contact the Director of Graduate Studies and Research in Psychology.

Inquiries concerning the Master's program, its curriculum, and the Department of Psychology should be directed to Donald J. Polzella, Director of Graduate Studies and Research in Psychology, Department of Psychology, University of Dayton, Dayton, Ohio 45469. It is the applicant's responsibility to supply the following information necessary for a completed application:

1. The completed application form.
2. Official transcripts of all undergraduate schooling (and graduate schooling where appropriate).
3. At least three letters of recommendation (at least two of these should be from professors familiar with the student's academic work).
4. Scores on the Graduate Record Examination (both aptitude and Psychology scores are required).
5. The Miller's Analogies Test score (MAT) is optional.
6. A summary of undergraduate grade point averages.

Under normal circumstances the Director of Graduate Studies and Research in Psychology may waive one or more of the application requirements.

## Student Status

Each student admitted to the graduate program is placed in one of the following categories:

1. **Regular standing:** students meeting the entrance requirements of the department.
2. **Conditional standing:** students considered probationary pending the successful completion of 9 to 15 semester hours of graduate work or other requirements as determined by the department.
3. **Unclassified standing:** students enrolled in graduate courses of the department who are not working toward a degree. Normally a student is permitted to enroll for a limited number of semester hours of credit under this status.

## PROGRAM REQUIREMENTS

All students enrolled in any of the five programs leading to the Master of Arts with a major in Psychology are subject to the following general requirements of the Department of Psychology. Full time students normally complete program requirements in four semesters:

1. The number of semester hours and required courses as specified by the individual programs described below.
2. Demonstration of satisfactory progress toward the degree which includes the requirements that students maintain a minimum average of B (3.00) in course work. Students who fail to meet this requirement are either placed on academic probation or dropped from the program.
3. Students are permitted no more than six semester hours with grades of C or lower. Students who fail to meet this requirement are dismissed from the program.
4. No more than six semester hours of 400-level courses may apply toward the Master's degree, and normally no more than six semester hours of graduate work approved by the chairperson of the department may be transferred from other institutions.
5. Attendance is required at regularly scheduled extra-course seminars on selected issues in Psychology and at occasional specialized programs.
6. Thesis must deal with an approved research problem, incorporating an appropriate review of theory and literature, and demonstrating competence in the application of research methodology.
7. Students are expected to conduct themselves in a professional and ethical manner in accordance with generally accepted standards for psychologists.
8. It is the student's responsibility to know and to meet the requirements of the University and of the graduate program.

### Breadth Requirement

All students in the graduate program of the Department of Psychology are required to fulfill a breadth requirement by successfully completing courses outside their major area of concentration. This requirement is designed to give the student a broad view of the discipline of Psychology and is required instead of a comprehensive examination. The breadth requirement is stated under the detailed requirements for each of the department's five graduate programs. The following courses normally fulfill the breadth requirements for each area. Exceptions must be requested by petition to the department.

### Clinical Psychology:

PSY 553 Theories and Research in Psychopathology

PSY 555 Theories of Personality and Psychotherapy

Therapy and assessment courses by permission of the instructor.

**Developmental Psychology:**

- PSY 571 Experimental Child Psychology  
 PSY 572 Perceptual and Attentional Development  
 PSY 573 Developmental Psychology  
 PSY 574 Cognitive Development in Children

**Experimental-Human Factors Psychology:**

- PSY 522 Advanced Cognitive Psychology  
 PSY 524 Human Information Processing  
 PSY 525 Basic Processes in Learning and Memory  
 PSY 528 Psychophysiology  
 PSY 529 Perception

**Social Psychology:**

- PSY 585 Experimental Social Psychology  
 PSY 587 Social Influence and Group Dynamics  
 PSY 588 Interpersonal Processes  
 PSY 589 Attitudes



Kenneth J. Kuntz.  
*Department of Psychology.*

**CLINICAL PSYCHOLOGY**

In addition to a broad academic background and competence in the application of research methodology, the Clinical Psychology program provides the student with:

- (a) thorough exposure to the areas of personality, psychopathology, and psychotherapy,
- (b) intensive training in the assessment of intelligence and personality,
- (c) supervised practice in individual, group, and behavior therapy techniques.

Through field experience in various community and clinical settings affiliated with the University, the student can translate classroom learning into practicum experience. The program is designed to prepare the student for competence at the M.A.-level or for pursuing a doctoral degree in Clinical Psychology.

The Master of Arts with a major in Psychology (Clinical) requires 44 semester hours consisting of 40 hours of academic course work, including thesis, and four hours of practicum as specified below.

	<i>Semester Hours</i>
<b>Core Requirements</b> .....	<b>9</b>
PSY 501 Experimental Design and Statistics I .....	3
PSY 502 Experimental Design and Statistics II .....	3
PSY 599 Thesis .....	3
<b>Clinical Requirements</b> .....	<b>17</b>
PSY 550 Interviewing .....	1
PSY 551 Assessment of Intelligence .....	3
PSY 553 Theories and Research in Psychopathology .....	3
PSY 555 Theories of Personality and Psychotherapy .....	3
PSY 556 Assessment of Personality .....	3
PSY 569 Clinical Practicum .....	Total of 4
<b>Clinical Electives</b> .....	<b>6</b>
Select six credit hours from among the following courses*:	
PSY 558 Group Psychotherapy .....	3
PSY 560 Childhood Psychopathology and Psychotherapy .....	3
PSY 562 Behavior Therapy-Theory and Practice .....	3
PSY 564 Individual Psychotherapy .....	3
PSY 566 Family and Marriage .....	3
<b>Free Electives</b> .....	<b>6</b>
<b>Breadth Requirement</b> .....	<b>6</b>
Select three credit hours each from any two of the following areas: Developmental, Experimental-Human Factors, Social. Courses which fulfill this requirement are listed above.	
<b>Total Semester Hours</b>	<b>44</b>

\*Approved special topic courses may apply as Clinical electives.

## DEVELOPMENTAL PSYCHOLOGY

The graduate program in Developmental Psychology offers the student intensive preparation for a profession in teaching and/or research. The aim of the program is to provide a broad background of knowledge of Psychology, in general, and Developmental Psychology, in particular, in addition to cultivating research competence for the investigation of developmental processes. Toward these ends, the program consists of:

- (1) a core curriculum of courses,
- (2) opportunities for collaborative research with a faculty member in the student's second term (see the Department of Psychology's *Invitation to Graduate Study* for specific faculty research interests), followed by original research leading to the thesis.

Emphasis is on the study of the development of perceptual, attentional, and cognitive processes in children as revealed by changes in learning, memory, problem solving, language, social and emotional behavior. In addition, students may have the opportunity to apply knowledge in these areas in affiliation or research with schools and social agencies.

The Master of Arts with a major in Psychology (Developmental) requires 36 semester hours, including thesis, as specified below.

	<i>Semester Hours</i>
<b>Core Requirements</b> .....	<b>9</b>
PSY 501 Experimental Design and Statistics I .....	3
PSY 502 Experimental Design and Statistics II .....	3
PSY 599 Thesis .....	3
<b>Developmental Requirements</b> .....	<b>12</b>
PSY 571 Experimental Child Psychology .....	3
PSY 572 Perceptual and Attentional Development .....	3
PSY 573 Development Psychology .....	3
PSY 574 Cognitive Development in Children .....	3
<b>Free Electives*</b> .....	<b>9</b>
(PSY 596 Experimental Research is strongly recommended as an elective.)	

**Breadth Requirement** ..... 6  
 Select three credit hours each from any two of the following areas: Clinical, Experimental-Human Factors, Social. Courses which fulfill this requirement are listed above.

Total Semester Hours 36

\*PSY 457 TV and its Effects on Children, may also serve as an elective.

## EXPERIMENTAL-HUMAN FACTORS PSYCHOLOGY

The Master's program in Experimental-Human Factors Psychology is designed to prepare the student for further graduate study at the Ph.D. level, for teaching, and/or for a career as a research-applied scientist. The curriculum includes an exposure to the basic theoretical issues and quantitative research methodology — including the use of computer facilities and other scientific

equipment — associated with perception, cognition, motor skills, memory, thinking/problem solving, psychophysiology, and other human learning processes. Emphasis is on the integration of course work with research.

The Master of Arts with a major in Psychology (Experimental-Human Factors) requires 36 semester hours, including thesis, as specified below.

	<i>Semester Hours</i>
<b>Core Requirements</b> .....	9
PSY 501 Experimental Design and Statistics I .....	3
PSY 502 Experimental Design and Statistics II .....	3
PSY 599 Thesis .....	3

<b>Experimental-Human Factors Requirements</b> .....	9
PSY 535 Human Factors .....	3
PSY 531 Man-Machine Systems .....	3
PSY 532 Special Topics in Human Factors .....	3

<b>Experimental-Human Factors Electives</b> .....	9
Select one of the following. Selection must be approved by advisor.	
PSY 504 Seminar in Experimental Design and Statistics .....	3
PSY 505 Computer Application to Behavioral Science .....	3
PSY 595 Seminar in Special Topics in Psychology .....	3

Select at least *two* of the following with approval of advisor.

PSY 522 Advanced Cognitive Processes .....	3
PSY 524 Human Information Processing .....	3
PSY 525 Basic Processes in Learning and Memory .....	3
PSY 526 History and Systems .....	3
PSY 528 Psychophysiology .....	3
PSY 529 Perception .....	3
PSY 596 Experimental Research .....	3
<b>Free Electives</b> .....	3

<b>Breadth Requirement</b> .....	6
Select three credit hours each from any of the two following areas: Clinical, Developmental, Social. Courses which fulfill this requirement are listed above.	

*(Note: With permission of the Director of Graduate Studies and Research in Psychology the breadth requirement may be fulfilled in whole or part by selecting approved courses from departments other than Psychology.)*

Total Semester Hours 36

## GENERAL PSYCHOLOGY

For a limited number of students with specific interests and specialized career goals the Master of Arts with a major in General Psychology is offered. Before matriculation, or very early in the student's graduate career, the student and

the Director of Graduate Studies and Research in Psychology specify objectives and design a curriculum tailored to the individual student. Courses selected reflect the student's needs and objectives, the overall requirements of the Department of Psychology, and may include courses from other departments of the University.

The Master of Arts with a major in Psychology (General) requires 36 semester hours, including thesis, as specified below.

	<i>Semester Hours</i>
<b>Core Requirements</b> .....	9
PSY 501 Experimental Design and Statistics I .....	3
PSY 502 Experimental Design and Statistics II .....	3
PSY 599 Thesis .....	3
 <b>General Program Electives</b> .....	 15
Electives may be selected from other departments of the University. A maximum of six semester hours beyond the breadth requirement is normally allowed in any area of concentration.	
 <b>Breadth Requirement</b> .....	 12
Select three semester hours each from the following areas: Clinical, Developmental, Experimental-Human Factors, and Social. Courses which fulfill the breadth requirement are listed above.	

Total Semester Hours 36

## SOCIAL PSYCHOLOGY

The Master's program in Social Psychology offers the student the opportunity to combine experimental and theoretical knowledge with applied experience. In addition to basic content such as group dynamics, attitudes, and interpersonal attraction, courses are offered in current areas of interest such as community problems and women's studies. Students are encouraged to further their knowledge of social psychology through designing and conducting their own experiments and through work with various community agencies. The aims of the program are to prepare the student for further graduate work at the Ph.D. level and/or for a Master's level career in work or consultation with social-community agencies or business and industry.

The Master of Arts with a major in Psychology (Social Psychology) requires 36 semester hours, including thesis, as specified below.

	<i>Semester Hours</i>
<b>Core Requirements</b> .....	9
PSY 501 Experimental Design and Statistics I .....	3
PSY 502 Experimental Design and Statistics II .....	3
PSY 599 Thesis .....	3

**Social Requirements** ..... 12  
 PSY 585 Experimental Social Psychology ..... 3

Select nine credit hours from among the following:

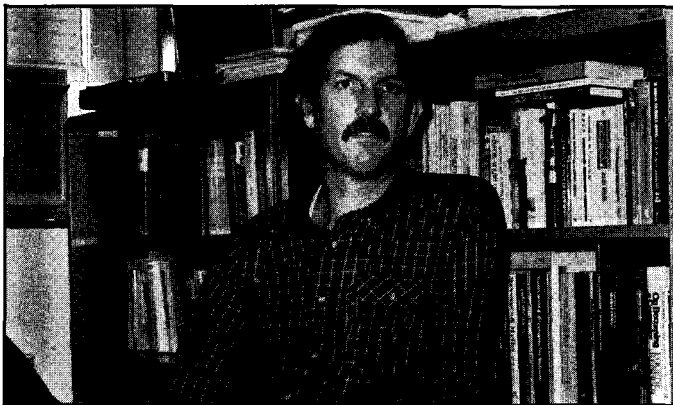
PSY 586 Applied Social Psychology ..... 3  
 PSY 587 Social Influence and Group Dynamics ..... 3  
 PSY 588 Interpersonal Processes ..... 3  
 PSY 589 Attitudes ..... 3

**Free Electives** ..... 9

**Breadth Requirement** ..... 6

Select three credit hours each from two of the following areas: Clinical, Developmental, Experimental-Human Factors. Courses which fulfill this requirement are listed above.

Total Semester Hours 36



John R. Korte.  
 Department of Psychology.

## COURSES OF INSTRUCTION

### *Quantitative Methods*

PSY 501. EXPERIMENTAL DESIGN AND STATISTICS I: Study of the logic of the design of experiments in psychology with special emphasis on the use of the analysis of variance. Students will be expected to perform statistical procedures on the computer using canned statistical packages. Prerequisite: undergraduate statistics.

3 sem. hrs.

PSY 502. EXPERIMENTAL DESIGN AND STATISTICS II: Further study of the logic of the design of experiments in psychology with special emphasis on the use of bivariate correlation and regression, and multiple regression. Students will be expected to perform statistical procedures on the computer using canned statistical packages. Prerequisite: PSY 501.

3 sem. hrs.



PSY 504. SEMINAR IN EXPERIMENTAL DESIGN AND STATISTICS: Study of special topics in design and statistics such as multivariate analysis, nonparametric statistics, program evaluation, and math modeling. The specific topic will vary from one offering to the next. Prerequisite: permission of instructor. *3 sem. hrs.*

PSY 505. COMPUTER APPLICATIONS TO BEHAVIORAL SCIENCE: Consideration of computer languages, systems commands and text editing facilities, available statistical packages, and psychological studies in which the use of the computer was critical to the experimental design. Prerequisite: PSY 501, or permission of instructor. *3 sem. hrs.*

### ***Experimental Psychology***

PSY 522. ADVANCED COGNITIVE PROCESSES: Basic research paradigms for the experimental investigation of cognitive processes, with attention to the current information-processing theories of cognition. Topics include selective attention, visual short-term memory, pattern recognition, encoding processes, imagery, search and retrieval processes, theories of human memory, and cerebral dominance. *3 sem. hrs.*

PSY 524. HUMAN INFORMATION PROCESSING: Current psychological and artificial intelligence models of cognition. Topics include coding mechanisms in the central nervous system, simulation of sensory processes and recognition, computer models of human memory, semantic information processing by humans and machine, fast retrieval theories: recent theories of language comprehension and problem solving. *3 sem. hrs.*

PSY 525. BASIC PROCESSES IN LEARNING AND MEMORY: Fundamental paradigms, concepts and findings in learning and memory including reinforcement, insight, serial learning, transfer, short-term and long-term memory, recognition, recall, etc. *3 sem. hrs.*

PSY 526. HISTORY AND SYSTEMS: Traces the evolution of psychology since 1890. Emphasis is placed on integrating the various systems and schools of thought within the spectrum of modern psychology. (Also PSY 471.) *3 sem. hrs.*

PSY 528. PSYCHOPHYSIOLOGY: Neurophysiology of attention, sensation, perception, emotion, learning, memory, and motor control. Emphasis on electrophysiological indicants and cybernetical analyses. *3 sem. hrs.*

PSY 529. PERCEPTION: Systematic study of methods and research findings in the field of human perception, with an evaluation of theoretical interpretations. Prerequisites: PSY 501 or permission of instructor. (Also PSY 323.) *3 sem. hrs.*

PSY 531. MAN-MACHINE SYSTEMS: Introduction to man-machine design problems. Treats design process from proposal stage to final testing and evaluation. Emphasis is upon methods and techniques which promote effective communication between man and machine. *3 sem. hrs.*

PSY 532. SPECIAL TOPICS IN HUMAN FACTORS: Wide ranging topics related to Human Factors Psychology are envisioned. For example: human tracking performance, tactual communication, vigilance, motor memory, skill development, visual displays, technical invention, electrophysiological indicants of human performance, etc. May be repeated. Prerequisite: graduate standing or permission of the instructor. *1-3 sem. hrs.*

PSY 535. HUMAN FACTORS: An advanced, graduate level introduction to the field of human factors emphasizing the design of machines to meet human needs. Research methodology, human models, and performance within stressful environments emphasized within a man-machine system conceptual framework. Prerequisite: permission of the instructor. 3 sem. hrs.

### ***Clinical Psychology***

PSY 550. INTERVIEWING: Introduction to the structure and purpose of various clinical interviews. Supervised practice of essential interviewing skills and report writing. 1 sem. hrs.

PSY 551. ASSESSMENT OF INTELLIGENCE: Theoretical rationale and techniques of individual mental testing, with emphasis on the Wechsler Scales and the Stanford-Binet. Major content areas include theories of intelligence, test development and evaluation, clinical interpretation, and current research. 3 sem. hrs.

PSY 553. THEORIES AND RESEARCH IN PSYCHOPATHOLOGY: Survey of major theories, research evidence, and methodological problems in determining the etiology of the various behavior disorders. Practice in the use of diagnostic classifications. 3 sem. hrs.

PSY 555. THEORIES OF PERSONALITY AND PSYCHOTHERAPY: Survey and critical analysis of the major current theories of personality and psychotherapy integrating their contributions into a diversified, functional, and adaptable approach to therapy. Prerequisite: PSY 553. Permission of instructor. 3 sem. hrs.

PSY 556. ASSESSMENT OF PERSONALITY: Variety of approaches to personality assessment as well as the techniques of administration and interpretation of specific instruments. Emphasis is on the MMPI, Rorschach, and TAT. Strategies of test construction and evaluation, ethical issues, and research are discussed. 3 sem. hrs.

PSY 558. GROUP PSYCHOTHERAPY: Survey of theories and techniques of group psychotherapy, including a review of the theoretical and empirical literature, as well as a training group experience. Prerequisite: PSY 555 or permission of instructor. 3 sem. hrs.

PSY 560. CHILDHOOD PSYCHOPATHOLOGY AND PSYCHOTHERAPY: Overview of psychopathology in children, with a major emphasis on individual treatment, parent counseling, and prevention. Prerequisite: PSY 555 or permission of instructor. 3 sem. hrs.

PSY 562. BEHAVIOR THERAPY — THEORY AND PRACTICE: Survey of the various behavior therapy techniques, their theoretical foundations and experimental support. Prerequisite: PSY 555 or permission of instructor. 3 sem. hrs.

PSY 564. INDIVIDUAL PSYCHOTHERAPY: In-depth study of the principles and techniques of dynamic, individual psychotherapy as developed from clinical and empirical findings. Prerequisite: PSY 555 or permission of instructor. 3 sem. hrs.

PSY 566. FAMILY AND MARRIAGE THERAPY: Survey of the major therapeutic approaches to family and marital problems and related research findings. Prerequisite: PSY 555 or permission of instructor. 3 sem. hrs.

PSY 568. RESEARCH AND PRACTICE IN HEALTH PSYCHOLOGY: A critical evaluation of the application of Psychology in health. Topics range from psychophysiology and biofeedback to the psychological and social dimensions of health, illness, and coping with stress. Students will evaluate research publications in the field and engage in clinically oriented research projects. 3 sem. hrs.

PSY 569. CLINICAL PRACTICUM: Experience in interviewing, psychological testing and therapy is acquired through placement in approved mental health agencies. Prerequisite: clinical standing and concurrent registration in assessment and therapy courses. Clinical students register for one semester hour of practicum each term. To be repeated to four semester hours. 1 sem. hr.

### ***Developmental Psychology***

PSY 457. TELEVISION AND ITS EFFECTS ON CHILDREN: Psychological research on the effects of television on children will be read. The research will be addressed to television's role as a socialization medium, rather than as an entertainment medium. Major emphasis will be placed on analyzing and evaluating the research. Available for graduate credit with permission of instructor. 3 sem. hrs.

PSY 571. EXPERIMENTAL CHILD PSYCHOLOGY: Evaluation of some current theoretical issues in developmental psychology and the experimental methods useful in attempts toward their solution, along with a survey of data from such research. Prerequisite: PSY 351 or equivalent. 3 sem. hrs.

PSY 572. PERCEPTUAL AND ATTENTIONAL DEVELOPMENT: Theory and methodology relating to perceptual and attentional development beginning with birth. Emphasis on visual capacities, influence of variables on perceptual development, individual differences and the effects of early experience on perceptual/cognitive functioning and sensory integration related to reading development. Prerequisite: graduate standing or permission of instructor. 3 sem. hrs.

PSY 573. DEVELOPMENTAL PSYCHOLOGY: The science of human development with emphasis on theory, research, methods, findings and applications. Topics selected from but not limited to: personality and social development, language acquisition, problem-solving, attachment, sex roles, children's rights, moral and prosocial behavior, family relations and extrafamilial influences such as television and schools. Prerequisite: graduate standing or permission of the instructor. 3 sem. hrs.

PSY 574. COGNITIVE DEVELOPMENT IN CHILDREN: Major approaches to the study of cognitive development: attentional and mediational development as demonstrated in children's learning, memory, and problem solving; language development and Piaget's theory. Prerequisite: graduate standing or permission of instructor (also PSY 452.) 3 sem. hrs.

### ***Social Psychology***

PSY 443. PSYCHOLOGY OF WOMEN: Scholarly approach to current topics, which vary but may include sex role learning, images of women in the mass media, sex differences, and pros and cons of the feminist movement. Open to all interested students, male and female. Available for graduate credit with permission of instructor. 3 sem. hrs.

PSY 585. **EXPERIMENTAL SOCIAL PSYCHOLOGY:** Designed to provide information and perspective about such social psychological topics as attitude change, interpersonal attraction, fairness in exchange, attribution, aggression, helping and intrinsic motivation. Prerequisite: graduate standing. *3 sem. hrs.*

PSY 586. **APPLIED SOCIAL PSYCHOLOGY:** Application of social psychology in situations encountered in business and governmental agencies will be studied. Emphasis on organizational structure and communication, conflict, equity, and motivation in organizations. Current approaches to problems in social services and industry will be examined. Prerequisite: PSY 585 and permission of instructor. *3 sem. hrs.*

PSY 587. **SOCIAL INFLUENCE AND GROUP DYNAMICS:** Theory and research in two major areas of Social Psychology. Specific course content may vary, but probable topics include group problem-solving and decision-making, the classic conformity research, group cohesiveness, communication networks, and group conflict. *3 sem. hrs.*

PSY 588. **INTERPERSONAL PROCESSES:** Seminar in research in some prominent sub-areas of Social Psychology. Emphasis on critical skills and research ideas in topics as non-verbal communication, self-indulgence, affiliation and attraction, and equity theory. Prerequisite: PSY 585, permission of instructor. *3 sem. hrs.*

PSY 589. **ATTITUDES:** Seminar in formation, change and measurement of attitudes. Learning, cognitive consistency, and functional approaches will be critically examined. Practical attitude content areas as political persuasion or sex-role attitudes may be examined. Prerequisite: PSY 585 or permission of instructor. *3 sem. hrs.*

### ***Independent Study and Research***

PSY 595. **SEMINAR IN SPECIAL TOPICS IN PSYCHOLOGY:** Various topics of special interest to faculty and students. An intensive critical evaluation of the appropriate literature. May be repeated. Prerequisite: graduate standing or permission of instructor. *1-3 sem. hrs.*

PSY 596. **EXPERIMENTAL RESEARCH:** Individual graduate students explore particular research areas. Under guidance of the instructor, research projects are formulated and conducted. Project reports are required. May be repeated. Prerequisite: permission of instructor. *1-3 sem. hrs.*

PSY 597. **READINGS:** Designed for individual, student-faculty study in a specialized area of interest. Topic and criteria for evaluation to be specified prior to registration. May be repeated. Prerequisite: permission of instructor. *1-3 sem. hrs.*

PSY 599. **THESIS:** An original research project incorporating an appropriate review of theory and literature and demonstrating competence in the application of research methodology. Required of all graduate students. *3 sem. hrs.*

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Department of  
**RELIGIOUS STUDIES (REL)**

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Reverend James L. Heft, S.M., Chairman of the Department, and  
Director of the Graduate Program.

The Graduate Department of Religious Studies is an ecumenical community of students and professors engaged in the study, research, and interpretation of religious issues. It considers these issues from the context of the more classical disciplines of the Judaeo-Christian heritage, with particular emphasis on the Roman Catholic tradition, as well as the burgeoning areas of multi-cultural and cross-disciplinary concerns. It offers a Master of Arts individualized to meet each student's need, whether it be for an advanced degree or professional preparation. The student may therefore choose to follow one of two programs which lead to the Master of Arts degree.

### **PROGRAM IN THEOLOGICAL STUDIES**

The Master's program in Theological Studies offers a comprehensive approach to the study of theology and religion. Each student is expected to develop an understanding of biblical sources, historical developments, moral and contemporary theologies, especially in the Roman Catholic tradition. Ecumenical perspectives, among Christians and world religions, provide an important matrix for study.

### **PROGRAM IN PASTORAL MINISTRIES**

The Master's program in Pastoral Ministries offers the student an opportunity to prepare for a variety of service careers emerging in the contemporary Church. Courses and workshops, particularly in religious education and telecommunications, family and parish ministries, and the social teachings of the Church, ensure the vitality of the program. This program, grounded in the study of theology, shaped distinctively by general principles of pastoral ministry, is open to a variety of applications. It prepares students for pastoral positions in catechetics and religious education, family, parish and campus ministry. Taking into account the individual interests and needs of the students the program responds to contemporary pastoral needs through an integration of theory and practice.

### **SPECIAL RESOURCES**

Students have the opportunity to draw upon the resources of other departments of the University, as well as upon the Centers of the University (the Family Center and the Center for Christian Renewal, in which may be found the offices for Creative Ministry, Educational Services and Religious Telecommunications). Interaction with an area seminary and other institutions, interchange of facilities, sharing of library resources, cooperative innovative programming, and cross-registration makes available to students not only a greater variety of courses but also provides the opportunity for even more flexible construction of their degree programs.

The University administers a doctoral program in Theology (S.T.D.) sponsored by the Pontifical Manriamum University. Prerequisite: a licentiate in Theology (S.T.L.) or its equivalent. (See Chapter VI.)

The University of Dayton is also the home of the International Marian Research Institute which administers a doctoral program in Theology (S.T.D.) sponsored by the Pontifical Marianum University in Rome. Graduate students in the Department of Religious Studies may take courses in the Institute. Consult the chairperson for further information.

## **GRADUATE ASSISTANTSHIPS**

The department offers several graduate assistantships granted on a competitive basis. They provide for tuition remission for 18 credit hours a year and for an annual stipend. Write the chairperson for further information.

## **ADMISSION REQUIREMENTS**

An applicant is admitted to graduate study if the admitting committee of the department is satisfied that the applicant is fully qualified to undertake graduate study. Twenty-four semester hours in Philosophy and Theology with a 3.0 grade-point average or their equivalent is recommended. Adjustments may be made by the chairperson for special situations.

## **PROGRAM REQUIREMENTS**

Each program, though different in its internal structure, requires 36 credit hours for graduation. In the construction of a program it is expected that the majority of the student's course work will be taken in the Department of Religious Studies. A 3.0 quality point average in departmental courses and in the student's overall program is required for graduation.

Both programs in the Master of Arts are to be pursued in an individualized manner. Upon admission to the program each student (in conjunction with a graduate advisor and taking into consideration the student's needs, interest, and background) is to draw up a proposal for the program to be followed. This program proposal is then submitted to the Graduate Committee of the department for its approval.

The programs leading to the Master's degree may be pursued in summer sessions with courses of one to six weeks duration, or be pursued full-time, i.e., throughout the year. They must be completed within seven calendar years from the time of matriculation.

## **STRUCTURE OF THE PROGRAMS AND COURSE WORK**

### **THEOLOGICAL STUDIES**

Three arrangements are possible:

- (1) 36 hours of course work, with the submission to the graduate committee of the Department of a research paper done as a part of one of the courses taken between the 15th and 24th hour of course work,
- (2) 33 hours of course work and a 3 hour project,
- (3) 30 hours of course work and a 6 hour thesis. An oral defense of the thesis is required.

## PASTORAL MINISTRIES

This program is divided into three parts:

- (1) theological foundations (12-15 hours),
- (2) basic principles for effective ministry (6-9 hours),
- (3) the practice and study of specific ministries (9-12 hours), including a pastoral/theological synthesis seminar (3 hours).

### Language Proficiency

There is no language requirement for the degree. For specialization in the biblical or historical areas a working knowledge of the language employed in the area, e.g., Hebrew, Greek, or Latin, is encouraged. The language proficiency is particularly recommended for those students preparing for doctoral work.



Rev. James L. Heft, S.M.  
*Department of Religious Studies.*

## COURSES OF INSTRUCTION

### ***Biblical Languages***

REL 501, 503. BIBLICAL HEBREW I, II: Introduction to the morphology and syntax of biblical Hebrew to facilitate the handling of basic tools and the reading of simple prose texts. *3 sem. hrs. each.*

REL 502, 504. BIBLICAL GREEK I, II: Introduction to Hellenistic Greek. Vocabulary, grammar, and syntax. Selective readings of New Testament texts. *3 sem. hrs. each.*

### ***Biblical Studies***

REL 511. CONTEMPORARY OLD TESTAMENT CRITICISM: Introduction to the principal methodological approaches to the Old Testament and a survey of the major results of contemporary biblical scholarship. *3 sem. hrs.*

REL 512. OLD TESTAMENT BACKGROUND: Introduction to ancient Near Eastern studies, a survey of the literature and the relationship to the Old Testament with special attention to selected topics. May be taken more than once. 3 sem. hrs.

REL 513. OLD TESTAMENT EXEGESIS: Critical study of selected writings of the Old Testament. May be taken more than once. (1) Hexateuch, (2) Historical Books, (3) Prophets, (4) Psalms, (5) Wisdom Literature, (6) Apocalyptic Literature. 3 sem. hrs.

REL 514. OLD TESTAMENT THEOLOGY: An examination of the discipline of Old Testament theology. Special consideration to the relationship of history and theology. 3 sem. hrs.

REL 516. CONTEMPORARY NEW TESTAMENT CRITICISM: Introduction to the major methodological approaches to the New Testament with an emphasis on introductory matters, content, and cultural heritage. 3 sem. hrs.

REL 517. NEW TESTAMENT BACKGROUNDS: Thorough study of selected individual points, e.g., Gnosticism, Qumran, needed for an understanding of the New Testament. May be taken more than once. 3 sem. hrs.

REL 518. NEW TESTAMENT EXEGESIS: Critical exegetical study of selected writings of the New Testament. May be taken more than once. (1) Synoptics: Matthew and Mark, (2) Luke/Acts, (3) John, (4) Pauline Corpus, (5) Pastoral Epistles, (6) Book of Revelation. 3 sem. hrs.

REL 519. NEW TESTAMENT THEOLOGY: A thorough study of one theme in the theology of the New Testament. May be taken more than once. 3 sem. hrs.

### ***Historical Theology***

REL 520. HISTORY AND THEOLOGY OF THE MEDIEVAL CHURCH: Early Medieval foundations, the Carolingian Renaissance, the preparation of the 11th and 12th centuries, as well as the post-13th century movement toward nominalism, to give perspective to the High Scholasticism of the 13th century. 3 sem. hrs.

REL 521. CHRISTIAN DOCTRINE IN THE EARLY CHURCH: The development of doctrine from the post-apostolic age to the beginning of the Middle Ages including the Apostolic Fathers, the Apologists, Gnosticism, Irenaeus, Marcion, Tertullian, John of Damascus, and the Schools of Antioch, Alexandria, and Cappadocia. 3 sem. hrs.

REL 522. FATHERS OF THE CHURCH: Analysis of the life and thought of individual Fathers of the Church, may be taken more than once. (1) Augustine, (2) Origen. 3 sem. hrs.

REL 523. TRENT TO VATICAN II: Historical account of Christianity's theological response to the major reformers and of further theological developments of Christianity in the context of philosophy, science, and political revolutions up to Vatican II. 3 sem. hrs.

REL 524. PROTESTANT CHRISTIANITY: Survey of the development of Protestant thought from the Reformation to the present. Analysis, in their own writings and their historical context, of selected Protestant theologians, such as Luther, Calvin Knox, Cranmer Schleiermacher, Ritschl, Harnack, and Barth. 3 sem. hrs.



***Systematic Theology***

REL 530. MODERN THEOLOGICAL METHODS AND MOVEMENTS: Selected theological works or movements in theology in the 19th and 20th centuries. May be taken more than once. *3 sem. hrs.*

REL 531. THEOLOGY OF HOPE: Study of the development and implications of the new theology of hope. *3 sem. hrs.*

REL 532. PROCESS THEOLOGY: An analysis of process theology, its central themes, and its implications for an understanding of God, the man, and the religious life. *3 sem. hrs.*

REL 534. SEARCH FOR IMMORTALITY: Study of how a variety of disciplines understand immortality. A theological evaluation of these insights with reference to traditional and prospective theology. *3 sem. hrs.*

REL 535. GOD AND HUMAN EXISTENCE: A survey of Christian theologies of God, traditional and modern, and viewpoints they represent on the nature and purpose of human existence. *3 sem. hrs.*

REL 537. CHRISTOLOGY: An examination of the approaches taken by contemporary theologians in discussing Jesus and his significance for Christian faith. *3 sem. hrs.*

REL 538. THE QUESTION OF THE HISTORICAL JESUS: Detailed consideration of two major problem areas of New Testament interpretation, the question of the historical Jesus and the new hermeneutics, studying them in their historical perspective, present state of development, and possible future directions. *3 sem. hrs.*

REL 540. ECCLESIOLOGY: Study of selected teachings on the nature, structure, and mission of the Church and her relationship to other Christian churches, to world religions, and to the world. *3 sem. hrs.*

REL 541. THEOLOGY OF MINISTRY: Study of ministry as the right and responsibility of all Christians; Jesus' dying and rising as the unifying thread linking the description, division and chief aspects of ministry to evangelization and the kingdom; pastoral implications of the foregoing. *3 sem. hrs.*

REL 543. SACRAMENTAL THEOLOGY: Detailed study of the principle of sacramentality and of the individual sacraments, stressing the historical development of each and its contemporary renewal. *3 sem. hrs.*

REL 544. SELECTED CATHOLIC DOCTRINES: An examination from several perspectives (biblical, historical, and systematic) of Catholic doctrines and dogmas, including the notion of dogma, its development, Scripture and Tradition, Papal Infallibility, Freedom of Conscience, the Marian Dogmas, and the Salvation of non-Christians. *3 sem. hrs.*

REL 546. LITURGY: Study of the theological perspective on the history and the future of Christian liturgy. *3 sem. hrs.*

REL 547. **CONTEMPORARY SPIRITUALITY:** An examination of the meaning of Christian Spirituality in light of the Scriptures and contemporary theological insights. Emphasis on the baptismal roots of the call to Christian holiness and the principal dimensions of this call, coupled with a study of the various states of life that can lead to the fullness of Christian perfection. 3 sem. hrs.

REL 548. **THEOLOGY OF PRAYER:** Study of the meaning of prayer, focusing on prayer in the Hebrew and Christian Scriptures, prayer as reflected in selected classical mystical writers, and contemporary approaches to prayer. 3 sem. hrs.

REL 549. **MARIAN QUESTION TODAY:** Detailed treatment of selected issues of contemporary interest relating to the role of the Virgin Mary in the history of salvation. May be taken more than once. 3 sem. hrs.

### ***Christian Ethics***

REL 561. **APPROACHES TO MORALITY:** An attempt to establish the foundations of Christian morality, consisting of an historical survey of approaches and developments from the New Testament period to the present. 3 sem. hrs.

REL 562. **CONTEMPORARY MORAL PROBLEMS:** An open approach to contemporary moral issues within theological perspectives. 3 sem. hrs.

REL 568. **EVOLUTION AND ETHICS:** The contemporary theology of Christian existence as a whole, stressing the conscious unity of existence; the implications of evolution for theology and ethics. 3 sem. hrs.

### ***Religion and Culture***

REL 571. **THE IMAGINATION AND MODERN THEOLOGY:** An attempt to show the role of reason and the imagination in the formulations of various approaches to theological issues. 3 sem. hrs.

REL 575. **THEOLOGY AND THE FILM:** Focus on the mutual issues of film and religion as both reflect and affect the values and images of a culture. 3 sem. hrs.

REL 576. **THEOLOGY AND ART:** An investigation into the relationship between religion and art with a treatment of Renaissance and post-Renaissance painting and sculpture as manifestations of Christian apocalyptic and humanistic world-views at given times. 3 sem. hrs.

REL 577. **THE RELIGIOUS QUEST IN LITERATURE:** Study of the religious quest as found in various modes of poetry, novel, and drama with emphasis on the form of literary expression. 3 sem. hrs.

### ***Pastoral Ministries***

REL 581. **THEOLOGY OF REVELATION:** Study of God's self-disclosure to His people as found in scripture, tradition, and the living experience of the Church immersed in history. 3 sem. hrs.

REL 582. **MODELS OF CATECHESIS:** A consideration of the role that models play in the development and teaching of the basics of Christian belief — Jesus, grace, church, redemption, sin, etc. 3 sem. hrs. each.

REL 583. RELIGIOUS PSYCHOLOGY: Study of the human response to God in the light of contemporary psychology. The implications for catechesis in the various stages of human development, in the process of conversion and commitment, and in the crises of faith. 3 sem. hrs.

REL 584. CONTEMPORARY CATECHETICAL PROCESS: An attempt to identify and relate specific characteristics of various historical and contemporary approaches to religious education. Specific emphasis on the thought of authors such as Bushnell, Moran, Westenoff, Lee, etc., exploring their impact on developing a philosophy of religious education in a pluralistic society for the future. 3 sem. hrs. each.

REL 585. PASTORAL COUNSELING: Brief study of the methods of counseling with emphasis on those modes most in practice today. Concentration on the major problems faced by counselors in the pastoral area. 3 sem. hrs.

REL 586. LEADERSHIP IN PARISH MINISTRY: Study of the traditional parish structure as seen against the background of biblical and historical perspectives on the local church. An examination of the forces for change in the contemporary parish with an effort, out of the theoretical framework of leadership and administration, to assist the student in developing a philosophy and strategy of leadership. 3 sem. hrs.

REL 587. RELIGIOUS STUDIES AS AUTOBIOGRAPHY: An invitation to reflect systematically on the religious dimension of one's own life story by asking questions about meaning, purpose, values, identity, etc., through the study of the lives of great religious figures. An assessment of the potential of this autobiographical approach for religious education. 3 sem. hrs.

REL 588. TEACHING MORALS AND VALUES IN RELIGIOUS EDUCATION: An integration of theory and practical techniques for teaching Morals and Values in Religious Education today. An exploration of Value and Moral Development with special emphasis on authors such as Piaget, Kohlberg, Erikson, Fowler, Rokeach, etc. 3 sem. hrs. each.

### ***General Courses of Instruction***

REL 590. SELECTED QUESTIONS: A study of specific questions and developments in biblical, historical, systematic, or catechetical theology. May be taken more than once. 3 sem. hrs.

REL 592. CONTEMPORARY ISSUES: A graduate workshop and/or seminar investigating and analyzing a specific area of theology and interdisciplinary scholarship concerning contemporary issues. 1-6 sem. hrs.

REL 593. DIRECTED STUDY: A directed study of a particular theologian, problem, or historical period. May be taken more than once. 1-3 sem. hrs.

REL 599. THESIS 6 sem. hrs.

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# VIII SCHOOL OF BUSINESS ADMINISTRATION

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Sam Gould, Dean

Henry H. Stick, Associate Dean and Director, M.B.A. Program

## THE MBA PROGRAM

### PROGRAM OBJECTIVE

The objective of the M.B.A. program is: to develop creative and effective managers by providing the student with administrative, behavioral, and technical knowledge and skills.

The student is expected to attain:

- A. Leadership and managerial ability
- B. Decision-making capability
- C. Technical mastery of functional disciplines
- D. An understanding of organization and human relationships
- E. An understanding of the external business environment, government and society.

The M.B.A. degree is broadly-based; it is designed to develop creative and effective managers who plan to pursue courses in both private and public-sector organizations. Management is considered a professional activity, requiring a combination of administrative, behavioral, and technical skills. These skills are developed through course work in the functional disciplines of Accounting, quantitative techniques, Finance, Economics, Marketing, Management, and human behavior. Later courses are designed to facilitate the integration and synthesis of functional knowledge. Emphasis throughout the program is on the development of managerial and decision-making abilities.

### PROGRAM REQUIREMENTS

The M.B.A. Program is a thirty-three semester credit hour program for the student with an undergraduate background in Business. For the student with a non-Business background, or one who lacks course work in key areas of undergraduate Business study, prerequisite courses are required.

Thirty semester hours (ten courses) are prescribed for all students. Additional depth in a selected subject area may be achieved by taking an elective course for the required program total of eleven courses.

An additional option available is the opportunity to pursue up to three hours of independent research. There is no thesis or comprehensive examination at the end of the program.

## **ADMISSION**

The applicant for admission is expected to hold a Bachelor's degree from an accredited college or university. The degree may be in Business Administration or in any other field. Those whose degrees are in fields other than Business Administration normally find it necessary to take graduate survey courses. Students with a Bachelor's degree in Business normally will have satisfied survey course requirements. In either case, any such requirements are determined on the basis of the adequacy of course work in eight particular areas of the undergraduate program.

Applicants must demonstrate a readiness for graduate study, personal integrity, and aptitude for successful managerial performance. The following indicators of high promise for success in graduate study are used in evaluating the applicant for admission:

1. Undergraduate and other collegiate records as indicated by official transcripts from all universities and colleges attended.
2. Results of the Graduate Management Admission Test (GMAT).

The initial step in the admissions process is to submit a program application form to the M.B.A. office. Letters of recommendation are not required. At the same time, the Registrars of all colleges or universities previously attended, excluding UD, should be requested to forward official transcripts of prior academic work to the M.B.A. office.

The GMAT is required of all applicants prior to acceptance into the program. Scheduled test dates and application forms are available from the M.B.A. office. Forms are to be completed and forwarded to the Educational Testing Service, Princeton, New Jersey, at least thirty days prior to the examination date. The GMAT is given four times/year at universities throughout the country with results made available directly to the M.B.A. program by the testing service.

Admission decisions are based on the record of prior academic work and GMAT results. The decision concerning application is provided after receipt of the application, transcripts, and GMAT results. The latter becomes available approximately one month after the test is taken. For example, if the GMAT is taken in October, the admission decision will be provided to the student by mid-December, providing sufficient time to register for the January term.

Students with undergraduate grade point averages of 3.0 (on a 4 point scale) or better may register under "Unclassified Graduate Status" for one semester, during which time the student is required to complete the GMAT. Students are not permitted to register under "Unclassified Status" for a second term without taking the GMAT.



Sam Gould, Dean.  
*School of Business Administration.*

## PROGRAM OF STUDY

There are three classifications of courses in the M.B.A. Program:

**Group I — Survey Courses**

**Group II — Core Courses**

**Group III — Elective Courses**

Before taking core and elective courses, the student is expected to have acquired a basic knowledge in eight business areas: economics, accounting, marketing, management, statistics, finance, quantitative techniques and computer use. Students with an undergraduate degree in Business Administration normally have met the survey requirements and proceed with Groups II and III, core, and elective courses.

Thirty-three semester hours of core and elective courses are required for the M.B.A. degree. Where the survey courses are required because of an undergraduate deficiency in one or more of the eight areas specified above, the total number of hours required will be accordingly greater. All M.B.A. courses are three semester hour courses with the exception of MBA 500G and MBA 595 "Individual Research."

All courses, exclusive of the surveys, must be completed within five calendar years of enrollment in the first course.

### Group I. Survey Courses

A student is considered to have an undergraduate course deficiency if lacking course work in any of one or more of the eight courses — economics, accounting, marketing, management, statistics, finance, quantitative techniques or computer use.

A course deficiency is also considered to exist if more than *seven (7)* years have elapsed from the date of the student's undergraduate degree to M.B.A. matriculation.

To make up a deficiency, the student usually takes the appropriate course(s) from the following graduate survey courses:

MBA 500-A	Graduate Survey in Economics
MBA 500-B	Graduate Survey in Accounting
MBA 500-C	Graduate Survey in Marketing
MBA 500-D	Graduate Survey in Management and Organization
MBA 500-E	Graduate Survey in Statistics
MBA 500-F	Graduate Survey in Finance
MBA 500-G	Graduate Survey in Computer Methods
MBA 500-I	Graduate Survey in Quantitative Methods

In some cases the deficiency can be eliminated by passing a proficiency test in the area(s) to waive the requirement. The proficiency is normally undertaken when the student has had some course work in the area or areas related to the survey course but not sufficient work to warrant its acceptance as fulfilling the Group I requirement.

Alternatively, survey requirements may be fulfilled via undergraduate work prior to matriculation into the M.B.A. Program. For example, in Columbus, some students have elected to meet survey requirements through undergraduate work at Otterbein College, Franklin University or Ohio State University. For information on appropriate undergraduate courses to waive survey requirements, contact the M.B.A. office.

Whenever survey courses are required, they must be completed before proceeding to core courses. However, a student may take core courses during the term in which the last required survey is being completed. For example, if the student has only the Graduate Survey in Finance to take, and wishes to carry a six-semester-hour course load, one of the core courses (except the Finance core course, MBA 520) may be taken simultaneously with the last remaining survey course.

## **Group II. Core Courses**

The core portion of the program consists of 33 semester hours (11 courses) which includes an elective.

The following ten courses are required:

MBA 501	Managerial Accounting
MBA 510	Quantitative Methods
MBA 520	Managerial Finance
MBA 530	Marketing Management
MBA 540	Managerial Economics
MBA 560	Operations Management
MBA 563	Management Information and Control Systems
MBA 571	Organizations and Their Environments
MBA 587	Organizational Behavior
MBA 590	Business Policies

Students with a strong academic background in a core area, normally a major or very strong minor in the undergraduate program, may be permitted, upon request to the M.B.A. office, to use an M.B.A. elective course instead of the core course.

Also, students with an undergraduate accounting major or a CPA should not schedule the Managerial Accounting course (MBA 501) but should take instead an accounting elective.

### **Group III. Elective Courses**

An elective course is required. It may be selected to obtain more program breadth or depth in a particular functional area. The student may choose the elective from among the other M.B.A. courses described on the following pages. In addition to the courses described, students may elect courses from the College of Arts and Sciences and other Schools of the University, with permission, when these are appropriate to their education plans.

For example, a student could achieve program breadth in Corporate Public Affairs by scheduling an appropriate elective from course offerings within the Department of Political Science. Or, the student may wish to develop a more thorough understanding of computers by using an elective from the Department of Computer Science.

**Sequence of Courses:** The student should note carefully the requirements regarding course sequence. Survey courses must be completed before proceeding to core and elective courses, with the exception of combining core courses with a last remaining survey course as explained above. Also note the following:

- MBA 500B, Survey in Accounting, is a prerequisite to MBA 500F, Survey in Finance.
- MBA 500G and MBA 500I, Surveys in Quantitative and Computer Methods are prerequisites to MBA 500E, Survey in Statistics.
- MBA 501 is a prerequisite to MBA 520, Managerial Finance.
- MBA 510 is a prerequisite to MBA 560, Operations Management.
- MBA 520 is a prerequisite to MBA 521, Problems in Managerial Finance.
- MBA 501 or MBA 520 or permission of the instructor are prerequisites to MBA 525, Investments and Financial Markets.
- MBA 530 is a prerequisite to MBA 535 or MBA 536.
- MBA 586 or MBA 587 are prerequisites to MBA 588, Seminar in Current Organizational Behavior Topics.
- MBA 590, Business Policies and Administrative Management, may be taken only after completion of 21 semester hours of core and elective courses.
- MBA 595, Individual Research, may be taken only after completing 15 hours of the core course requirements.

### **Individual Research**

The M.B.A. Program does not require a thesis. Students who have an interest in doing the kind of research involved in a thesis should note the course description for MBA 595, Individual Research, which can qualify for one to three semester hours of credit.



The student may do the research project in an area of choice, but it should not consist of work that would normally be done during the course of a regular job. It could, however, be job related.

Before undertaking the project, the student should have a clear idea of objectives and the methodology to be employed. A literature search and development of the bibliography should precede submission of the project for approval.

Approval is obtained by completing a project proposal form available from the M.B.A. office. The form must be submitted and approved before registering for the course. It is necessary to obtain approval during the term preceding that in which registration is planned. A faculty advisor is assigned to review and approve the proposal and to guide the student in the research effort. The length and detail of the research-based report depend on the subject material and are to be worked out with the advisor. No specified number of pages is required.

Individual Research projects are to be completed within the course of one term. However, during the summer session if a student registers for MBA 595 for the first half of the session, a "P," In Progress, grade may be awarded and the project extended through the second session.

A student may not take MBA 595 until 15 core program hours have been completed, including, if applicable, the appropriate M.B.A. core course in the field in which research is to be conducted.

It should also be noted that the course requires research to be distinguished from individual study. There are no provisions in the program for a student to "self-study" a given subject.

## ACADEMIC STANDING

The student is expected to maintain a "B" or 3.0 GPA throughout the M.B.A. course work, to include the survey courses. More than two "C" grades which are not off-set by "A" grades provide a basis for academic evaluation and possible program suspension. To qualify for graduation, the student must have a 3.0 average (B) in all work undertaken toward the degree.

## Transfer Credits

A maximum of six semester hours of appropriate graduate courses earned at another approved graduate school may be applied toward the M.B.A. Program at the University of Dayton. No graduate credit earned at either the University of Dayton or another school may be applied to the M.B.A. Program if such course work was completed more than five years prior to the anticipated date of graduation.

In some cases, the credit will have been completed at another University prior to matriculation in the M.B.A. Program. To transfer this credit, a letter of request must be initiated by the student and sent to the M.B.A. office. Official transcripts must accompany the letter. The request should be initiated during the first term of enrollment. The course work must be of "B" grade quality or better. Quality points are not transferred.

In other cases, a student will leave the area before completing the program and will seek to transfer credit back in order to satisfy academic requirements off-campus. In these cases, the student must obtain approval for the proposed work *before* enrollment off-campus. The catalog description of the intended course(s) must be submitted to the M.B.A. office. Consultation with the M.B.A. office is also recommended. After course approval and completion, official transcripts are required. A grade of "B" or better must be earned.



Henry H. Stick, Associate Dean.  
*Director M.B.A. Program.*

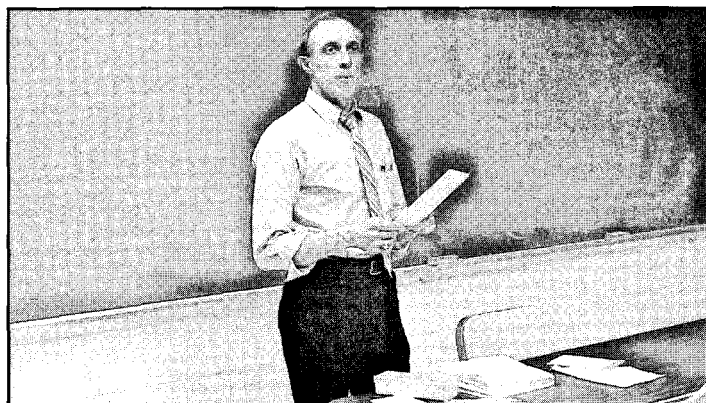
## GRADUATE ASSISTANTSHIPS

A limited number of graduate assistantships are available each year within the School of Business Administration. They are normally assigned to a department to assist in administration or research. Assistants are part-time University employees in the sense that work assignments are given, and hours of work maintained within an employer/employee relationship. Assistants contribute half-time services of 20 hours per week. Stipends are provided along with the remission of tuition and fees plus other benefits available to University employees. Application forms are available in the M.B.A. office and may be submitted at any time.

## ACADEMIC AWARDS

1. Each semester a "Certificate for Outstanding Academic Achievement" is awarded to those graduating students who have achieved a GPA of 3.8 or higher. The certificates are mailed to the students approximately one month following graduation.
2. The Reverend Raymond A. Roesch, S.M., Award of Excellence for outstanding academic achievement is awarded each April to the student, who during the preceding year, attained the highest academic record. The award consists of a plaque which is presented to the student plus an engraved plate displayed in the M.B.A. Office.

3. The School chartered a chapter of Beta Gamma Sigma, the National Honor Society in the field of business and administration, in April, 1984. Membership is earned through outstanding academic achievement. The top twenty percent of students awarded the Master's degree are eligible. Induction occurs at a banquet in the Spring of each year.



Douglas V. Rippy.  
*Department of Decision Sciences.*

## COURSES OF INSTRUCTION

**MBA 500A. GRADUATE SURVEY IN ECONOMICS:** Basic economic principles and their application. Consumer behavior, production theory, and the interaction of buyers and sellers in various kinds of markets; national income, monetary policy, fiscal policy and the economic role of the government in the United States. *3 sem. hrs.*

**MBA 500B. GRADUATE SURVEY IN ACCOUNTING:** The basic principles and concepts of accounting and of financial statements, with emphasis on understanding accounting terminology and the reasons for accounting conventions and practices; introduction to management uses of accounting data and reports. *3 sem. hrs.*

**MBA 500C. GRADUATE SURVEY IN MARKETING:** Development of a framework within which the marketing process can be critically examined, including analysis of the societal and legal constraints of the marketing process. Introduction to a variety of concepts associated with the macro character of marketing including consumption systems, distribution systems, promotional activities, product development and pricing. *3 sem. hrs.*

**MBA 500D. GRADUATE SURVEY IN MANAGEMENT AND ORGANIZATION:** An introduction to the schools of management is provided. The traditional functions of management (planning, organizing, directing and controlling) are covered. Course emphasis is placed on organization theory, organization behavior and interpersonal communication. *3 sem. hrs.*

**MBA 500E. GRADUATE SURVEY IN STATISTICS:** Applied statistics. Measures of central tendency and dispersion, frequency distributions, probability, sampling hypothesis testing and simple correlation; introduction to regression analysis. Prerequisite: MBA 500G or equivalent and MBA 500I or equivalent. 3 sem. hrs.

**MBA 500F. GRADUATE SURVEY IN FINANCE:** An overview of finance to include the math of finance, working capital management, capital budgeting, the cost of capital, a description of capital markets, the principles of investment and the role of financial institutions. Prerequisite: MBA 500B or equivalent. 3 sem. hrs.

**MBA 500G. GRADUATE SURVEY IN COMPUTER METHODS:** This course provides an overview of the roles of computer systems in modern production and service organizations, the BASIC language, management information systems, and locally available computerized support. 1 sem. hr.

**MBA 500I. GRADUATE SURVEY IN QUANTITATIVE METHODS:** This course provides an overview of the roles of mathematical methods in modern production and service organizations. The mathematical theories of simultaneous equations, matrices, differential calculus and integral calculus with applications to the management of production systems are included. 2 sem. hrs.

**MBA 501. MANAGERIAL ACCOUNTING:** Basic coverage of managerial accounting practices and techniques and of the concepts, principles and practices for external reporting of financial data from the user's point of view. Prerequisite: MBA 500B or equivalent. 3 sem. hrs.

**MBA 504. TAX FACTORS IN BUSINESS DECISION:** A review of the provisions of the Federal Income Tax Code and tax laws on business decisions, including selection of the legal form of the business entity, corporate reorganization, acquisitions, mergers, employee compensation and benefits, alternative methods of capital gains and ordinary income and interactions of income, estate and gift taxes. Prerequisite: MBA 501 or equivalent. 3 sem. hrs.

**MBA 505. CONTEMPORARY ACCOUNTING ISSUES:** Seminar covering important and contemporary financial accounting issues. The business and financial situations which underlie accounting problems and controversies; alternative accounting techniques which are accepted or proposed; the consequences of various accounting practices. Prerequisite: MBA 501 or equivalent. 3 sem. hrs.

**MBA 510. QUANTITATIVE METHODS OF BUSINESS DECISIONS:** Development of quantitative models applicable in organizational decision making. These models include classical optimization, linear programming, integer programming, decision theory, simulation, queuing theory, dynamic programming, Markov processes and advanced topics in statistics. Includes computer applications. Prerequisite: MBA 500E or equivalent and MBA 500G or equivalent and MBA 500I or equivalent. 3 sem. hrs.

**MBA 520. MANAGERIAL FINANCE:** Study of the theories, practices, instruments and markets relevant to financial management of business organizations. Emphasis is on analysis and decision-making with regard to the acquisition, employment and financing of business assets consistent with organizational objectives. Prerequisite: MBA 500F or equivalent and MBA 501. 3 sem. hrs.

**MBA 521. PROBLEMS IN MANAGERIAL FINANCE:** In-depth application of financial principles to selected areas. Topics vary. Emphasis may be on working capital management; capital budgeting; cost of capital; the capital asset pricing model; international finance; ratio analysis; or others. Prerequisite: MBA 520. 3 sem. hrs.

**MBA 525. INVESTMENTS AND FINANCIAL MARKETS:** A study of investment principles and techniques used by both individual and institutional investors. Topics include bond and stock markets, security valuation methods, portfolio theory and management and investment institutions. Prerequisite: MBA 501 or MBA 520 or instructor's permission. 3 sem. hrs.

**MBA 526. INTERNATIONAL FINANCIAL MANAGEMENT:** Integrates the international monetary environment with the multinational business firm and its operations. The course covers the analysis of balance of international payments and exchange rate determination. Specific international financial management topics include export-import financing, foreign direct investment, foreign exchange risk management, financial controls and international capital budgeting. Prerequisite: MBA 520. 3 sem. hrs.

**MBA 530. MARKETING MANAGEMENT:** Examination of concepts, theories, facts and analytical procedures associated with marketing management. Market analysis; consumer behavior, competitor analysis, marketing information systems, marketing research and demand forecasting; marketing strategy; product, distribution, promotion and pricing decisions. Prerequisite: MBA 500C or equivalent. 3 sem. hrs.

**MBA 535. RESEARCH FOR MARKETING DECISIONS:** Integrated overview of the functional areas of research design, data collection, data analysis and interpretation of findings, within the context of decision making for Marketing. Prerequisite: MBA 530. 3 sem. hrs.

**MBA 536. SEMINAR IN INTERNATIONAL MARKET ANALYSIS:** Integration of concepts, theories and analytical procedures associated with market analysis to international markets. Topics include international trade concepts, analysis of export potential, analysis of the world marketing environment and international marketing management. Prerequisite: MBA 530. 3 sem. hrs.

**MBA 537. LOGISTICS MANAGEMENT:** Examination of logistics systems using integrated management of transportation, warehousing, materials handling, packaging, inventory control, order processing and facility location. Examples include industrial, commercial and service organizations with various channel arrangements. Prerequisite: MBA 530. 3 sem. hrs.

**MBA 540. MANAGERIAL ECONOMICS:** Examination of the scope and method of managerial methods in demand analysis, forecasting demand, short-run cost analysis; long-run costs and production functions; pricing, selected topics in pricing; risk and uncertainty. Analysis of macro-economic trends and their impact on the firm. Prerequisite: MBA 500A or equivalent, MBA 500E or equivalent, MBA 500G or equivalent and MBA 500I or equivalent. 3 sem. hrs.

**MBA 541. LABOR RELATIONS AND LABOR ECONOMICS:** Collective bargaining, wage determination, structure and operation of labor markets, direction of the labor movement, theories of industrial peace and conflict; current problems and trends in labor relations. Prerequisite: MBA 500A or equivalent. 3 sem. hrs.

**MBA 545. NATIONAL ECONOMIC POLICY AND FORECASTING:** A study of economic aggregates including employment, prices and income. Contemporary policy issues such as stagflation, wage and price controls, structural unemployment. Methods of forecasting economic aggregates. Prerequisite: MBA 500A or equivalent.

*3 sem. hrs.*

**MBA 550. GOVERNMENT AND BUSINESS:** Analysis of government regulations and their impact on business. An examination of how business organizations when producing goods and services operate within the financial, legal and social constraints resulting from governmental activity. Prerequisite: MBA 500D or equivalent.

*3 sem. hrs.*

**MBA 560. OPERATIONS MANAGEMENT:** An analysis of the management task of allocating the resources of plant, equipment, time and personnel skills in directing and controlling an operation. Topics include plant location, layout, inventory management, scheduling, quality control, waiting line analysis, production standards and others. The subject is approached by viewing an operation that combines these factors and elements into a system. Includes computer applications. Prerequisite: MBA 510.

*3 sem. hrs.*

**MBA 563. MANAGEMENT INFORMATION SYSTEMS:** The course covers the basic concepts of general systems theory and computer systems. These concepts are applied to computer-based information systems. The issues involved in the management of information systems are addressed through discussion and analysis of extended MIS cases. Prerequisites: MBA 500D, and MBA 500E.

*3 sem. hrs.*

**MBA 571. ORGANIZATIONS AND THEIR ENVIRONMENTS:** A study of the social, cultural, political and legal environments of organizations both profit and non-profit and of their impact on management at all levels. Emphasis is given to resultant problems and their resolution to include ethical considerations in the policy decision process. Prerequisite: MBA 500D or equivalent.

*3 sem. hrs.*

**MBA 575. SEMINAR IN PERSONNEL AND INDUSTRIAL RELATIONS:** A study of the personnel and industrial relations function. An examination of employment planning and practices to include the legal framework and regulatory guidelines. Readings, exploratory research, experimental exercises, films and seminar discussions are the primary teaching methods. Prerequisite: MBA 500D or equivalent.

*3 sem. hrs.*

**MBA 580. ORGANIZATION THEORY:** Analysis of the parts of an organization and the processes which connect and integrate them into a functioning entity in pursuit of maximum growth, stability, and ultimately survival. Emphasis is on modern organization theory. Extensive reading, research and seminar discussions are integral aspects of the course. Prerequisite: MBA 500D or equivalent.

*3 sem. hrs.*

**MBA 583. ADVANCED MANAGEMENT SEMINAR:** An in-depth analysis of important areas of management in which theory, research, and practice have progressed significantly. Topics vary. Examples include organizational development, systems management, executive decision-making, control techniques, and human resource management. Prerequisite: MBA 500D or equivalent.

*3 sem. hrs.*

**MBA 584. INTERNATIONAL BUSINESS POLICY:** Changes in the structure, organization, and policies of multi-national business firms and international trade in general. Their implications relative to the composition of exports, international marketing processes, terms of trade and determinants of payments and exchange-rate movements. Prerequisite: MBA 500D or equivalent.

*3 sem. hrs.*

**MBA 585. ORGANIZATIONAL SYSTEMS:** Focuses on the fundamentals of the dynamic processes that characterize systems. Emphasis is on the structure, processes and behavior of business, governmental, educational, military and other kinds of organizations. Case studies are used and group reports presented. Prerequisite: MBA 500D or equivalent. *3 sem. hrs.*

**MBA 586. INTERPERSONAL DYNAMICS IN ORGANIZATIONS:** The nature, types, formation and characteristics of groups that interact within an organization. Communication networks and organizational factors that influence interpersonal relationships and conflicts are discussed in depth. Lectures, outside reading, research, cases and group exercises. Prerequisite: MBA 500D or equivalent. *3 sem. hrs.*

**MBA 587. ORGANIZATIONAL BEHAVIOR:** Individual behavior and interrelationships in an organization and management practices to promote organizational effectiveness. Basic psychological concepts such as motivation, leadership and the application of techniques for individual and organization growth. Lectures, reading, cases and problem-solving through group exercises. Prerequisite: MBA 500D or equivalent. *3 sem. hrs.*

**MBA 588. SEMINAR IN CURRENT ORGANIZATIONAL BEHAVIOR TOPICS:** Analysis and interpretation of behavioral research studies as applied to management. Coverage of problem areas such as interpersonal conflict resolution, resistance to change, managerial development, organizational growth, effects of technology, emergence of new control systems. Role playing, small group exercises and applications. Prerequisite: MBA 586 or MBA 587. *3 sem. hrs.*

**MBA 589. SEMINAR IN STRATEGIC PLANNING:** Study of the Strategic Management process through reading, discussion and lectures. Included are: theoretical foundations, behavioral factors, strategic problem solving and decision making and formal systems planning, implementation and control. Prerequisite: 21 semester hours of core courses. *3 sem. hrs.*

**MBA 590. BUSINESS POLICIES AND ADMINISTRATIVE MANAGEMENT:** The integration of theory and practice in the development of business policies. Emphasis is on the problems of executive management, decision-making and administrative action. Prerequisite: 21 semester hours of core courses. *3 sem. hrs.*

**MBA 591. BUSINESS SIMULATION:** An integrative learning experience based on knowledge of the functional business areas and of the business environment. The course uses a computer simulation to examine the effect of students' management decisions over time. Lectures and small groups for decision-making reporting. Prerequisite: 21 semester hours of core courses. *3 sem. hrs.*

**MBA 595. INDIVIDUAL RESEARCH:** Individual research in subjects encompassed by the M.B.A. curriculum under the guidance and direction of a faculty member. Research may be undertaken upon completion of 15 hours of core courses. *1-3 sem. hrs.*

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# IX SCHOOL OF EDUCATION

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Ellis A Joseph, Dean  
Jerrold D. Hopfengardner, Associate Dean

The general objectives of the School of Education coincide with the purposes of the University. Accepting the Christian world-view as its distinctive orientation and seeking to foster principles and values consonant with a caring attitude, the School assists in carrying out the four essential tasks of the University: teaching, research, serving as a critic of society, and rendering public service. The particular objective of the School of Education is to develop those special capabilities of students which enable them to become effective practitioners in the field of professional education.

The School of Education programs leading to graduate degrees are designed primarily to meet the following purposes:

1. To develop advanced proficiency in elementary and secondary school teachers who have completed recognized Baccalaureate teacher education programs.
2. To enable individuals to qualify for certification as principals, supervisors, and superintendents.
3. To prepare qualified school counselors, school psychologists, and counselors for social agencies.
4. To develop personnel for student services in higher education.
5. To prepare educational research specialists.
6. To enable students with nonprofessional education Baccalaureate degrees and above-average academic records to gain teacher certification.

The Master of Science in Education is the degree to which most of the graduate programs lead. The Master of Science in Teaching is also offered. The ED.S. degree in Educational Leadership may be earned. The awarding of these degrees means that the candidates have completed programs of graduate work designed to give them the following characteristics:

1. Broader knowledge of an advanced nature of the tested psychological and philosophical theories of education.
2. Essential understandings and skills necessary for intelligent consumption of educational research.
3. More extensive knowledge and skill involved in teaching, or in school counseling, or in school administration.
4. Ability to contribute toward the improvement of school conditions and/or professional practice through consumer research.



The University of Dayton has traditionally given special consideration to those training for the education professions. In the spirit of this tradition, the Graduate School of Education changed from the semester-hour to the quarter-hour credit unit effective June 17, 1974. The quarter-hour credit system, within a trimester calendar, permits professional employed graduate students to begin and to finish courses and other program work at times and dates congruent with those of their other responsibilities. Students are encouraged to consult program directors and course schedules each term for details.

## **AUTHORIZATION**

The University of Dayton's offerings in graduate work leading to the Master of Science in Education have the official approval of the State of Ohio Department of Education, and of the National Council for the Accreditation of Teacher Education.



Ellis A. Joseph, Dean.  
*School of Education.*

## **ASSISTANTSHIPS**

The School of Education offers a limited number of assistantships. For information about these assistantships see the respective chairpersons of the departments in which the assistantships are sought.

## **ADMISSION**

### **General Requirements**

The School of Education accepts into its graduate programs applicants who can present undergraduate records showing them capable of meeting the standards of graduate work. An applicant (1) must hold a teacher's certificate and a Bachelor's degree from an accredited institution (at least state accreditation), unless specific exceptions are granted by the Dean of the School of Education; and (2) must have attained an undergraduate conditional status,

pending the successful completion of approximately 15 to 18 quarter hours. All applicants must submit three references from qualified professionals in appropriate fields.

An applicant who is not a graduate of the University of Dayton must submit complete official transcripts of all previous college studies. These transcripts should be sent directly to the Office for Graduate Studies, from the degree-granting institution.

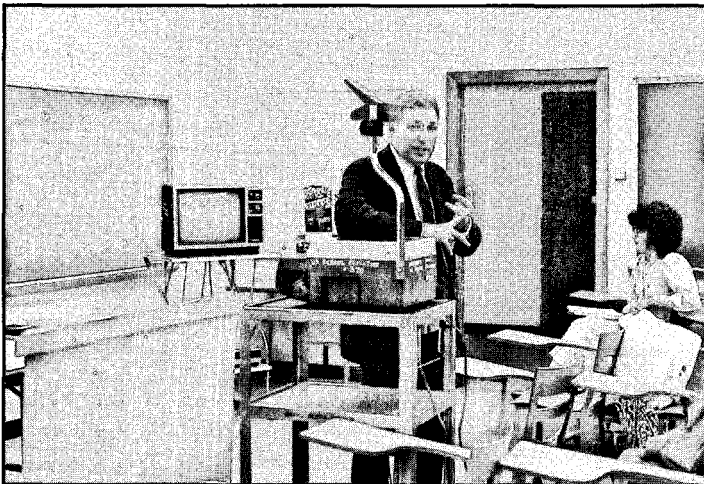
Admission to graduate study on regular, special, or conditional status does not imply admission to candidacy for a degree.

### **Special Requirements: School Psychologist Program**

Besides meeting the above requirements, an applicant for the School Psychologist Program must receive a favorable recommendation from the Department of Counselor Education and Human Services. In deciding whether or not to make such a recommendation, the Faculty will take into account the applicant's physical and mental health, personality adjustment, and general character as determined by reference appraisals and other appropriate requirements which are in accordance with department policy.

### **Special Requirements: Master of Science in Teaching**

The program leading to the Master of Science in Teaching is restricted to the student who: (1) holds a Bachelor's degree; (2) has an undergraduate cumulative point average of 2.5 or higher (on a 4.0 scale); (3) does not have a teaching certificate; (4) desires certification to teach; (5) has a major teaching field which can be serviced by graduate courses offered at the University of Dayton.



*Jerrold D. Hopfengardner, Associate Dean.  
School of Education.*

## MASTER'S DEGREE PROGRAMS

### Advising

The graduate student has access to three sources for official advisement:

1. The Office of the Dean of the School of Education serves as an initial advisory source for students regardless of the program they are following.
2. The chairpersons of the departments or the coordinators of the programs act as special advisors to students enrolled in programs under their jurisdiction. They counsel them with regard to their professional objectives, their selection of courses, and the options that are available in their programs. In the case of specialized programs within the department they may delegate these functions to the program directors. The student is urged to confer with the chairperson and/or director in the first term of enrollment.
3. The project or internship advisor, chosen by mutual agreement of the student, the departmental chairperson, and the prospective advisor, guides the student to the successful completion of the research project or the approved internship.

### Candidacy

A student becomes a candidate for the Master's degree in Education if the cumulative point average for graduate work and the reference appraisals are judged to be acceptable. The most important consideration in the admission of a student to candidacy is the graduate work to date. Evidence of being able to meet all the graduation requirements must be given. Applicants who are deemed unqualified at this point will be advised to discontinue their programs.

Students should apply for admission to candidacy after the completion of approximately 20 quarter hours of graduate work, including at least two courses in the area of concentration and a research course required by their department. Application is made by filing the official candidacy form with the dean. The applicants should be sure that all the required credentials are in order.

### Academic Standing

In order to qualify for graduation, a student must achieve a grade point average of at least 3.0 (B) in all work undertaken toward the degree.

### Research Project or Internship Report

At least ten days before graduation, the student must submit, according to the requirements of the specific program, three acceptable copies of the research project and two copies of an abstract of the project; OR one acceptable copy of a formal report on the internship experience; OR, in the case of Plan C in the School Counseling program, one copy of the research paper.

### **Departmental Conference**

During the final term preceding graduation, the student must participate in a formal "Departmental Conference" as arranged by the appropriate departmental chairperson.

### **Employed Graduate Students**

The maximum course load permitted for any graduate student who is fully employed is nine quarter hours for the first and second terms and for the first half of the third term. Program directors may counsel fully-employed students to take less than nine hours. Adjustments to this policy are made on an individual basis in the cases of those not employed or partly-employed.

### **Workshop Credit**

No more than 8 quarter hours of workshop credit may be applied toward a degree.

### **Registration Dates For Courses At Off-Campus Sites**

Students taking graduate courses at off-campus sites of the School of Education should note that registration dates for courses at these sites are different from the registration date for courses taken at the University of Dayton campus.

All graduate credits in the School of Education are counted in quarter hours; conversion of these is made into semester hours when required.

## **JOINT PROGRAMS**

The Schools of Education and Law offer mature students the opportunity to earn the Master of Science in Education and the Juris Doctor in three to three and one half calendar years. Prospective students must satisfy admission requirements for graduate work in the School of Education and for acceptance in the School of Law. See admission requirements of the Schools of Education and Law.

The School of Education in conjunction with the Department of Mathematics offers a Master of Science in Teaching degree with a concentration in Mathematics. For information see the director of graduate studies in Education, or chairperson, Mathematics department.

The School of Education and the College of Education, Wright State University, offer a two calendar year program leading to the Educational Specialist degree in Education Leadership. See description in appropriate section.

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Department of  
**COUNSELOR EDUCATION AND  
HUMAN SERVICES (EDC)**

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Eugene K. Moulin, Chairperson of the Department

The goals of the Department of Counselor Education and Human Services are:

1. To prepare elementary school counselors, secondary school counselors, student service personnel in higher education, school psychologists, visiting teachers, directors of pupil personnel services, guidance supervisors for state, county and local systems, and counselors for community and other agency settings.
2. To provide teachers and other helping professionals with specific in-service course credit offerings designed to build skills and develop understandings relative to identified professional functions. These two missions are conducted at the University of Dayton campus, Steubenville, Lima, Springfield, Piqua, Sidney, Carlisle, Kettering, Jefferson Township, Beavercreek, Washington Court House, Bellefontaine, Valley View, Columbus, Rio Grande, and other sites by invitation of local authorities.

The Department offers six emphasis at the graduate level:

**School Counseling**  
**Visiting Teacher Services**  
**Child/Youth Development**  
**College Student Personnel**  
**Social Agencies Counseling**  
**School Psychology**

Courses in counseling, personality, and vocational theories; principles and techniques of pupil services; individual and group counseling; psychometrics; individual personality evaluation; educational, occupational and social information; community resources; test administration and interpretation; organization, administration and program development of pupil and student services; evaluation of educational and organizational systems; and research methodology and statistics are applicable to departmental emphases. In addition, selected courses in behavioral and social science and other related disciplines lead to provisional certification as a school counselor, visiting teacher, and school psychologist by the various departments of education.

The graduate program seeks to:

- (1) build skills and develop human service specialists in assisting children, youth, and adults from varying socio-economic backgrounds;
- (2) develop a method for conceptualizing the settings in which these skills are to be implemented;
- (3) allow the student to test and develop capacities for implementing these skills in practicum and internship experiences within new kinds of co-operating school and community agencies.

1. Students are assisted in developing skills in counseling to conduct group process sessions with clients of various ages and learn when and how to utilize consultative services and social services available to children, youth, and parents.

Graduate students are assisted in integrating essential understandings out of which these skills and techniques can continue to develop beyond their formal training. These understandings include those associated with the impact of family, poverty, and institutions on child and adolescent development, the nature of the learning process, the impact of the specific learning setting upon learning efficiency and upon the total development of the student. The department thus provides opportunity for activities to clarify values, increase self-awareness, and improve interpersonal skills.

2. Another set of activities is directed toward assisting graduate students to develop skills in examining school, community, government, and other institutional settings and in building models of those settings with particular emphasis upon factors significantly affecting children, youth, teachers, administrators, and other professionals.
3. The unique perceptions and applications of techniques are the concern of the practical internships. The student's own style of implementation will be the focus of these activities, and through individualized supervision each student's system of performing many diverse professional duties will be tested.

## ADMISSION REQUIREMENTS

In addition to the general requirements of the School of Education, the Department of Counselor Education and Human Services requires that an applicant who has an undergraduate quality-point average below 2.5 of a possible 4.0 provide additional documentation in the form of an essay describing educational and other relevant achievements, and occupational goals.

## PROGRAM REQUIREMENTS

There are three plans for fulfilling the requirements of the Master of Science in Education in the Department of Counselor Education and Human Services:

Plan A: 45 quarter hours; Research Project

Plan B: 45 quarter hours; reports, Field Experience course

Plan C: 45 quarter hours; paper, Educational Research Methodology course

## SCHOOL COUNSELING

### *Core Courses*

	<i>Quarter Hours</i>
EDT 502 Philosophical Studies in Education .....	4
EDT 503 Educational Research Methodology	
OR    (Required Plans A and C) .....	4
EDA 513 Evaluation of Educational and Organizational Systems .....	4

**Concentration Courses**

One or more courses from each of the following seven areas (minimum of 37 quarter hours):

<b>1. Guidance</b>		
EDC 522	Introduction to Guidance .....	3
EDC 539	Administration of Pupil Personnel Services .....	3
EDC 580	Guidance in the Elementary School .....	3
<b>2. Human Development</b>		
EDC 530	Psychology of Individual Differences.....	4
EDC 531	Dynamics of Personality .....	4
EDC 532	Learning Disabilities (Required) .....	4
EDT 501	Learning Theory and Education .....	4
EDT 504	Human Development and Education.....	4
<b>3. Individual and Group Appraisal</b>		
EDC 533	Psychometrics .....	3
EDC 534	Individual Psychological Evaluation of Exceptional Children .....	3
EDC 535	Test Interpretations and Case Studies .....	3
<b>4. Counseling</b>		
EDC 543	Counseling Theories and Techniques .....	4
EDC 581	Techniques in Child Counseling .....	4
<b>5. Group Methods</b>		
EDC 583	Group Process.....	4
<b>6. Guidance Information</b>		
EDC 524	Educational and Occupational Information .....	3
EDC 525	Community Resources .....	3
EDC 528	Career Education .....	3
<b>7. Practicum</b>		
EDC 545	Practicum: Counseling Techniques .....	5
<b>Other Work</b>		
EDI 591	Research Project (Plan A) .....	4
EDC 599	Field Experiences in Personnel Services (Plan B) .....	4
EDC 574	Independent Studies in Personnel Services (Elective) ..	1-6
EDC 578	Consultation in the Schools.....	3
EDC 602	Counseling Seminars (Elective) .....	1-6
EDC 635	Family Counseling (Elective) .....	4
EDC 673	Counseling Ethnic Minorities .....	3

**VISITING TEACHER SERVICES**

<b>Core Courses</b>	<i>Quarter Hours</i>	
EDT 502	Philosophical Studies in Education .....	4
EDT 503	Educational Research Methodology	
OR	(Required Plans A and C).....	4
EDA 513	Evaluation of Educational and Organizational Systems... 4	

**Concentration Courses**

One or more courses from each of the following seven areas (minimum 37 quarter hours):

1. **Human Growth and Development**
  - EDC 531 Dynamics of Personality . . . . . 4
  - EDT 504 Human Development and Education . . . . . 4
2. **Psychology of Exceptional Children**
  - EDC 530 Psychology of Individual Differences . . . . . 4
  - EDC 532 Learning Disabilities (Required) . . . . . 4
3. **Educational Psychology**
  - EDT 501 Learning Theory and Education . . . . . 4
4. **Testing and Measurement**
  - EDC 533 Psychometrics . . . . . 3
  - EDC 534 Individual Psychological Evaluation  
of Exceptional Children . . . . . 3
  - EDC 535 Test Interpretations and Case Studies . . . . . 3
5. **Pupil Personnel Services**
  - EDC 522 Introduction to Guidance . . . . . 3
  - EDC 539 Administration of Pupil Personnel Services . . . . . 3
6. **Counseling Principles**
  - EDC 543 Counseling Theories and Techniques . . . . . 4
  - EDC 581 Techniques in Child Counseling . . . . . 4
7. **Ohio School Law, Family Counseling, Community  
Organizations, or Juvenile Delinquency**
  - EDA 515 School Law . . . . . 4
  - EDT 570 School and Society . . . . . 4
  - EDC 525 Community Resources . . . . . 3
  - EDC 635 Family Counseling . . . . . 4

**Other Work**

- EDC 545 Practicum: Counseling Techniques  
(Required Plans A, B, & C) . . . . . 5
- EDC 599 Field Experiences in Personnel Services (Plan B) . . . . . 4
- OR
- EDC 653 Internship: Visiting Teaching (Plan B) . . . . . 8
- EDC 574 Independent Studies in Personnel Services (Elective) . . 1-6
- EDC 578 Consultation in the Schools (Elective) . . . . . 3
- EDC 602 Counseling Seminars (Elective) . . . . . 1-6
- EDC 673 Counseling Ethnic Minorities (Elective) . . . . . 3

**CHILD/YOUTH DEVELOPMENT**

General Requirements: 45 quarter hours; reports, Field Experiences course.

**Core Courses****Quarter Hours**

- EDT 502 Philosophical Studies in Education . . . . . 4



EDA 513 Evaluation of Educational and Organizational Systems... 4

**Concentration Courses:** One course from each of the six areas.

**Electives:** Other courses in six areas and/or electives below.

1. EDC 530 Psychology of Individual Differences ..... 4
- EDT 501 Learning Theory and Education ..... 4
- EDC 531 Dynamics of Personality ..... 4
- EDT 504 Human Development in Education ..... 4
2. EDC 532 Learning Disabilities ..... 4
- EDC 534 Individual Psychological Evaluation of  
Exceptional Children ..... 3
- EDC 602 Seminar: Counseling the Parents of Handicapped ..... 1-3
3. EDC 635 Family Counseling ..... 4
- EDC 602 Seminar: Counseling Children of Divorce..... 1-3
- EDC 602 Seminar: Counseling Single Parent Family ..... 1-3
4. EDC 583 Group Process..... 4
5. EDC 543 Counseling Theories and Techniques ..... 4
- EDC 581 Techniques in Child Counseling..... 4
6. EDC 599 Field Experiences in Guidance ..... 4

**Other Electives**

- EDC 522 Introduction to Guidance ..... 3
- EDC 524 Educational & Occupational Information ..... 3
- EDC 525 Community Resources ..... 3
- EDC 528 Career Education ..... 3
- EDC 533 Psychometrics ..... 3
- EDC 535 Test Interpretation & Case Studies ..... 3
- EDC 539 Administration of Pupil Personnel Services ..... 3
- EDC 545 Practicum: Counseling Techniques..... 5
- EDC 574 Independent Studies in Personnel Services ..... 1-6
- EDC 578 Consultation in the Schools..... 3
- EDC 580 Guidance in the Elementary School ..... 3
- EDC 602 Seminars (See Social Agencies Counseling Program) ... 1-6
- EDC 673 Counseling Ethnic Minorities ..... 3

**COLLEGE STUDENT PERSONNEL**

General Requirements: 45 quarter hours; reports, services, internships.

**Core Courses**

**Quarter Hours**

- EDT 502 Philosophical Studies in Education ..... 4
- EDA 513 Evaluation of Educational and Organizational Systems... 4
- OR
- EDT 503 Educational Research Methodology ..... 4
- EDT 504 Human Development and Education..... 4
- OR
- EDC 531 Dynamics of Personality ..... 4

**Concentration Courses**

EDC 543	Counseling Theories and Techniques .....	4
EDC 545	Practicum: Counseling Techniques .....	5
EDC 551	Student Personnel Services in Higher Education .....	3
EDC 552	Seminar: College Personnel Service Problems.....	2
EDC 553	Internship in College Personnel Services .....	9
EDC 583	Group Process.....	4
EDT 511	History of Higher Education in the United States .....	4

**Electives**

EDC 524	Educational and Occupational Information .....	3
EDC 525	Human Resources .....	3
EDC 533	Psychometrics .....	3
EDC 673	Counseling Ethnic Minorities .....	3
EDC 602	Counseling Seminars .....	1-6
CPS 502	Computing — General Survey .....	(sem. hrs.) 3
CPS 504	Business Application of Computers .....	(sem. hrs.) 3

Internships in three College Student Personnel services are required and must be taken during the regular office hours of the services. Some courses may be taken during the summer, but this is not a summer program.

**SOCIAL AGENCIES COUNSELING**

General Requirements: 45 quarter hours; reports, Field Experiences course.

**Core Courses***Quarter Hours*

EDT 502	Philosophical Studies in Education .....	4
EDA 513	Evaluation of Educational & Organizational Systems.....	4
	OR	
EDT 503	Educational Research Methodology .....	4

**Concentration Courses**

EDC 525	Community Resources .....	3
	OR	
EDC 524	Educational & Occupational Information .....	3
EDC 583	Group Process.....	4
EDC 543	Counseling Theories & Techniques .....	4
EDC 598	Field Experiences in Social Agencies .....	4
EDC 545	Practicum: Counseling Techniques .....	5

**Electives, EXCEPTIONAL CHILDREN COUNSELING**

EDC 532	Learning Disabilities .....	4
EDC 534	Individual Psychological Evaluation of Exceptional Children .....	3
EDC 602	Seminar: Counseling Parents of the Handicapped .....	1-3
EDT 580	Psychology and Education of the Retarded .....	4
EDT 587	Career Development — Special Education .....	4
EDT 612	Teaching the Gifted and Talented .....	4

**Electives, BUSINESS AND INDUSTRIAL COUNSELING**

MBA 500D	Graduate Seminar in Management . . . . .	(sem. hrs.) 3
MBA 586	Interpersonal Dynamics in Organizations . . . .	(sem. hrs.) 3
MBA 587	Organizational Behavior . . . . .	(sem. hrs.) 3
MBA 575	Seminar in Personnel and Industrial Relations	(sem. hrs.) 3

**Note:** MBA 500D is a requirement for MBA 586, MBA 587 and MBA 575.

**Electives, GERIATRIC COUNSELING**

EDC 602	Seminar: Death, Dying: Grief Process . . . . .	1-3
EDC 602	Seminar: Dynamics of Gerontological Counseling . . . .	1-3
REL 575	Pastoral Counseling . . . . .	(sem. hrs.) 3

**Electives, FAMILY COUNSELING**

EDC 581	Techniques in Child Counseling . . . . .	4
EDC 602	Seminar: Child Abuse . . . . .	1-3
EDC 602	Seminar: Counseling Single Parent Families . . . . .	1-3
EDC 602	Seminar: Counseling Children of Divorce . . . . .	1-3
EDC 635	Family Counseling . . . . .	4
EDC 602	Seminar: Runaways . . . . .	1-3

**Electives, MENTAL HEALTH COUNSELING**

EDC 531	Dynamics of Personality . . . . .	4
EDC 635	Family Counseling . . . . .	4
EDC 673	Counseling Ethnic Minorities . . . . .	3
EDC 602	Seminar: Drug Counseling . . . . .	1-3
EDC 602	Seminar: Alcohol Counseling . . . . .	1-3
EDC 602	Seminar: Stress . . . . .	1-3
EDC 602	Seminar: Counseling Single Parent Families . . . . .	1-3
EDC 602	Seminar: Child Abuse . . . . .	1-3
EDC 602	Seminar: Suicide Prevention . . . . .	1-3
EDC 602	Seminar: Counseling Children of Divorce . . . . .	1-3

**Electives, CAREER COUNSELING**

EDC 524	Educational & Occupational Information . . . . .	3
EDC 528	Career Education . . . . .	3
EDC 602	Seminar: Computer Literacy for Counselors . . . . .	1-3
EDT 587	Career Development — Special Education . . . . .	4
EDC 655	Career Guidance Institute . . . . .	3
EDC 673	Counseling Ethnic Minorities . . . . .	3

**Electives, JUVENILE DELINQUENT COUNSELING**

EDC 531	Dynamics of Personality . . . . .	4
EDC 581	Techniques in Child Counseling . . . . .	4
EDC 673	Counseling Ethnic Minorities . . . . .	3
EDC 602	Seminar: Counseling Single Parent Families . . . . .	1-3
EDC 602	Seminar: Counseling Children of Divorce . . . . .	1-3
EDC 602	Seminar: Runaways . . . . .	1-3
EDC 602	Seminar: Alcohol Counseling . . . . .	1-3

EDC 602	Seminar: Drug Counseling .....	1-3
EDC 635	Family Counseling .....	4
EDT 504	Human Development and Education.....	4
EDA 515	School Law .....	4

**Other Electives**

EDC 530	Psychology of Individual Differences.....	4
EDC 531	Dynamics of Personality .....	4
EDC 535	Test Interpretations & Case Studies .....	3
EDC 574	Independent Studies in Personnel Services .....	1-6
EDC 602	Seminar: Computer Literacy for Counselors.....	1-3
EDC 673	Counseling Ethnic Minorities .....	3
EDC 581	Techniques of Child Counseling .....	4

*Note: You may choose electives from one or several areas above.*

**SCHOOL PSYCHOLOGY****I. Psychological Foundations***Quarter Hours***A. Human Learning**

- |            |                                     |   |
|------------|-------------------------------------|---|
| 1. EDT 501 | Learning Theory and Education ..... | 4 |
|            | OR                                  |   |
| PSY 522    | Advanced Cognitive Processes .....  | 4 |

**B. Child and Adolescent Development**

(Normal and Abnormal)

- |            |   |   |
|------------|---|---|
| 2. EDT 504 | Human Development and Education .....         | 4 |
|            | OR  |   |
| PSY 573    | Developmental Psychology .....                | 4 |
| 3. EDC 531 | Dynamics of Personality .....                 | 4 |
|            | OR  |   |
| PSY 555    | Theory of Personality and Psychotherapy ..... | 4 |

**C. Human Exceptionality and Cultural Diversity**

- |            |  |   |
|------------|--|---|
| 4. EDT 590 | Survey of Students With Exceptionalities ..... | 4 |
|------------|--|---|

**II. Educational Foundations****D. Organization and Operation of the Schools**

- |            |  |   |
|------------|--|---|
| 5. EDT 502 | Philosophical Studies in Education ..... | 4 |
| 6. EDA 506 | School Administration .....              | 4 |

**E. Instructional and Remedial Techniques**

- |            |   |   |
|------------|---|---|
| 7. EDT 593 | Education of Students with<br>Learning and Behavior Disorders ..... | 4 |
|            | OR  |   |
| EDC 532    | Learning Disabilities .....   | 4 |

**F. Special Education (See EDT 590 and EDT 593, above)**

**III. Psycho-educational Methods - Evaluation** *Quarter Hours***G. Assessment**

- |             |  |   |
|-------------|--|---|
| 8. EDC 533  | Psychometrics .....  | 3 |
| 9. EDC 576  | Child and Adolescent Personality Evaluation - I ..                   | 4 |
| 10. EDC 534 | Individual Psychological Evaluation of<br>Exceptional Children ..... | 4 |
| 11. EDC 577 | Child and Adolescent Personality Evaluation - II ..                  | 4 |

**H. Research Design and Statistics**

- |             |  |   |
|-------------|--|---|
| 12. EDT 503 | Educational Research Methodology ..... | 4 |
|             | OR                                     |   |
| EDT 803     | Research I .....                       | 4 |
| 13. EDT 638 | Educational Statistics .....           | 4 |

**IV. Psycho-educational Methods - Intervention****I. Consultation**

- |             |  |   |
|-------------|--|---|
| 14. EDC 578 | Consultation in the Schools (Includes 1 hr. seminar) | 4 |
| 15. EDA 812 | Program & Staff Development & Evaluation .....       | 4 |

**J. Behavior Modification**

- |             |  |   |
|-------------|--|---|
| 16. EDT 596 | Classroom Structure and Behavior Management .. | 4 |
|-------------|--|---|

**K. Counseling**

- |             |  |   |
|-------------|--|---|
| 17. EDC 543 | Counseling Theories and Techniques ..... | 4 |
| 18. EDC 545 | Practicum: Counseling Techniques .....   | 5 |

**L. Organization and Administration of Pupil Services**

- |             |  |   |
|-------------|--|---|
| 19. EDC 539 | Administration of Pupil Personnel Services ..... | 4 |
|-------------|--|---|

**V. Professional School Psychology****M. Professional Issues, Standards and Ethics in  
School Psychology**

- |             |  |   |
|-------------|--|---|
| 20. EDC 572 | Role and Function of School Psychologist ..... | 4 |
|             | (Including research paper)                     |   |

**VI. Field Placement****N. Internship**

- |             |   |   |
|-------------|---|---|
| 21. EDC 594 | Internship for School Psychologists ..... | 6 |
| 22. EDC 595 | Internship for School Psychologists ..... | 6 |

Total:	91
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**SCHEDULE FOR SCHOOL PSYCHOLOGY COURSEWORK (Part-time)**

**TERM**

		I	II	III-1	III-2	
Y	1	EDT 593 (4) or EDT 638 (4)	EDC 532 (4) EDC 533 (3) EDC 543 (4)	EDT 590 (4) EDT 502 (4)	EDT 503 or EDT 803 (4)	27 hrs.
	2	EDT 504 or PSY 573 (4) EDC 531 (4) or	EDT 501 or PSY 522 (4) PSY 555 (4)	* EDA 506 (4) EDA 539 (3)	EDC 545 (5) EDT 596 (4)	55 hrs.
<b>M.S. IN EDUCATION GRANTED</b>						
A	3	EDC 576 (4) EDC 572 (1) EDC 578 (4)	EDC 534 (4) EDC 572 (1) EDA 812 (4)	EDC 577 (4) EDC 572 (2)	..... .....	4 79 hrs.
	4	EDC 594 (6) Internship	EDC 595 (6) Internship			91 hrs.
<b>Ohio Four-Year Provisional Certificate in School Psychology Earned</b>						

\* Student applies for M.S. candidacy.

**SCHOOL PSYCHOLOGY PROGRAM NOTES**

1. In addition to the admission criteria described elsewhere in this bulletin, applicants will be required to take the G.R.E. and to submit a written statement of interest in and current perception of the role of the school psychologist. Completed application materials must be received by January 31st and will be reviewed during the month of February. Final candidates will be scheduled for an interview during March, with selections to be announced by April 30th.
2. A student must be a certified teach or hold a degree in Psychology to enter this program. Students who do not hold an Ohio Teacher's certificate must also complete four additional hours of course work in school curriculum (EDA 511, EDA 512, or EDT 652), and two hours in directed observation and participation in the school process (EDC 573).
3. In conjunction with EDT 503, and as part of the requirements for EDC 572, each student will write a research paper.
4. Upon successful completion of the first 14 courses (55 hours), the student will be awarded the M.S. degree. (See chart.) The school psychology certificate will not be earned until the successful completion of the remaining 36 hours, including the internship.
5. This program has been developed in accordance with the standards prepared by the National Association of School Psychologists and the laws and regulations governing certification in School Psychology adopted by the State of Ohio.

## COURSES OF INSTRUCTION

EDC 522. INTRODUCTION TO GUIDANCE: Introduction to the scope, aims, and techniques of guidance; introductory treatment of the basic guidance services and how the counselor and the teacher can make efficient use of them. *3 qtr. hrs.*

EDC 524. EDUCATIONAL AND OCCUPATIONAL INFORMATION: Selection, utilization, and evaluation of educational and occupational information materials; familiarization with standard labor market data, current requirements for admission into college curricula, and available sources of placement; printed and personal reference sources in these fields. *3 qtr. hrs.*

EDC 525. COMMUNITY RESOURCES: Familiarization with availability of services in appraisal, guidance; local information and placement (medical, pastoral, social welfare, mental, educational, industrial, labor, commercial, governmental, and recreational agencies). *3 qtr. hrs.*

EDC 528. CAREER EDUCATION: Assistance for teachers, counselors, administrators and social agency personnel in improving their career education functions through a coordinated and concentrated effort of occupational guidance integrated within the total elementary and secondary school curriculum; and in increasing their educational vocational self-awareness and value clarity as they are related to career development. *3 qtr. hrs.*

EDC 530. PSYCHOLOGY OF INDIVIDUAL DIFFERENCES: Nature, extent, and significance of variability; hereditary and cultural influences; theories of intelligence; trait organization; group differences. *4 qtr. hrs.*

EDC 531. DYNAMICS OF PERSONALITY: Personality theory and abnormal psychology are discussed with emphasis on dynamics of personal behavior. *4 qtr. hrs.*

EDC 532. LEARNING DISABILITIES: Etiological, diagnostic, theoretical, and remedial factors and practical application to learning disabilities; procedures for the implementation of Public Law 94-142 and House Bill 455. *4 qtr. hrs.*

EDC 533. PSYCHOMETRICS: Lectures and demonstrations in the principles and application of psychological measurement, with emphasis on standardized group tests of intelligence and scholastic achievement, interest tests, personality tests, etc. Practicum in test selection, use, and interpretation. *4 qtr. hrs.*

EDC 534. INDIVIDUAL PSYCHOLOGICAL EVALUATION OF EXCEPTIONAL CHILDREN: An overview of the various classifications of handicapped children and the role that psycho-educational assessment plays in the classification of such children. Principally for counselors and teachers. Special section in second term for school psychologists provides laboratory training in the use of assessment instruments with handicapped children. *4 qtr. hrs.*

EDC 535. TEST INTERPRETATIONS AND CASE STUDIES: Experience and lecture in case studies: constituents of study; philosophy; criteria for collecting data; observation techniques, analysis through group role devices, client-participatory non-test assessment techniques, tests; principles of writing, evaluative criteria. In testing: test concepts, statistics, analysis, uses, communication, ethics. *3 qtr. hrs.*

EDC 536. CLASSROOM EDUCATION OF PROBLEM CHILDREN: To assist teachers, counselors, and administrators to understand more fully and to improve their function as educators of "children in conflict." Consulting specialists work with participants to explore techniques, approaches, and school and community programs which respond to the academic and personal needs of children with problems. *3 qtr. hrs.*

EDC 539. ADMINISTRATION OF PUPIL PERSONNEL SERVICES: The effective planning, developing, and administering of a totally balanced and co-ordinated program of pupil personnel services. *3 qtr. hrs.*

EDC 543. COUNSELING THEORIES AND TECHNIQUES: Development of skills in counseling through an analysis of five models (relationship, behavioral, social-psychological, reality model, and rational-cognitive) for the behavior change process. An integrated approach for modifying the behavior of children and adults through individual and system change. *4 qtr. hrs.*

EDC 545. PRACTICUM: COUNSELING TECHNIQUES: Supervised experience in counseling. Both group and individualized instruction and supervision. Last course for Master's degree. *5 qtr. hrs.*

EDC 551. PERSONNEL SERVICES IN HIGHER EDUCATION: A study of personnel services in higher education; theory and practice of administration, trends and research. *3 qtr. hrs.*

EDC 552. SEMINAR: COLLEGE PERSONNEL SERVICE PROBLEMS: Problems encountered during the internship and present-day problems of campus life. *2 qtr. hrs.*

EDC 553. INTERNSHIP IN COLLEGE PERSONNEL SERVICES: A three-trimester experience in three college personnel services under the instruction and supervision of staff members of the same services working closely with the coordinator of College Personnel Work. Given in blocks of 3 quarter hours each over three terms. *9 qtr. hrs.*

EDC 572. ROLE AND FUNCTION OF SCHOOL PSYCHOLOGIST: Topics of current significance in the profession of school psychology, with emphasis on ethics, current practice in the field, legislation in school psychology and special education, and professional organizations. Research paper required. *4 qtr. hrs.*

EDC 573. OBSERVATION AND PARTICIPATION IN THE SCHOOL PROCESS: Directed observation of and participation in the usual school process under supervision within the school. Required of all school psychology candidates who do not have teaching certificates. *2-6 qtr. hrs.*

EDC 574. INDEPENDENT STUDIES IN PERSONNEL SERVICES: Independent study undertaken with permission of the chairperson. *1-6 qtr. hrs.*

EDC 576. CHILD AND ADOLESCENT PERSONALITY ASSESSMENT I: Administration and interpretation of individual tests of cognitive ability used in the multifaceted evaluation of children and adolescents. Laboratory experience. (By approval.) *4 qtr. hrs.*



EDC 577. CHILD AND ADOLESCENT PERSONALITY ASSESSMENT II: Use and interpretation of projective tests, behavior ratings, and interviews in the multifaceted assessment of children and adolescents. Laboratory experience. (By approval.)

4 qtr. hrs.

EDC 578. CONSULTATION IN THE SCHOOLS: The role of the consultant is examined with emphasis on acquiring effective skills, designed to enable school psychologists, counselors, special education teachers, supervisors, and administrators to assist classroom teachers to improve their teaching effectiveness.

3-4 qtr. hrs.

EDC 580. GUIDANCE IN THE ELEMENTARY SCHOOL: Concepts and techniques for teachers and counselors discussed within the framework of the essential guidance services with attention to characteristics of elementary schools. Emphasis on today's child; child problem situations; theories for understanding child behavior; basic guidance services; roles and responsibilities of personnel; cross-cultural counseling; consulting with parents, teachers, administrators; record analysis, observation, pupil-participating assessment techniques; information dissemination and career education.

3 qtr. hrs.

EDC 581. TECHNIQUES OF CHILD COUNSELING: Presentation of counseling theories and ways each may be adapted to children. Focus on practical counseling, consulting and intervention techniques for specific developmental, social or behavior problems children experience. Suggestions for counseling children who are "exceptional" or experiencing special concerns resulting from societal problems.

4 qtr. hrs.

EDC 583. GROUP PROCESS: This course has two purposes: to enable the counselor to work effectively with groups; and to achieve deeper counselor self-understanding, through participation in the group process. (One fourth of class time is devoted to lectures and three fourths to participation.)

4 qtr. hrs.

EDC 594-595. INTERNSHIP FOR SCHOOL PSYCHOLOGISTS: A job-related program for nine months under the immediate supervision of a trained school psychologist. The internist will receive a stipend, made available from the State of Ohio Foundation funds.

12 qtr. hrs.

EDC 598. FIELD EXPERIENCE IN SOCIAL AGENCIES: Directed experience in professional functions within cooperating social agencies in the community.

4 qtr. hrs.

EDC 599. FIELD EXPERIENCES IN PERSONNEL SERVICES: Extensive directed experience in professional functions within new kinds of cooperating schools and community organizations. May be repeated three times. Prerequisite: permission, chairperson of Department of Counselor Education and Human Services.

4 qtr. hrs.

EDI 591. RESEARCH PROJECT: Action research initiated after consultation with advisor. Systematic study of a specific problem. Prerequisite: EDF 503, Educational Research Methodology and approval of preliminary plan.

4 qtr. hrs.

EDC 602. COUNSELING SEMINAR: The goal of the Counseling Seminar is to assist graduate students in gaining of knowledge and increased skills within the Nine Dimensions identified in *Guidance Services for Ohio Schools*.

1-6 qtr. hrs.

EDC 620. REALITY OF A SUCCESS-ORIENTED CLASSROOM: The problems encountered in providing a meaningful and realistic educational experience for students, particularly for those who deviate from a normal profile pattern. Requires counselors to obtain a new set of skills in working with administrators, teachers, and parents.

*3-5 qtr. hrs.*

EDC 635. FAMILY COUNSELING: Skills and understanding relative to the role of counselor and teacher in assisting families to develop new methodologies designed to solve problems within the structure. Special focus on family sculpturing and skill development through the utilization of simulations and role-playing demonstrations.

*4 qtr. hrs.*

EDC 653. INTERNSHIP: VISITING TEACHER: Extensive directed experience in professional functions within new kinds of cooperating schools. Prerequisite: permission of chairperson of Department of Counselor Education and Human Services.

*8 qtr. hrs.*

EDC 655. CAREER GUIDANCE INSTITUTE: Designed to assist counselors, teachers, and administrators in implementing an effective Career Guidance Program within their respective schools.

*3 qtr. hrs.*

EDC 673. COUNSELING ETHNIC MINORITIES: Treatment of theories, approaches, and techniques for counseling ethnic clients. Emphasis on establishing and maintaining individual counseling relationships with ethnic minority clients. Methods for facilitating interracial group experiences presented.

*3 qtr. hrs.*

EDC 801. INTERPERSONAL DYNAMICS: INDIVIDUAL AND ORGANIZATIONAL: This course aims to improve a student's ability to communicate effectively. The student will learn that an effective organization is a group of people working together toward its objectives. The more each member and leader is aware of interaction patterns in the organization, the more effectively each influences it.

*3 qtr. hrs.*



Eugene K. Moulin

*Department of Counselor Education and Human Services.*

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Department of  
**EDUCATIONAL  
ADMINISTRATION (EDA)**

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Donald J. Frericks, Chairperson of the Department

It is the primary mission of the Department of Educational Administration to prepare individuals to be educators who will understand and be able to implement a leadership role in education. The department is committed to productive scholarship, effective teaching, disciplined inquiry, collaborative learning, and the acceptance, in an academic sense, of divergent views. Opportunity is provided for all students to achieve skills and other measured accomplishments.

Faculty are committed to assist students in developing the inquiry skills of critical thinking, independent learning, and problem finding and solving. Admission to any program within the department implies commitment on the part of both student and faculty to work toward achievement of the goals of the department.

The Department of Educational Administration is committed to providing quality instruction and support to individuals who: 1) have demonstrated leadership potential within an educational setting and have expressed interest in pursuing a Master's degree in educational leadership; or 2) hold a Master's degree and wish to pursue a specific administrative certification program (elementary school principal, secondary school principal, educational administrative specialist, assistant superintendent, local superintendent and superintendent); or 3) are interested in earning the Educational Specialist's degree; or 4) wish to improve their educational leadership knowledge and skills.

## **ADMISSION REQUIREMENTS**

To enter the program the applicant for graduate study in Educational Leadership is expected to meet the following requirements:

1. Hold a Bachelor's degree from a four-year regionally accredited college or university.
2. Have a grade point average of 2.5 or better out of a possible 4.0 in the undergraduate program. Those students having less than a 2.5 average may have the opportunity to attempt to enter the program on a conditional basis by examination.
3. Complete an application for admission to graduate studies and submit it to the Office for Graduate Studies along with official undergraduate transcripts and three letters of recommendation.

Upon acceptance into the program the student will be assigned a faculty advisor who will help develop a course of study to meet individual needs.

## DEGREE REQUIREMENTS

To earn a Master of Science in Education Degree in Educational Leadership the student is required to complete a minimum of 45 quarter hours, achieving a grade point average of 3.0 or better. The following courses must be included in the required 45 quarter hours:

EDA 505	Educational Leadership .....	4
EDA 506	School Administration .....	4
EDA 509	Supervision .....	4
EDA 513	Eval. of Educ. & Organizational Systems .....	4
EDA 511	Curriculum .....	4
EDA 510	Instructional Leadership .....	4
EDT 502	Philosophical Studies in Education .....	4
EDC 530	Psychology of Individual Differences .....	4
EDA 515	School Law I .....	3
EDA 508	Computers in Educational Leadership .....	3
EDA 507	Planned Field Experience I .....	4
EDA 519	Independent Learning .....	3

## APPLICATION FOR CANDIDACY

Application for candidacy is achieved by the student upon the successful completion of 20 quarter hours of course work in the program which includes *two* of the following courses:

EDA 505	Educational Leadership .....	4
EDA 506	School Administration .....	4
EDA 509	Supervision .....	4
EDA 513	Evaluation of Educ. & Organizational Systems .....	4

## DEPARTMENTAL CONFERENCE

Upon completion of all course work for the Master's degree program, the student will be sent a list of questions which are to be answered and mailed to the department prior to the departmental conference. All students are required to participate in a departmental conference in the term of graduation.

## SUPERVISOR'S CERTIFICATE WITHIN THE MASTER'S DEGREE

A supervisor's certificate may be obtained as a part of the Master's degree program by completing the course work required for a degree.

EDA 505	Educational Leadership .....	4
EDA 506	School Administration .....	4
EDA 509	Supervision .....	4
EDA 513	Eval. of Educ. & Organizational Systems .....	4
EDA 511	Curriculum .....	4
EDA 510	Instructional Leadership .....	4

EDT 502	Philosophical Studies in Education	4
EDC 530	Psychology of Individual Differences	4
EDA 515	School Law I	3
EDA 508	Computers in Educational Leadership	3
EDA 507	Planned Field Experience I	4
EDA 519	Independent Learning	3

Also required is evidence of 27 months of successful teaching experience under a standard certificate in the field for which the supervisor's certificate is sought.

## ELEMENTARY SCHOOL PRINCIPAL'S CERTIFICATE

A total of 68 quarter hours are required to obtain an elementary school principal's certificate. Forty-five of the hours will have been completed through the Master's degree program, while an additional 23 quarter hours are needed to fulfill the requirements for a principal's certificate. The following required courses may have been completed in the Master's degree program.

EDA 505	Educational Leadership	4
EDA 506	School Administration	4
EDA 509	Supervision	4
EDA 513	Eval. of Educ. & Organizational Systems	4
EDA 511	Curriculum	4
EDA 510	Instructional Leadership	4
EDT 502	Philosophical Studies in Education	4
EDC 530	Psychology of Individual Differences	4
EDA 515	School Law I	3
EDA 508	Computers in Educational Leadership	3
EDA 507	Planned Field Experience I	4
EDA 519	Independent Learning	3

In addition, the following 23 quarter hours of course work are required for the elementary school principal's certificate and may be completed in a post-Master's degree program.

EDA 604	Elementary School Administration	3
EDA 610	Curriculum Leadership	3
EDA 621	Public Relations/Policy Development	3
EDA 615	School Law II	3
EDA 617	School Finance & Economics	4
EDA 626	Staff Personnel Services	4
EDA 607	Planned Field Experience II	3

Also required is evidence of 27 months of satisfactory teaching experience of which at least 18 months shall have been in grades K-8 under a standard teaching certificate or under a standard special teaching certificate.

## SECONDARY SCHOOL PRINCIPAL'S CERTIFICATE

A total of 68 quarter hours are required to obtain a secondary school principal's certificate. Forty-five of the hours will have been completed through the Master's degree program, while an additional 23 quarter hours are needed to fulfill the requirements for a principal's certificate. The following required courses may have been completed in the Master's degree program:

EDA 505	Educational Leadership .....	4
EDA 506	School Administration .....	4
EDA 509	Supervision .....	4
EDA 513	Eval. of Educ. & Organizational Systems .....	4
EDA 511	Curriculum .....	4
EDA 510	Instructional Leadership .....	4
EDT 502	Philosophical Studies in Education .....	4
EDC 530	Psychology of Individual Differences .....	4
EDA 515	School Law I .....	3
EDA 508	Computers in Educational Leadership .....	3
EDA 507	Planned Field Experience I .....	4
EDA 519	Independent Learning .....	3

In addition, the following 23 quarter hours of course work are required for the secondary school principal's certificate and may be completed in a post-Master's program.

EDA 605	Secondary School Administration .....	3
EDA 610	Curriculum Leadership .....	3
EDA 621	Public Relations/Policy Development .....	3
EDA 615	School Law II .....	3
EDA 617	School Finance & Economics .....	4
EDA 626	Staff Personnel Services .....	4
EDA 607	Planned Field Experience II .....	3

Also required is evidence of 27 months of satisfactory teaching experience of which at least 18 months shall have been in grades 7-12 under a standard high school teaching certificate or under a standard special teaching certificate.

## EDUCATIONAL ADMINISTRATIVE SPECIALIST CERTIFICATE

The Educational Administrative Specialist certificate may be earned with a total of 68 quarter hours issued in the following areas of specialization:

- 1) Business Management
- 2) Educational Research
- 3) Educational Staff Personnel Administration
- 4) Instructional Services

- 5) Pupil Personnel Administration
- 6) School and Community Relations
- 7) Special Education (Exceptional Children)

For information concerning this type of certificate, please contact the Office of Educational Administration.

## ASSISTANT SUPERINTENDENT CERTIFICATE

A total of 75 quarter hours are required to obtain an assistant superintendent's certificate. Forty-five of the hours will have been completed through the Master's degree program with an additional 30 quarter hours needed to fulfill the requirements for an assistant superintendent's certificate. The following required courses may have been completed in the Master's degree program:

EDA 505	Educational Leadership .....	4
EDA 506	School Administration .....	4
EDA 509	Supervision .....	4
EDA 513	Eval. of Educ. & Organizational Systems .....	4
EDA 511	Curriculum .....	4
EDA 510	Instructional Leadership .....	4
EDT 502	Philosophical Studies in Education .....	4
EDC 530	Psychology of Individual Differences .....	4
EDA 515	School Law I.....	3
EDA 508	Computers in Educational Leadership .....	3
EDA 507	Planned Field Experience I .....	4
EDA 519	Independent Learning .....	3

In addition, the following 30 quarter hours of course work are required for the assistant superintendent's certificate and may be completed in a post-Master's program.

EDA 604	Elementary School Administration .....	3
EDA 605	Secondary School Administration .....	3
EDA 610	Curriculum Leadership .....	3
EDA 621	Public Relations/Policy Development .....	3
EDA 615	School Law II .....	3
EDA 617	School Finance & Economics .....	4
EDA 626	Staff Personnel Services .....	4
EDA 607	Planned Field Experience II.....	3
EDA 716	Business Affairs & Physical Resources .....	4

Also required is evidence of 27 months of satisfactory experience in a teaching, supervisory or administrative position under the appropriate certificate.

## LOCAL SUPERINTENDENT AND SUPERINTENDENT CERTIFICATE

A total of 90 quarter hours are required to obtain either a local superintendent or a superintendent's certificate. Forty-five of the hours will have been completed through the Master's degree program, with an additional 45 quarter hours needed to fulfill the requirements for both of these certificates. The following required courses may have been completed in the Master's degree program:

EDA 505	Educational Leadership .....	4
EDA 506	School Administration .....	4
EDA 509	Supervision .....	4
EDA 513	Eval. of Educ. & Organizational Systems .....	4
EDA 511	Curriculum .....	4
EDA 510	Instructional Leadership .....	4
EDT 502	Philosophical Studies in Education .....	4
EDC 530	Psychology of Individual Differences .....	4
EDA 515	School Law I .....	3
EDA 508	Computers in Educational Leadership .....	3
EDA 507	Planned Field Experience I .....	4
EDA 519	Independent Learning .....	3

In addition, the following 45 quarter hours of course work are required for both superintendent certificates and may be completed in a post-Master's program.

EDA 604	Elementary School Administration .....	3
EDA 605	Secondary School Administration .....	3
EDA 610	Curriculum Leadership .....	3
EDA 621	Public Relations/Policy Development .....	3
EDA 615	School Law II .....	3
EDA 617	School Finance & Economics .....	4
EDA 626	Staff Personnel Services .....	4
EDA 607	Planned Field Experience II .....	3
EDA 716	Business Affairs & Physical Resources .....	4
EDA 718	The Superintendency .....	4
EDA 719	Human Relations in Educational Leadership .....	4
EDA 710	Curriculum & Instruction .....	4
EDA 722	Collective Bargaining & Contract Management .....	3

Also required is evidence of 27 months of satisfactory experience in an administrative or supervisory position under the appropriate certificate.



## COURSES OF INSTRUCTION

EDA 505. EDUCATIONAL LEADERSHIP: The focus of this course is leadership within schools and the role of the leader in maintaining and/or bringing about change within the school building, department or other educational unit. *4 qtr. hrs.*

EDA 506. SCHOOL ADMINISTRATION: A survey course in school administration, focused upon the history and philosophies of administration, theories of administration, the school governance system, and major administrative task areas. *4 qtr. hrs.*

EDA 507. PLANNED FIELD EXPERIENCE: This course provides opportunities for the student to experience supervisory/administrative responsibilities in a planned personalized program. Emphasis is placed on practicing the skills learned in the Master's program, receiving feedback on practical efforts, relating practice to theory, and broadening the student's experience in working with others in the schools primarily on matters of curriculum and instruction. *4 qtr. hrs.*

EDA 508. COMPUTERS IN EDUCATIONAL LEADERSHIP: Understanding uses of the computer for instructional and management purposes. Emphasis on planning for instruction, evaluating software and hardware in terms of specific needs, and managing-scheduling, record keeping, projecting costs, etc. *3 qtr. hrs.*

EDA 509. SUPERVISION: This course in the theory and practice of supervision is designed to explore essential concepts and skills necessary in providing leadership in the improvement of teaching and learning. Emphasis will be placed on concepts and means of providing leadership in the supervisory task areas incorporating the utilization of effective human relations. *4 qtr. hrs.*

EDA 510. INSTRUCTIONAL LEADERSHIP: Develop skills and attitudes essential in helping others to expand/refine their instructional effectiveness. Emphasis on helping teachers use alternative models of teaching (reading and math emphasized), diagnosing learner needs, prescribing appropriate learning approaches, and using classroom observation data. *4 qtr. hrs.*

EDA 511. CURRICULUM: Development of an understanding of the history, purposes, and practices of the elementary/secondary school with the emphasis upon materials and practices found effective. *4 qtr. hrs.*

EDA 513. EVALUATION OF EDUCATIONAL & ORGANIZATIONAL SYSTEMS: This course is designed to develop knowledge and skills necessary for researching program effectiveness with emphasis on delineating, collecting, analyzing, and applying descriptive and judgmental information for the purpose of decision-making and accountability. *4 qtr. hrs.*

EDA 515. SCHOOL LAW I: This course addresses legal issues pertinent to teacher/administrator and student legal rights and responsibilities in daily school happenings. The legal process, structures of the law, legislation/litigation, and practices to avoid legal infringements are addressed. Primary emphasis is on building level activities. *3 qtr. hrs.*

EDA 519. INDEPENDENT LEARNING: This course involves an in-depth project in the area of educational leadership. The activity may be research-based or may involve a planned, implemented and evaluated project within a school system or organization. *3 qtr. hrs.*

EDA 604. **ELEMENTARY SCHOOL ADMINISTRATION: POLICY & PRACTICE:** Emphasis on application of the administrative process as well as the research on school effectiveness to the elementary school setting. Focus will include administering the day-to-day operation, management, and evaluation of the elementary school program.

*3 qtr. hrs.*

EDA 605. **SECONDARY SCHOOL ADMINISTRATION: POLICY & PRACTICE:** Emphasis on application of the administrative process as well as the research on school effectiveness to the secondary school setting. Focus will include administering the day-to-day operation, management, and evaluation of the secondary school program.

*3 qtr. hrs.*

EDA 607. **PLANNED FIELD EXPERIENCE II:** The planned field experience is intended to provide the participant with an opportunity to relate the course work, research, simulation, and independent study in which he/she has engaged to actual problems encountered in administering the elementary or secondary school building/program. The field experience provides a laboratory in which the student may test the skills, concepts, and philosophy acquired through his/her certification program.

*3 qtr. hrs.*

EDA 610. **CURRICULUM LEADERSHIP:** Developing skills and abilities in leading others in the curriculum development/refinement process.

*3 qtr. hrs.*

EDA 615. **SCHOOL LAW II:** Deals with the law as it relates to the operation of the school district and the political structures in which it exists. A study of the statutes, judicial decisions, and opinions of the Attorney General on both the state and federal levels will be emphasized. In addition, the course will include a study of the responsibilities and the legal authority of boards of education, administrators, teachers and other school employees.

*3 qtr. hrs.*

EDA 617. **SCHOOL FINANCE & ECONOMICS:** Principles of school finance, the economics of school finance, technical problems of budgeting, sources of income, purchasing, accounting, debt service, forms and formulas used, local taxes and reports.

*4 qtr. hrs.*

EDA 621. **PUBLIC RELATIONS/POLICY DEVELOPMENT:** Philosophy and techniques of school-community relations for educational leaders. Also included are policy planning, goal setting and evaluation for school program and pupil achievement.

*4 qtr. hrs.*

EDA 626. **STAFF PERSONNEL SERVICES:** The systematic selection, evaluation, assignment and development of both professional and classified school personnel. Emphasis will be placed on professional negotiations with an analysis of various negotiated agreements as they relate to the staff and to administration.

*4 qtr. hrs.*

EDA 710. **CURRICULUM AND INSTRUCTION:** Course provides students an opportunity to refine their understanding of research findings on effective instruction, program developments, instructional improvement, and effective management approaches in curriculum and instruction.

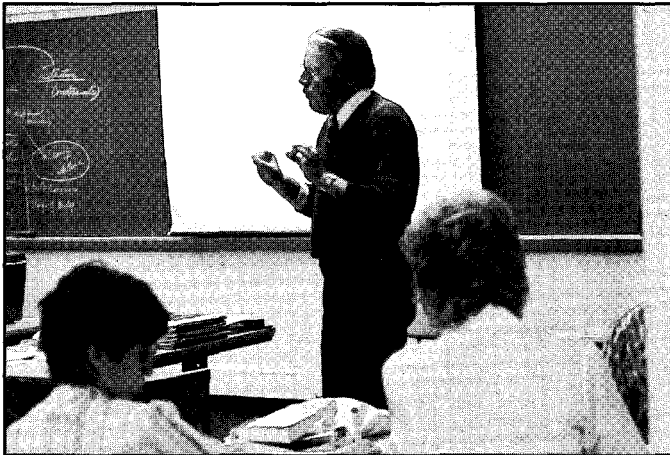
*4 qtr. hrs.*

EDA 716. BUSINESS AFFAIRS AND PHYSICAL RESOURCES: Course provides the student the opportunity to gain a complete understanding of the fiscal operation of the total school district. In addition, the proper use of physical resources, conservation of energy in the operation of school buildings, facilities for handicapped students and the development of new facilities will be studied. *4 qtr. hrs.*

EDA 718. THE SUPERINTENDENCY: Course addresses the duties and responsibilities of central office administrators, especially those of the superintendent. Emphasis on Board of Education relations, communication, and an analysis of the political structures within which the superintendent operates. *4 qtr. hrs.*

EDA 719. HUMAN RELATIONS IN EDUCATIONAL LEADERSHIP: Course focuses on improving the student's ability to communicate effectively in complex social systems. Emphasis on group process, conflict management, values, and leader communication in an organization. *4 qtr. hrs.*

EDA 722. COLLECTIVE BARGAINING AND CONTRACT MANAGEMENT: Course provides students with a history of the development of collective bargaining, the procedures and techniques of collective bargaining and contract management, and the role and responsibilities of administrators in carrying out these functions. *4 qtr. hrs.*



Joseph F. Rogus.  
*Department of Educational Administration.*

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# EDUCATIONAL SPECIALIST IN EDUCATIONAL LEADERSHIP (EDL)

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Donald J. Frericks, Director of the Program

Offered Jointly by  
The Colleges of Education and The Graduate Schools of  
The University of Dayton and Wright State University

This Post-Master's Educational Specialist Degree, Ed.S., program is designed to enhance individual capabilities for educational leadership in the following roles: superintendent, assistant superintendent, director, supervisor and principal. The areas of staff/organization development, program development and evaluation, law/finance/facilities, public relations, research, and computers are included. Emphasis is given to preparing individuals for central office positions.

A planned program of study will cover two years, with a required minimum of 50 quarter hours of graduate work beyond the Master's degree. Course work will be offered in a sequential order so that all of the requirements can be completed in a two year period.

In this degree program course work may be completed either at the University of Dayton or at Wright State University. Previous post Master's course work may be transferred into the program if it supports the objectives of the overall program.

## ADMISSION REQUIREMENTS

1. Admission to the Graduate School
2. A Master's degree
3. Five years of professional experience in teaching and/or administration
4. Submission of 3 letters of recommendation
5. Earned cumulative grade point average of 3.5 or better on the graduate level
6. Acceptance by the combined steering committee

## PROGRAM REQUIREMENTS

	<i>Quarter Hours</i>
<b>Core Courses</b> .....	12
Organizations as Social Systems .....	3
Curriculum & Instruction .....	3
Program & Staff Development & Evaluation .....	3
Ideas that Shape American Education .....	3
<b>Concentration Courses</b> .....	27
Administrative Leadership Skills .....	3
Curriculum & Instruction Leadership .....	3
Computer Application for Educational Leaders .....	3

Staff Personnel/Negotiations .....	3
Public Relations/Politics .....	3
School Finance .....	3
Business & Facilities Management .....	3
School Law .....	3
Advanced Seminar .....	3

### ***Field-Based Experience (6 quarter hours)***

This course work will give the individual an opportunity to apply knowledge and information in a practical learning situation.

### ***Research Project (2 quarter hours)***

Each student will develop and carry out a research project. This project will relate to the individual's course work, interest, and work responsibilities.

## **COURSES OF INSTRUCTION**

The following specialist degree courses are to be completed through the **University of Dayton:**

EDT 803. RESEARCH I: The student will consider practical applications and issues in research as they relate to educational leadership. It is assumed that all students have demonstrated competency in basic descriptive and inferential statistics. 3 qtr. hrs.

EDA 807. RESEARCH PROJECT: Completion of the research project is an integral part of this degree program. Students will be given two quarter hours of credit for the completion of their research project. 2 qtr. hrs.

EDT 808. IDEAS THAT SHAPE AMERICAN EDUCATION: A consideration of selected ideas, in their initial form, which have shaped American education. Particular emphasis will be placed upon ideas which focus upon the learner and the curriculum. Underlying those considerations and emphases will be the assumption that history may be utilized as a policy science. 3 qtr. hrs.

EDA 810. CURRICULUM AND INSTRUCTION: Course designed to refine participant understanding of the realms of meaning, the characteristics of effective programs, research findings on effective instruction, and effective curriculum management approaches. 3 qtr. hrs.

EDA 812. PROGRAM & STAFF DEVELOPMENT & EVALUATION: Course designed to strengthen student competence with program development and evaluation processes. Major emphasis is focused on staff development planning, program implementation, and program assessment. 3 qtr. hrs.

EDA 815. SCHOOL LAW: Knowledge of statutes and judicial decisions related to legal authority; responsibilities of boards of education, teachers and administrators. Emphasis will be placed on understanding the legal framework necessary for education to carry out its mandated responsibility - the education of all children of all people. 3 qtr. hrs.

EDA 817. **SCHOOL FINANCE:** To present guiding principles for developing adequate financial programs; the detailed study of sources of revenues, local, state, and federal; and the procedures in managing school funds with reference to budgeting, accounting, and auditing. *3 qtr. hrs.*

EDA 819. **BUSINESS-FACILITIES MANAGEMENT:** Understanding the complete fiscal operation of the school district from a business affairs point of view, as well as a study of the proper use of the school district's physical resources will be emphasized. Energy conservation, facilities for the handicapped and construction of new facilities will be discussed. *3 qtr. hrs.*

EDA 821. **PUBLIC RELATIONS AND POLITICS:** This course is designed to assist school administrators in identifying their responsibility for public communications, for planning and for their leadership role. Provisions are made for the development of guidelines, techniques, and practices which can be utilized to facilitate wholesome relationships between school and community. *3 qtr. hrs.*

## COURSES OF INSTRUCTION

The following Specialist degree courses may be completed at **Wright State University** or equivalent courses may be completed at the **University of Dayton:**

(WSU) **ORGANIZATIONS AS SOCIAL SYSTEMS:** This course advances the student's knowledge of effecting change with individuals and groups within a social system. It also provides students with a working familiarity with systematic models useful for effecting change and assist them in indentifying and developing skills useful to a leader functioning as a charge agent. *3 qtr. hrs.*

(WSU) **FIELD EXPERIENCE I:** This initial field experience course is designed to offer students a broad base of field experiences within an educational setting upon which future learning may take place. *2 qtr. hrs.*

(WSU) **STAFF PERSONNEL/NEGOTIATIONS:** The course presents hypotheses, principles, and practice for dealing with school personnel problems. Emphasis is placed on the areas of recruitment, selection, induction, appraisal, development, compensation and motivation of personnel. Exploration of legal cases and concepts which have emerged as a result of conflict resolution and adjudication in the courts and an analysis of negotiated agreements and case studies in the field of education also will be utilized. *3 qtr. hrs.*

(WSU) **ADMINISTRATIVE LEADERSHIP SKILLS:** The focus of this course is upon the analysis of organizations. A variety of organizational structures which reflects a continuum of beliefs is explored and organizational theory is analyzed in an attempt to specify the relationship among the various needs of an organization. Also covered is the individual's role and function within an organization. Emphasis is placed on the following concepts: behavioral science theory, management and leadership styles, theories and models of leadership, and the skills necessary for effective leadership. *3 qtr. hrs.*

(WSU) CURRICULUM & INSTRUCTION LEADERSHIP: To develop skills and abilities in leading others in curriculum development; to expand knowledge of teaching skills and methods of assisting others in developing their instructional effectiveness.

*3 qtr. hrs.*

(WSU) COMPUTER APPLICATION FOR EDUCATIONAL LEADERS: To assist school personnel in the understanding of computer utilization for instruction and management.

*3 qtr. hrs.*

(WSU) FIELD EXPERIENCE II: The intention of this course is to provide students with the opportunity to relate course work with practical field-based experience in the area of educational leadership. The focus of this experience is broad-based in terms of leadership and will help the student plan the specific concentration activities of the third field-based experiences. Students are given the opportunity to identify and refine their human relations skills necessary in achieving organizational goals.

*2 qtr. hrs.*

(WSU) FIELD EXPERIENCE III: A continuation of the purpose and function of the initial field-based experience. Focus of this course is upon an added depth of demonstration of the concepts and skills of educational leaders. Further, this course will emphasize and utilize the knowledge and skills required in the concentration area.

*2 qtr. hrs.*

(WSU) ADVANCED SEMINAR: A capstone course which synthesizes the concepts, skills, and information of the total specialist's program. Presentation of the student's research project is an integral part of this course.

*3 qtr. hrs.*



*Chaminade Hall.*

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Department of  
**PHYSICAL AND HEALTH  
EDUCATION (EDP)**

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Doris A. Drees, Chairperson of the Department

The Department of Physical and Health Education offers a program leading to the Master of Science in Education. It is a flexible, personalized program providing the student with advanced training in physical education to develop special capabilities that will enable the student to become a competent practitioner and leader in the field of physical education.

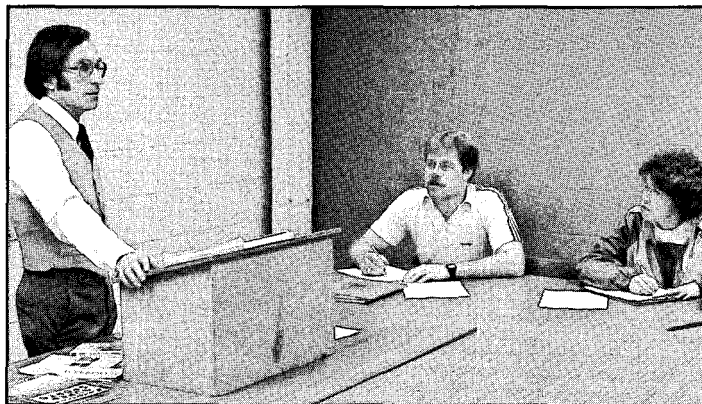
### **ASSISTANTSHIPS**

Graduate assistantships are available to the better graduate students. A graduate assistant's assignment would be to teach in the basic activity program in physical education or would have substitute duties as assigned by the chairperson. Graduate assistants will receive a stipend for the academic year (nine months) plus waiver of registration fees and tuition. Interested applicants should contact the department.

### **ADMISSION REQUIREMENTS**

The applicant for graduate study must meet the following requirements:

1. The applicant must be a graduate of an accredited four-year college or university.
2. The applicant must hold a teacher's certificate in physical education.
3. The applicant must have a grade point average of 2.5 or better out of a possible 4.0 in the undergraduate program.



John R. Schleppe.  
*Department of Health and Physical Education.*

### **ADVISING**

The coordinator of the graduate program within the department will act as the student's academic advisor. A personalized program will be planned



with the student during his first term of enrollment in an effort to meet the professional and personal goals and needs. The coordinator will also counsel the student on the purpose and requirements of graduate work, selection of courses, and the options available within the department.

## PROGRAM REQUIREMENTS

A minimum of 45 quarter hours is required. Students must achieve an average of at least B (3.0) in all work undertaken in order to qualify for graduation.

### Candidacy

A student becomes a candidate for the Master's degree if the cumulative point average for graduate work, the preliminary plan for the research project (if Option A), and the reference appraisals are judged to be acceptable by the graduate committee of the Department of Physical Education.

The most important consideration in the admission of a student to candidacy is the quality of his graduate work to date. Evidence of being able to meet all the graduation requirements must be given. The applicant who is deemed unqualified at this point, will be advised to discontinue the program.

A student should apply for admission to candidacy after completion of 25 quarter hours of graduate work, including at least two courses in Physical Education and EDT 503, Research Methodology. Application is made by filing the official candidacy form with the School of Education office.

### Comprehensive Examination

Successful completion of a written comprehensive examination is required for graduation. The comprehensive examination, three hours in length, will basically cover the student's area of concentration (Physical Education courses). The examination may be taken during the student's last term of course work or upon the completion of the course work in the area of concentration. It is given once during each of the three regular terms. It is the student's responsibility to make formal application one month in advance for the examination. Examination dates will be posted at the beginning of each term.

If a student fails the examination the first time, a second opportunity will be given. Failure the second time incurs failure and dismissal from the program.

### Program

#### **Required Core Courses (12 quarter hours)**

	<i>Quarter Hours</i>
EDT 502	Philosophical Studies of Education ..... 4
EDT 503	Educational Research Methodology ..... 4
EDT 501	Learning Theory and Education ..... 4
OR	
EDT 504	Human Development and Education ..... 4

**Area of Concentration—Physical Education** . . . . . 18 quarter hours  
 MUST TAKE A *MINIMUM OF ONE COURSE FROM EACH OF THE FOUR SUB—CATEGORIES.*

**I. Historical and Sociological Aspects of Physical Education**

EDP 510History of Physical Education . . . . .	4
EDP 519Sport and Society . . . . .	3
EDP 540Women in Sport . . . . .	4

**II. Administration: Methodology**

EDP 523Curriculum Development of Physical Education . . . . .	3
EDP 529Innovative Practices in Physical Education . . . . .	3
EDP 547Administration of Interscholastic and Intramural Athletics . . .	3
EDP 548Safety and the Law in Physical Education & Sport . . . . .	4
EDP 556Issues in Physical Education (Seminar) . . . . .	3

**III. Scientific Basis**

EDP 530Basic Athletic Training . . . . .	4
EDP 531Nutrition for the Athlete . . . . .	3
EDP 532Advanced Athletic Training . . . . .	4
EDP 537Biomechanics . . . . .	4
EDP 538The Nature and Basis of Motor Skill Acquisition . . . . .	3
EDP 546Scientific Principles of Athletic Conditioning . . . . .	3
EDP 550Physiological Responses to Exercise . . . . .	4

**IV. Research/Statistics**

EDP 551Laboratory Techniques for the Applied Practitioner . . . . .	3
EDP 555Survey of Research in Physical Education . . . . .	3
EDP 560Evaluation in Physical Education . . . . .	4

**Electives** . . . . . 9  
 Courses selected from general, professional, physical or health education.

**Options** . . . . . 6  
 A. Research Project . . . . . 6  
 OR  
 B. Additional course work in physical education . . . . . 6

**COURSES OF INSTRUCTION**

EDP 508. **PHYSICAL EDUCATION WORKSHOPS:** Workshops designed for study of special topics of current interest in physical education. May focus attention on substantive material or operational problems. May be repeated up to a maximum of 2 courses. *1-4 qtr. hrs.*

EDP 509. **HEALTH EDUCATION WORKSHOPS:** Workshops designed for study of special topics of current interest in health education. May focus attention on substantive material or operational problems. May be repeated up to a maximum of 2 courses. *1-4 qtr. hrs.*

EDP 510. HISTORY OF SPORT AND PHYSICAL EDUCATION: Study of the development of sport and physical education from early cultures to the present time. Emphasis on the United States. *4 qtr. hrs.*

EDP 514. MOVEMENT BASED PHYSICAL EDUCATION IN THE ELEMENTARY SCHOOL: Designed for Elementary Education and Physical Education graduate students who are returning to school for recertification. *4 qtr. hrs.*

EDP 519. SPORT AND SOCIETY: A study of the cultural patterns, socializing process, and other psychosocial parameters of American sport. *3 qtr. hrs.*

EDP 523. CURRICULUM DEVELOPMENT OF PHYSICAL EDUCATION: Principles and procedures for curriculum construction and revision; criteria for selecting activities and judging outcomes; the place of physical education within the total curriculum. *3 qtr. hrs.*

EDP 529. INNOVATIVE PRACTICES IN PHYSICAL EDUCATION: Practical and theoretical study of innovative methods of teaching physical activities. *3 qtr. hrs.*

EDP 530. ATHLETIC TRAINING: Application of principles involved in prevention, care, and treatment of athletic injuries. *4 qtr. hrs.*

EDP 531. NUTRITION FOR THE ATHLETE: A course designed to investigate the latest research trends in the nutritional assessment of the athlete. Topics to be discussed will pertain to dietary needs, fluid replenishment, pre-game meals, and "fad" diets for the athlete. *3 qtr. hrs.*

EDP 532. ADVANCED ATHLETIC TRAINING: Advanced techniques of evaluation, treatment and rehabilitation of athletic injuries. Course will include basic Pharmacology and therapeutic modalities. *4 qtr. hrs.*

EDP 537. BIOMECHANICS: Investigations of physical principles operative in the performance of physical education activities with attempts to analyze for methods of greater effectiveness and improved performance. *4 qtr. hrs.*

EDP 538. THE NATURE AND BASIS OF MOTOR SKILL ACQUISITION: A study of psychological factors which affect the acquisition of motor skills. Perceptual-motor development theories. Motor behavior. *3 qtr. hrs.*

EDP 540. WOMEN IN SPORT: A study of the historical, psychological, sociological and biophysical aspects of the American woman in sport. *4 qtr. hrs.*

EDP 546. SCIENTIFIC PRINCIPLES OF ATHLETIC CONDITIONING: Study of the factors which affect maximum human performance in athletic competition. Application of scientific principles in preparing the athlete for maximum performance. Methods and theories of training, conditioning, and reconditioning. *3 qtr. hrs.*

EDP 547. ADMINISTRATION OF INTERSCHOLASTIC AND INTRAMURAL ATHLETICS: Organization of high school athletic and intramural programs, staff, program, budget, health and safety, and other phases of administration. *3 qtr. hrs.*

EDP 548. SAFETY AND THE LAW IN PHYSICAL EDUCATION AND SPORTS: Study of basic safety measures to prevent injuries and avoid legal suits. Investigation of the fundamental principles involved in legal court cases. Analysis of physical education and sport. *4 qtr. hrs.*

EDP 550. PHYSIOLOGICAL RESPONSES TO EXERCISE: A study of the physiological changes that occur during exercise and training. *4 qtr. hrs.*

EDP 551. LABORATORY TECHNIQUES FOR THE PHYSICAL EDUCATION PRACTITIONER: The practical application of selected physical education tests and measurements. Emphasis will be placed on human performance (strength, cardiovascular, flexibility, and body composition) testing. *3 qtr. hrs.*

EDP 555. SURVEY OF RESEARCH IN PHYSICAL EDUCATION: Survey and critical analysis of research and other pertinent materials in the field. *3 qtr. hrs.*

EDP 556. ISSUES IN PHYSICAL EDUCATION (SEMINAR): A seminar to investigate and report on a specific issue in physical education. *3 qtr. hrs.*

EDP 575. INDIVIDUAL STUDIES IN PHYSICAL EDUCATION: Individual investigations of a problem in physical education or health. (With approval of advisor.) *1-4 qtr. hrs.*

EDP 579. SEMINAR IN HEALTH EDUCATION: A problem course for experienced teachers. *3 qtr. hrs.*

EDP 582. INTERNSHIP IN PHYSICAL EDUCATION: A job-related experience under the immediate supervision of personnel from a local school or community organization. *4 qtr. hrs.*

EDP 591. RESEARCH PROJECT: Action research initiated after consultation with advisor. A systematic study of a specific problem. Prerequisite for registration: Completion of EDF 503, Research Methodology and Statistics, and approval of preliminary plan. *6 qtr. hrs.*

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Department of  
**TEACHER EDUCATION (EDT)**

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Thomas J. Lasley, Chairperson  
James E. Gay, Assistant Chairperson for Graduate Programs

The Teacher Education Department's mission is the development of competent and humane teachers. Recognizing the value of balancing theory and practice in professional education, the department provides its students and faculty the opportunity to be of service and to do research in schools and in other educational agencies. It dedicates itself to the discovery and transmission of the knowledge, skills, attitudes and values which enable teachers to become educational leaders. Its goal is to be a center of excellence in teacher education.

The department offers thirteen concentrations at the graduate level:

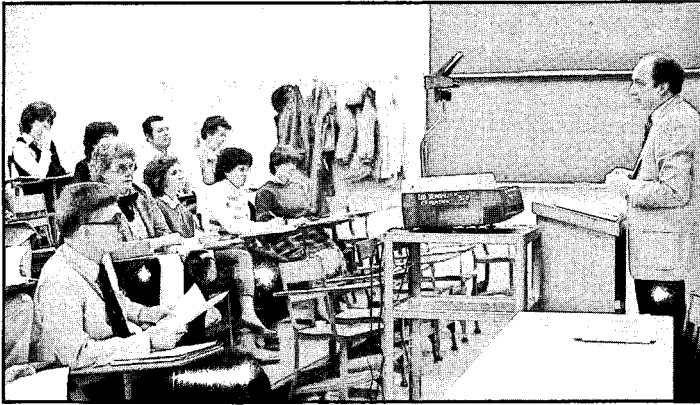
<b>Computers in Education</b>	<b>Middle School/Junior High</b>
<b>Early Childhood Education</b>	<b>MSPR (K-12)</b>
<b>Elementary Education</b>	<b>Reading Supervisor (K-12)</b>
<b>EMR (DH) K-12</b>	<b>Reading Teacher (K-12)</b>
<b>Gifted Education</b>	<b>Secondary Education</b>
<b>Initial Teaching Certificate</b>	<b>Learning Disabilities/</b>
<b>(Elementary and Secondary)</b>	<b>Behavioral Disorders (K-12)</b>
<b>Interdisciplinary Studies</b>	

## **ADMISSION REQUIREMENTS**

Students must have a 2.5 undergraduate GPA and three letters of recommendation to be admitted to the Department of Teacher Education. If a student does not have an undergraduate GPA of 2.5 but feels capable of graduate work, that student may petition the assistant chairperson to be permitted to take an admission test. If performance on the admission test is satisfactory to the faculty of the department, the student will be recommended for conditional admission to the program.

Students taking courses in the Department of Teacher Education are reminded that only up to twelve (12) quarter hours earned as an Unclassified Graduate Student can be applied toward the Master's degree. Therefore, all students at the time they first begin taking graduate classes are urged to apply for regular graduate admission.

If students have student teaching as part of their programs, they must apply for student teaching in the term prior to registration. Applications are available in Chaminade 205.



Thomas J. Lasley.  
Department of Teacher Education.

## CORE REQUIREMENTS FOR THE MASTER'S DEGREE

Quarter Hours

1. EDT 500 Models of Teaching . . . . . 4
2. EDT 502 Philosophical Studies in Education . . . . . 4
3. EDT 503 Educational Research Methodology . . . . . 4
4. EDT 670 Master's Project . . . . . 5
5. A minimum of 45 quarter hours with not more than eight (8) quarter hours being workshops (i.e. codes with W, and EDT 508W, and courses for which the grade is CR/NC).
6. Participation in the departmental conference held in the final term of the student's program.

### Notes

1. EDT 503 should be taken between the 12th and 20th quarter hour (i.e. about one-third of the way through the program).
2. Students should register for the Master's Project in the term they expect to graduate. EDT 500, 502, and 503 are prerequisites to EDT 670.

## CONCENTRATION REQUIREMENTS

### COMPUTERS IN EDUCATION

Quarter Hours

- |         |   |    |
|---------|---|----|
| EDT 539 | Computers in Education . . . . .          | 4  |
| EDT 540 | Advanced Computers in Education . . . . . | 4  |
| EDT 541 | Methods: Computers in Education . . . . . | 4  |
| CPS 502 | Computer/Societal Impact . . . . .        | 4  |
| — — —   | Approved Electives . . . . .              | 12 |

### Notes

1. EDT 539 or CPS 502 is a prerequisite for EDT 540.
2. Students who accumulate nine (9) quarter hours in this program, including EDT 540, can petition to have Data Processing validation added to their certificates.
3. EDT 538 is recommended.

**EARLY CHILDHOOD**

Quarter Hours

EDT 517	Introduction to Pre-Kindergarten Education .....	4
EDT 518	Kindergarten-Primary Curriculum and Instruction .....	4
EDT 519	K-4 Materials .....	4
EDT 520	Practicum in Pre-Kindergarten (Student Teaching) .....	4
— —	Approved Electives .....	12

**Notes**

Teachers with at least a provisional elementary teaching certificate can add Kindergarten validation to their certificates when they have completed EDT 518 and EDT 519.

**ELEMENTARY EDUCATION**

Quarter Hours

— —	Approved Concentration Courses .....	16
— —	Approved Electives .....	12

**Note**

The program may be level specific (i.e. primary, elementary), subject related (i.e. language arts, social studies, etc.), or directed toward developing instructional strategies (i.e. individualized instruction, learning style, media, etc.). The program and elective courses must be decided by the student and the advisor.

**EMR (DH) K-12**

Quarter Hours

EDT 590	Introduction to Exceptionalities .....	4
EDT 545	Advanced Developmental Reading .....	4
EDT 580	Psychology and Education of Retarded .....	4
EDT 587	Career Development: Special Education .....	3
EDT 592	Curriculum, Materials and Instruction: EMR .....	6
EDT 581	Student Teaching: EMR .....	4-8
RECOMMENDED:		
EDT 596	Classroom Structure and Behavior Management .....	4
EDT 588	Educating Parents of Exceptional Children .....	4

**Notes**

1. EDT 590 is a prerequisite for all DH courses.
2. EDT 545 is a prerequisite for EDT 592.
3. EDT 580 is a prerequisite for EDT 587 and EDT 592.
4. EDT 590, 545, 580, 587 and 592 are prerequisites to EDT 581.

**GIFTED EDUCATION**

Quarter Hours

EDT 575	Study of Gifted and Talented .....	4
EDT 576	Teaching the Gifted and Talented .....	4
EDT 577	Student Teaching and Seminar: Gifted .....	5
EDT 578	Special Topics in Gifted Education .....	4
— —	Approved Electives .....	11

## INITIAL TEACHING CERTIFICATE (ELEMENTARY)

Quarter Hours

EDT 501	Learning Theory and Education .....	4
	OR	
EDT 504	Human Development and Education .....	4
EDT 502	Philosophical Studies in Education .....	4
EDT 526	Mathematics in the Elementary School.....	3
EDT 528	Teaching in the Elementary School .....	4
EDT 529	Student Teaching: Elementary .....	10-14
EDT 543	Library Materials for Children and Adolescents .....	4
EDT 545	Advanced Developmental Reading .....	4
EDT 590	Introduction to Exceptionalities .....	4
EDT 619	Art in the Elementary School .....	3
EDT 626	Music in the Elementary School.....	3

### Notes

- In addition, students must complete general education requirements that include a Mathematics course, a biological and a physical science course, social science (to include Western and non-Western studies, American History or American Government), community health, and a course in physical education which focuses on physical development, play, and games. Before being allowed to take Student Teaching (Elementary) a student must have the equivalent of 300 hours of field and clinical experience.*
- of 300 hours of field and clinical experience.*

## INITIAL TEACHING CERTIFICATE (SECONDARY)

Quarter Hours

EDT 501	Learning Theory and Education .....	4
	OR	
EDT 504	Human Development and Education .....	4
EDT 505	Human Relations in Education .....	3
EDT 554	Advanced Secondary School Reading Improvement .....	3-4
EDT 560	Student Teaching: Secondary .....	10-14
EDT 570	School, Self and Society .....	4
---	---Special Methods in Principal Teaching Field .....	4
---	---Approved Graduate Electives .....	4

### Notes

- A student must have course work in the teaching field evaluated by the assistant chairperson for graduate Teacher Education to make sure of the content and scope required for the teaching area. If the student needs additional course work in the teaching field for certification, courses in the teaching field will be suggested. Graduate level courses in teaching fields are available in the following areas: Biology, Business, Chemistry, Communication, English, History, Mathematics, Physics, Political Science, Social Psychology, and Theological Studies.*
- A cumulative point average of 2.5 in principal teaching field is required for certification; students with a lower average accepted into the program must agree to take additional courses to raise it to criterion level.*



3. Once a student has been approved and placed for student teaching, withdrawals are not allowed from the program except with the approval of the assistant chairperson.
4. The Methods course must be taken prior to student teaching. The Methods courses are offered in the Fall term.
5. Students must have 30 semester hours in general education distributed over the following areas: Science, Mathematics, Social Sciences, English and/or Foreign Languages, Fine Arts, Philosophy and/or Theological Studies.
6. Before being allowed to take Student Teaching (Secondary), students must have the equivalent of 300 clock hours of field and clinical experience.

## INTERDISCIPLINARY EDUCATIONAL STUDIES

Quarter Hours

— —	Approved Concentration Courses in Education .....	16
— —	Approved Electives .....	12

### Notes

1. The student in the Interdisciplinary program normally draws upon courses offered by two or more departments in the University. The student must prepare a plan of study identifying objectives, courses, and tentative time-line. Typical Interdisciplinary programs have centered around the following: Adult Education, Multi-Culture Education, Values Education, Psychology and Education, Educational Policy Studies, Learning Styles, etc. Interested students should contact the assistant chairperson.
2. The student should meet with two or more faculty members from the two or more departments involved to lay out the approved program courses.

## LEARNING DISABILITIES/ BEHAVIORAL DISORDERS (K-12)

Quarter Hours

EDT 545	Advanced Developmental Reading .....	4
EDT 588	Educating Parents of Exceptional Children .....	4
EDT 590	Introduction to Exceptionalities .....	4
EDT 593	Education of Students: LD/BD .....	4
EDT 594	Diagnostic Teaching: LD/BD .....	4
EDT 595	Student Teaching: LD/BD .....	4
EDT 596	Classroom Structure and Behavior Management .....	4
— —	Approved Graduate Electives .....	4

### Notes

1. EDT 590 or equivalent is a prerequisite for all courses in the LD/BD sequence.
2. EDT 593 is a prerequisite for EDT 594 and EDT 595.
3. EDT 545 and EDT 596 are prerequisites to EDT 595.

## MIDDLE SCHOOL/JUNIOR HIGH

Quarter Hours

EDT 504	Human Development and Education .....	4
EDT 554	Advanced Secondary School Reading Improvement .....	3-4
EDT 558	Junior High and Middle Schools — Theory and Implications .	4
EDT 559	Interdisciplinary Teaching in Middle Schools .....	4
— —	Approved Electives .....	12

**Note**

1. EDT 558 is only offered once every two years.
2. EDT 559 is only offered once every two years.

**MODERATELY, SEVERELY, OR  
PROFOUNDLY RETARDED (K-12)**

Quarter Hours

EDT 590	Introduction to Exceptionalities .....	4
EDT 580	Psychology and Education of Retarded .....	4
EDT 596	Classroom Structure and Behavior Management .....	4
EDT 592	Curriculum, Materials and Instruction: MR.....	6
EDT 589	Education of Multi-Handicapped .....	3
EDT 582	Student Teaching: MSPR .....	4-8
EDT 588	Educating Parents of Exceptional Children .....	4
EDT 587	Career Development: Special Education.....	3

**Notes**

1. EDT 590 is a prerequisite for all MSPR courses.
2. EDT 580 is a prerequisite for EDT 592.
3. EDT 590 and 580 are prerequisites for EDT 588.
4. EDT 587 is a recommended elective.

**READING SUPERVISOR (K-12)**

Quarter Hours

EDT 545	Advanced Developmental Reading .....	4
EDT 546	Research in Reading Instruction .....	4
EDT 547	Diagnosis of Reading Difficulties .....	4
EDT 548	Practicum in Diagnosis Reading .....	4
EDT 549	Supervision and Curriculum: Reading .....	4
EDT 504	Human Development and Education .....	4

OR

EDC 531	Dynamics of Personality .....	4
EDT 577	Library Materials for Children and Adolescents .....	4

**Note**

EDT 545 is the prerequisite for all other reading courses.

**READING TEACHER (K-12)**

Quarter Hours

EDT 545	Advanced Developmental Reading .....	4
EDT 546	Research in Reading Instruction .....	4
EDT 547	Diagnosis of Reading Difficulties .....	4
EDT 548	Practicum in Diagnosis of Reading .....	4
EDT 504	Human Development and Education .....	4

OR

EDC 531	Dynamics of Personality .....	4
— —	Approved Electives .....	8

**Note**

EDT 545 is the prerequisite for all other reading courses.

**SECONDARY EDUCATION***Quarter Hours*

— —	Approved Concentration Courses .....	16
— —	Approved Electives .....	12

**Note**

*The concentration may be subject-related (i.e. Social Studies, Business, English, etc.) or directed toward developing instructional strategies (i.e. individualized instruction, learning styles, media, etc.). The concentration and elective courses must be decided by the student and the advisor.*



James E. Gay.  
*Department of Teacher Education.*

**COURSES OF INSTRUCTION**

**EDT 500. MODELS OF TEACHING:** Analyze and experiment with models of teaching that are useful in studying classroom interaction and evaluating teaching-learning performance. *4 qtr. hrs.*

**EDT 501. LEARNING THEORY AND EDUCATION:** Study of contemporary learning theories such as Behaviorism, Gestalt and cognitive-field psychologies. Interpretations are made for teaching methodology, educational administration, counseling, and psychological services. *4 qtr. hrs.*

**EDT 502. PHILOSOPHICAL STUDIES IN EDUCATION:** Study of writings of major philosophers as they relate to education (including those in the Marianist tradition). Interpretations are made for the development of a critical, personal theory of teaching, counseling and educational administration. *4 qtr. hrs.*

**EDT 503. EDUCATIONAL RESEARCH METHODOLOGY:** Study of educational research design, proposal writing, ERIC and other bibliographic sources, and techniques for conducting research in teaching, administration, and counseling. *4 qtr. hrs.*

- EDT 504. HUMAN DEVELOPMENT AND EDUCATION: Study of contemporary developmental theories such as those of Piaget, Kohlberg, Erikson, and Lewin with interpretations made for teaching methodology, educational administration, counseling and psychological services. *4 qtr. hrs.*
- EDT 505. HUMAN RELATIONS IN EDUCATION: Ways of working with people regardless of race, political affiliation, age, sex, socioeconomic status, or level of academic achievement. *3 qtr. hrs.*
- EDT 506. VALUES CLARIFICATION AND MORAL DEVELOPMENT: Study of the theories and techniques of clarifying values and educating for morality. Such theorists as Simon, Kohlberg, Hall and others are studied. Students participate in a variety of values clarification and moral education exercises. *4 qtr. hrs.*
- EDT 507. TEACHING AND LEARNING STYLES: Presentation of the research on learning styles and teaching styles. Interpretations are made for teaching methodology, educational administration and counseling. *4 qtr. hrs.*
- EDT 508W. CURRENT CONTROVERSIES IN EDUCATION: Study of selected controversies in education as they relate to policy and practice. *2 qtr. hrs.*
- EDT 509. COMPARATIVE EDUCATION: Comparative study of educational systems from around the world. Special attention is given to contrasting other educational systems with those in the United States. When possible, this course is conducted abroad. *4 qtr. hrs.*
- EDT 510. POLITICS OF EDUCATION: Study of educational policy-making at the local, state and federal levels. Specific attention is given to the interdependence of these levels as related to contemporary issues. *4 qtr. hrs.*
- EDT 511. HISTORY OF EDUCATION IN THE UNITED STATES: Study of the development of education from the Colonial period to the present with the examination of such issues as pluralism, complexity, and comprehensiveness. *4 qtr. hrs.*
- EDT 512. HISTORY OF HIGHER EDUCATION IN THE UNITED STATES: Study of the development of post-secondary education in the United States from the Colonial period to the present with special emphasis on topics such as liberal arts, vocational preparation, and community colleges. *4 qtr. hrs.*
- EDT 517. INTRODUCTION TO PRE-KINDERGARTEN EDUCATION: A beginning course in early childhood education. Characteristics of young children are discussed, and research in the area of early childhood education is examined. *4 qtr. hrs.*
- EDT 518. KINDERGARTEN-PRIMARY CURRICULUM AND INSTRUCTION: Considerations to designing and teaching the various areas of the curriculum to promote meaningful learning experiences for young children. *4 qtr. hrs.*
- EDT 519. MATERIALS FOR KINDERGARTEN - PRIMARY INSTRUCTION: The examination, development and evaluation of materials for use in kindergarten-primary instruction. *4 qtr. hrs.*
- EDT 520. PRACTICUM IN PRE-KINDERGARTEN: Observation and participation in early childhood centers. Prerequisite: EDT 517. *4 qtr. hrs.*

- EDT 521. STUDENT TEACHING — KINDERGARTEN 4 qtr. hrs.
- EDT 526. MATHEMATICS IN THE ELEMENTARY SCHOOL: Course for teachers and administrators dealing with modern math programs and developments. Demonstration of how patterns of mathematical thought can be acquired by students. 3 qtr. hrs.
- EDT 527. SCIENCE IN THE ELEMENTARY SCHOOL: Understanding the challenge of the newer developments of science for the elementary school program. Study of the objectives of elementary science and of the selection and grade placement of subject matter. 4 qtr. hrs.
- EDT 528. TEACHING IN THE ELEMENTARY SCHOOL: Study of the role of the teacher in the classroom including human relations, assessment, instruction, and evaluation of teaching. 4 qtr. hrs.
- EDT 529. STUDENT TEACHING — ELEMENTARY 10-14 qtr. hrs.
- EDT 535. EDUCATIONAL MEDIA: A study of materials, equipment, and technology in education. Actual use and evaluation in the classroom. 4 qtr. hrs.
- EDT 536W. MEDIA: NEWSPAPER IN THE CLASSROOM: This workshop shows educators how a newspaper can be used to teach "media literacy" and academic skills to elementary, junior high, and high school students. 4 qtr. hrs.
- EDT 537. MEDIA: TELEVISION AND TEACHING: An examination of the impact of television on the education of children. Implications are made for teaching methods, curriculum, educational administration, and counseling. 2 qtr. hrs.
- EDT 538. INTRODUCTION TO COMPUTERS: An introductory course for those students who have had no experience with a microcomputer. Focuses on such simple concepts as how to turn a computer on, how to use commercial software, etc. 1-2 qtr. hrs.
- EDT 539. COMPUTERS IN EDUCATION: Primary focus is on how classroom teachers can utilize both microcomputers and mainframe computers as tools to aid them in the classroom. 4 qtr. hrs.
- EDT 540. ADVANCED COMPUTERS IN EDUCATION: Focus is on design of instruction utilizing computers in the classroom. *Logo* and Word Processing for the teacher are introduced. Prerequisite: EDT 539 or CPS 502. 4 qtr. hrs.
- EDT 541. METHODS: COMPUTERS IN EDUCATION: Focus is on how to use computers in classrooms to facilitate student cognitive development. Prerequisite: EDT 541 or its equivalent. 4 qtr. hrs.
- EDT 543. LIBRARY MATERIALS FOR CHILDREN AND ADOLESCENTS: The study and evaluation of literature and other library materials for children and adolescents. Emphasis on familiarization and evaluative criteria. 4 qtr. hrs.
- EDT 545. ADVANCED DEVELOPMENTAL READING: The psychological and sociological basis in reading. Attention to linguistics, materials, skills, literature, and evaluation. This is a prerequisite for other courses in the Reading sequence. For those in Special Education, it must be taken prior to EDT 592 or EDT 595. 4 qtr. hrs.

EDT 546. RESEARCH IN READING INSTRUCTION: A basic course for teachers concerned with the psychology of learning reading and with current problems and trends in reading and children's literature. *4 qtr. hrs.*

EDT 547. DIAGNOSIS OF READING DIFFICULTIES: Study and use of informal and formal diagnostic tools for determining reading levels for remedial or advanced reading skills. Prerequisites: EDT 545 and EDT 546. Corequisite: EDT 548. *4 qtr. hrs.*

EDT 548. PRACTICUM IN DIAGNOSIS OF READING: Laboratory portion of EDT 547. Corequisite or Prerequisite: EDT 547. *4 qtr. hrs.*

EDT 549. SUPERVISION AND CURRICULUM IN READING: Study of selected curricula and the process of planning a sound curriculum in reading at various levels. Outline of the role of the reading supervisor, providing guidelines for effective implementation of programs. Prerequisite: EDT 545 and EDT 546. *4 qtr. hrs.*

EDT 553. TOPICS IN READING: This course is designed for teachers and supervisors. It will consist of readings, discussion and written reports on the most recent topics in reading. *1-4 qtr. hrs.*

EDT 554. ADVANCED SECONDARY SCHOOL READING IMPROVEMENT: To provide middle, junior high, and senior high school teachers with knowledge and selected skills for improving reading and other language-arts skills of their students in the content areas. Causes and diagnosis of reading problems. Practicum included. Designed for students seeking initial certification. *3-4 qtr. hrs.*

EDT 558. JUNIOR HIGH AND MIDDLE SCHOOLS — THEORY AND IMPLICATIONS: The development and rationale of schools designed for the emerging adolescent; procedures by which these theories can be implemented in the classroom. *4 qtr. hrs.*

EDT 559. INTERDISCIPLINARY TEACHING: Study of the basic principles, problems, and alternatives in team teaching and interdisciplinary education, exploration and evaluation of curriculum materials. *4 qtr. hrs.*

EDT 562. ENGLISH AND SPEECH IN THE SECONDARY SCHOOL: Ways and means whereby the teacher can make teaching more functional in the lives of students. *4 qtr. hrs.*

EDT 563. SOCIAL STUDIES IN THE SECONDARY SCHOOL: Aims and values of social studies in high school. General method and special techniques. *4 qtr. hrs.*

EDT 564. FOREIGN LANGUAGE TEACHING: The functions and values of language study, courses of study, organization of materials, conventional and progressive methods. *4 qtr. hrs.*

EDT 565. MATHEMATICS IN THE SECONDARY SCHOOL: The goals of junior and senior high school mathematics; methods and materials; individualizing instruction. *4 qtr. hrs.*

EDT 566. RELIGION IN THE SCHOOL: Modern methods of instruction in religion in the school with a view to the needs of children and adolescents. *4 qtr. hrs.*

EDT 567. SCIENCE IN THE SECONDARY SCHOOL: Instructional methods and materials with emphasis on inquiry, individualizing instruction. 4 qtr. hrs.

EDT 570. SCHOOL, SELF, AND SOCIETY: Examination of the interrelationships between school, self, and society, utilizing group procedures when possible. 4 qtr. hrs.

EDT 571. BUSINESS EDUCATION IN THE SECONDARY SCHOOL: Principles and techniques of business education, including social, business, and secretarial subjects. 4 qtr. hrs.

EDT 572. STUDENT TEACHING — SECONDARY: A full term of clinical and directed teaching experiences under the supervision of a faculty advisor and of master teachers in local schools. Weekly seminar on campus. 10-14 qtr. hrs.

EDT 575. STUDY OF GIFTED AND TALENTED STUDENTS: Examination of how different disciplines (e.g. Sociology, Psychology) can help educators understand the nature of gifted and talented students. 4 qtr. hrs.

EDT 576. TEACHING THE GIFTED AND TALENTED: A course designed for teachers, administrators and counselors to familiarize them with programs for the gifted and talented. Curriculum, instructional materials, and teaching strategies are examined and developed. 4 qtr. hrs.

EDT 577. STUDENT TEACHING: GIFTED: Student teaching with gifted children/adolescents and a weekly seminar which focuses on problems and opportunities for the teacher of the gifted. 5 qtr. hrs.

EDT 578. SPECIAL TOPICS IN GIFTED EDUCATION: A seminar which permits educators of the gifted to focus on current issues, problems, etc. in gifted education. 4 qtr. hrs.

EDT 580. PSYCHOLOGY AND EDUCATION OF THE RETARDED: A survey course giving a broad overview of mental retardation. Includes curriculum planning and practicum. Prerequisite: EDT 590. This is also a prerequisite for other courses in the DH sequence including EDT 587 and EDT 592. 4 qtr. hrs.

EDT 581. STUDENT TEACHING: EMR: Prerequisite: EDT 580, EDT 587, and EDT 592. 4-8 qtr. hrs.

EDT 582. STUDENT TEACHING: MSPR 4-8 qtr. hrs.

EDT 587. CAREER DEVELOPMENT: SPECIAL EDUCATION: Techniques of classification, selection and placement of work experiences, including those for adults. Prerequisite: EDT 580. This is a prerequisite for EDT 581 and EDT 582. 3 qtr. hrs.

EDT 588. EDUCATING PARENTS OF EXCEPTIONAL CHILDREN: Techniques and methods for helping parents accept and plan for the handicapped child. 4 qtr. hrs.

EDT 589. EDUCATION OF THE MULTI-HANDICAPPED: Problems, program development, and educational needs of the multi-handicapped. Pre-school to adulthood. Prerequisites: EDT 580, EDT 596. 3 qtr. hrs.

EDT 590. INTRODUCTION TO EXCEPTIONALITIES: A survey of the several groups of pupils that are characterized as exceptional children. This is a prerequisite for all course work in DH, LD, and MSPR. *4 qtr. hrs.*

EDT 592. CURRICULUM MATERIALS AND INSTRUCTIONAL PROCEDURES FOR TEACHING THE MENTALLY RETARDED: Preparation, selection and adaptation of instructional materials; multi-factored assessment and evaluation techniques relative to placement and individual programming. Practicum and clinical experiences are included. This is a prerequisite for EDT 581 and EDT 582. *6 qtr. hrs.*

EDT 593. EDUCATING STUDENTS LD/BD: In-depth study of the nature and characteristics of human beings who are labelled learning disabled/behavior disordered. *4 qtr. hrs.*

EDT 594. DIAGNOSTIC TEACHING IN LD/BD: A course to provide functional knowledge about sensori-motor, perceptual-motor development, memory, language and basic cognitive skills based on theoretical implications. Prerequisite: EDT 590, 593 and 596. Concurrent with EDT 595. *4 qtr. hrs.*

EDT 595. STUDENT TEACHING: LD/BD: Student teaching of the specific learning disabled; supervised experiences. Prerequisite: EDT 590, 593, 594, 596 and EDT 544 or EDT 545.

EDT 596. CLASSROOM STRUCTURE AND BEHAVIOR MANAGEMENT: Application of methods of observing, recording, and measuring human behavior with emphasis on behavior management techniques for the developmentally disabled and for children with learning disabilities and behavior disorders. *4 qtr. hrs.*

EDT 597. SPECIAL TOPICS — SPECIAL EDUCATION: A seminar that permits students to focus on topics of current issues that are not covered in the regular curriculum. *1-4 qtr. hrs.*

EDT 604. SPECIAL TOPICS IN VOCATIONAL EDUCATION: A course which permits teachers as individuals or in small groups to examine with a faculty member current topics of interest in vocational education. *3-4 qtr. hrs.*

EDT 607. VOCATIONAL BUSINESS AND OFFICE EDUCATION — IOC/COE: A qualifying course for VBOE (Vocational Business and Office Education) Certificate. Covers the objectives, background, curriculum, student-teacher relations, community needs, equipment, facilities, state criteria, public relations, youth groups, advisory committees, adult programs, vocational reports and PRIDE. (Vocational certification requires one year or equivalent of business/office work experience.) *6 qtr. hrs.*

EDT 611. ECONOMICS EDUCATION: A course designed to acquaint educators with basic economic concepts through the discussion of current economic issues. Attention will be placed on instructional strategies and curriculum for teaching economic awareness. *4 qtr. hrs.*

EDT 612. CAREER EDUCATION IN COMMUNITY: A workshop designed for educators to enable them to develop instructional strategies and curriculum for career choices. *3 qtr. hrs.*

EDT 619. ART IN THE ELEMENTARY SCHOOL: Study of instructional content, materials, lesson planning and evaluation for teaching art in the elementary school. *3 qtr. hrs.*



EDT 620. ADVANCED PAINTING INSTRUCTION: This course is designed for art educators who have completed EDT 619. Course will enable art educators to learn techniques for teaching students with a good painting background. 1-4 qtr. hrs.

EDT 622. SPECIAL TOPICS: ART EDUCATION: Seminar which permits art educators to focus on topics of current interest not covered in the regular curriculum. 1-4 qtr. hrs.

EDT 626. MUSIC IN THE ELEMENTARY SCHOOL: Study of the concepts of music and the means of presenting them in the elementary school. 3 qtr. hrs.

EDT 627. VOCAL MUSIC IN HIGH SCHOOL: Study of instructional content, instructional strategies, etc. for the vocal music educator in the secondary school. 4 qtr. hrs.

EDT 628. SPECIAL TOPICS: MUSIC EDUCATION: A seminar in which current issues, problems, etc. are studied by music educators. 1-4 qtr. hrs.

EDT 634. RESEARCH AND MATERIALS IN SCIENCE INSTRUCTION: Study of research in contemporary science instruction, materials, and curriculum. 4 qtr. hrs.

EDT 635. RESEARCH AND MATERIALS IN SOCIAL STUDIES INSTRUCTION: Study of significant research of social studies instruction, materials, and curriculum. 4 qtr. hrs.

EDT 636. RESEARCH AND MATERIALS IN MATHEMATICS INSTRUCTION: Study of research in contemporary mathematics instruction, materials, and curriculum. 4 qtr. hrs.

EDT 637. TEST CONSTRUCTION AND MEASUREMENT: Study of the basic elements of constructing and analyzing tests, using simple statistical procedures for evaluating students, preparing and evaluating test items and interpreting standardized test scores. 2 qtr. hrs.

EDT 638. EDUCATIONAL STATISTICS: Study of basic statistics used to describe groups of inferential statistics for determining parameters in observed samples, and of formulating valid inferences and interpretations. 4 qtr. hrs.

EDT 639. EDUCATIONAL RESEARCH DESIGN: Study of the techniques for organizing and managing an educational research project. Designed to assist students in setting up their research project. 4 qtr. hrs.

EDT 640. INTERNSHIP IN EDUCATIONAL RESEARCH AND EVALUATION: Participation in actual school-related research or evaluation activities in the Office of Educational Services, in elementary or secondary schools, or in higher education. Emphasis is on all activities of research and evaluation from conceptualization to final reporting. 4-8 qtr. hrs.

EDT 645. INDIVIDUAL STUDY IN TEACHING: An opportunity for students (independently or in a small group) to investigate an area normally not contained in existing courses. (With approval of advisor.) 1-4 qtr. hrs.

EDT 646. SPECIAL TOPICS IN TEACHING: Issues of current national or regional interest to teachers (i.e. accountability, testing of teachers, etc.) are studied. 1-4 qtr. hrs.

- EDT 647. SPECIAL TOPICS IN FAMILY AND SCHOOL: Presentation and evaluation of methods of improving the communication between the home and school.  
*2-4 qtr. hrs.*
- EDT 648. TECHNIQUES IN HOSPITAL INSTRUCTION: Presents purposes, methods and materials for effective hospital instruction.  
*1-4 qtr. hrs.*
- EDT 650. CURRENT INNOVATIONS IN EDUCATION: An update on recent developments in curriculum and instructional strategies.  
*4 sem. hrs.*
- EDT 654. TEACHING IN CATHOLIC SCHOOLS: Study of aims, rationale, curriculum, methodologies in light of Catholic theology and philosophy.  
*3 qtr. hrs.*
- EDT 655. COLLEGE TEACHING SEMINAR: To assist graduate teaching assistants and beginning college teachers in acquiring information, understandings, and skills which are seen as important components of effective teaching; to provide experienced college faculty with a means of professional development.  
*1-4 qtr. hrs.*
- EDT 660. STUDENT TEACHING: OUTDOOR EDUCATION: Student does practice teaching at an outdoor education center. Focuses not only on the content and methodology of outdoor education but also classroom preparation for and follow-up activities after in the regular classroom.  
*4 qtr. hrs.*
- EDT 662. DISCIPLINE SKILLS IN THE CLASSROOM: A course designed to familiarize educators with the various theories and strategies used successfully to improve the performance of students.  
*3-4 qtr. hrs.*
- EDT 664. SUPERVISION OF STUDENT TEACHING: Demonstration of procedures and use of instruments to determine and guide the student teacher's progress.  
*3 qtr. hrs.*
- EDT 663W. FUTURISM AND EDUCATION: An examination of current trends in education to detect future directions.  
*2 qtr. hrs.*
- EDT 670. MASTER'S PROJECT: The culminating course in the Teacher Education Program. Individually or with a small group of students, the student undertakes a demonstration, evaluation, or research project in the area of the student's concentration. An individual full-time faculty member in the Department of Teacher Education acts as advisor. EDT 500, 502, 503 and at least three-fourths of concentration courses need to have been completed prior to registration for EDT 670. See Department of Teacher Education's *Master's Project Handbook* for more information.  
*5 qtr. hrs.*
- EDT 803. RESEARCH I: A research course for students in the Educational Specialist program.  
*3 qtr. hrs.*



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# X SCHOOL OF ENGINEERING

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Gordon A. Sargent, Dean  
Gary A. Thiele, Associate Dean and Director of  
Graduate Engineering Studies and Research

The School of Engineering offers programs leading to Master's and Doctor's degrees in various areas of Engineering. These graduate programs permit both departmental and interdisciplinary study to meet the specialized and continuing educational needs of the engineer. Sufficient flexibility allows the student to specialize or to pursue a broad field of study. Current graduate programs in the School of Engineering lead to the following degrees:

- Master of Science in Aerospace Engineering
- Master of Science in Chemical Engineering
- Master of Science in Civil Engineering
- Master of Science in Electrical Engineering
- Master of Science in Electro-Optics
- Master of Science in Engineering
- Master of Science in Engineering Management
- Master of Science in Materials Engineering
- Master of Science in Mechanical Engineering
- Master of Science in Management Science

- Doctor of Engineering
  - Major in Aerospace Engineering
  - Major in Electrical Engineering
  - Major in Materials Engineering
  - Major in Mechanical Engineering

- Doctor of Philosophy in Engineering
  - Major in Aerospace Engineering
  - Major in Electrical Engineering
  - Major in Materials Engineering
  - Major in Mechanical Engineering

Programs and the courses appropriate to each of these degrees are described later in this chapter under subject designations, which are alphabetical.



Gordon A. Sargent, Dean.  
*School of Engineering.*

## **ASSISTANTSHIPS AND FELLOWSHIPS**

Assistantships and fellowships are available at the University of Dayton for the encouragement of graduate work and the promotion of research. These are administered by the academic departments. Detailed information relative to application may be secured from the director of graduate Engineering studies.

## **MASTER'S DEGREE REGULATIONS**

### **Admission Requirements**

To be considered for admission to graduate study in the School of Engineering a student must have received an undergraduate degree with emphasis in Engineering, Physics, Chemistry, or applied Mathematics. Part of the normal qualification for admission is graduation from an accredited Engineering curriculum with 2.7 or better cumulative grade point average based on a 4.0 grading system. Those with lower grade point averages will be considered for acceptance on a probationary status, in which case particular attention will be given the last 60 semester hours of their undergraduate programs, to recommendations and to engineering experience. They may also be required to take a limited amount of undergraduate work. Students who have degrees in Physics, Chemistry, applied Mathematics or related sciences are encouraged to apply, but they too may be required to take a limited amount of undergraduate work to complete their preparation for graduate study in the School of Engineering. Students are expected to have some competence in computer programming and the engineering sciences, and to be familiar with the engineering design process. In addition, there may be special departmental requirements. The minimum Mathematics requirement for admission is three semester hours in differential equations.

## **Unclassified Status**

Students may also be accepted in unclassified graduate status. They will be considered as students of the School of Engineering who have not been admitted to a graduate degree program. A student can transfer a maximum of only two courses taken in this status to a program of study for a degree without pre-enrollment approval from the director of graduate Engineering. An unclassified student planning to seek a degree should complete an application for graduate study to assure that the courses taken are acceptable and compatible with degree requirements.

## **Advising**

Each candidate for the Master's degree shall be assigned to an advisor by the departmental chairperson or the program director. The advisor shall be agreed upon by the student and approved by the director of graduate Engineering. The duties of the advisor are to assist the student in the preparation of a plan of study and to advise the student during graduate work. An advisor should be appointed prior to initial registration for graduate studies but no later than the end of the first semester. A change of advisor at a later date is permissible upon the request of the student and approval of the departmental chairperson or program director and the director of graduate Engineering.

## **PROGRAM REQUIREMENTS**

### **Plan of Study**

The individual plan of study for the degree shall include the specific courses the student is expected to complete and reflect all other requirements of the particular Master's degree being sought. The plan of study must be filed with the director of graduate Engineering prior to the pre-enrollment date for the 16th graduate semester hour. All copies must be approved by the advisor, the program director, and the director of graduate Engineering.

### **Thesis**

Each student whose plan of study requires a thesis must prepare the thesis in accordance with the general format outlines in the *Manual for the Preparation of Graduate Theses and Dissertations*, copies of which are available in the Office for Graduate Studies, 200 St. Mary's Hall. In general, the thesis will be based on work accomplished in research in the primary area of study. Joint authorship is not permitted. A regular grade will be assigned upon satisfactory completion of the thesis and will be included in the final cumulative grade point average.

### **Oral and Written Examinations**

A final examination is required at the completion of the thesis. The examination may be oral or written or both. It must be given by a committee of no fewer than three. A student who fails to pass it cannot be given another examination in the same semester. No student shall be allowed to take the examination more than three times.

## Academic Standards

Graduate students are expected to do high caliber work at all times and to demonstrate continuing progress toward the degree which requires that students maintain a minimum average of B (3.0) in course work with no more than two grades of C permitted. Students who fail to meet these requirements are either placed on academic probation or dismissed from the program.

## FIVE-YEAR MASTER'S PROGRAM

Undergraduate students who have shown above average scholastic performance during their first three years of undergraduate work are eligible to pursue the five-year Master's program. This program allows the senior Engineering student the opportunity of taking selected graduate courses, making it possible to complete the requirements for a Master's degree with only two semesters of additional work beyond the Bachelor's degree. Undergraduate students who are interested in this program should contact their department chairperson during the last semester of their junior year.

## DOCTOR'S DEGREE REGULATIONS

The School of Engineering offers programs leading to two degrees at the doctoral level, the *Doctor of Philosophy in Engineering* and the *Doctor of Engineering*. The programs are restricted to those who have demonstrated superior abilities in scholarship and research. The Doctor of Philosophy in Engineering (*Ph.D.*) is granted in recognition of high achievement in scholarship and independent research. Graduate programs leading to the Ph.D. degree currently encompass major fields of study in Aerospace, Electrical, Materials, and Mechanical Engineering. The Doctor of Engineering (*D.E.*) granted in recognition of high achievement in scholarship and superior ability to apply the fundamentals of Engineering to the solution of technical problems, is comparable in rigor to the *Ph.D.* It requires a broad program of course work, a year of internship in Engineering, and a practice-oriented dissertation. These last two can be accomplished at the same time. The areas of concentration for the *D.E.* are Aerospace, Electrical, Materials, and Mechanical Engineering with major support from Chemical Engineering, Civil Engineering, and Engineering Management. Interdisciplinary study and applied research activities are required.

## PROGRAM REQUIREMENTS FOR THE *Ph.D.* AND *D.E.* DEGREES

### Semester-Hour Requirements

The minimum time required for the *Ph.D.* or *D.E.* degree is six semesters of full-time graduate study (a minimum of 90 semester hours) beyond the Bachelor's degree, or four semesters of full-time graduate study (a minimum of 60 semester hours) beyond the Master's degree. This includes the credit for the doctoral dissertation *with either degree* (a minimum of 30 semester hours).

Registration for the dissertation hours is the same as for other courses; however, only those students who have passed the candidacy examination are eligible. A minimum of 48 semester hours must be taken at this University. Also, a minimum of 12 semester hours in graduate Mathematics beyond the Bachelor's degree is required for both doctoral degrees. The following specific requirements may also apply:

*For the Ph.D.*, a student must complete a minimum of 30 semester hours, excluding the dissertation credit, in the major area of study beyond the Bachelor's degree.

*For the D.E.*, a student is required to have a major and minor area of study. The minor must be in an area outside the major field. A minimum of 21 semester hours in the major and 12 semester hours in the minor is required beyond the Bachelor's degree.

For either degree, the student must satisfactorily complete a specified number of semester hours of course work with a 3.0 or better cumulative grade point average (based on a 4.0 grading system). However, a grade of F in any individual course may be grounds for dismissal from the program. The student must also:

- (1) pass the candidacy examination,
- (2) meet the period of concentrated study requirements,
- (3) complete an acceptable dissertation,
- (4) complete the tools of research requirement,
- (5) demonstrate the ability to accomplish independent study,
- (6) pass a final examination, and
- (7) complete other requirements as specified by the advisory committee and the Graduate School of Engineering.

## **Admission**

Admission means only that the student will be permitted to enroll for graduate courses. It does not necessarily imply that the student will be admitted to a program leading to a Doctor's degree or will be able to achieve the *Ph.D.* or the *D.E.*

Normally, a student must earn a Master's degree in Engineering or science before being granted permission to continue graduate study work for the Doctorate. Outstanding students, however, may be permitted to work for either doctoral degree directly without the Master's degree.

## **Notice of Intention**

Before taking additional courses after completing the requirements for a Master's degree or equivalent graduate hours, a student who expects to work to the *Ph.D.* or *D.E.* is required to file a "Notice of Intention" in the Graduate School of Engineering. Unless this is accomplished, the courses taken beyond the Master's degree requirement may not be accepted toward a doctoral degree. The Notice of Intention must be filed prior to mid-term of the first semester of enrollment. The proper form may be obtained in the Graduate School of Engineering.



### **Temporary Advisor**

After receipt of the notice of intention of a student to become a candidate for either the *Ph.D.* or the *D.E.*, and upon recommendation of the program director, the director of graduate Engineering will designate a member of the graduate faculty to serve as temporary advisor to the student and assist in the initial selection of courses for the first semester of enrollment.

### **Qualifying Examination**

After the completion of the Master's degree or 30 semester hours of graduate study, the student will take a qualifying examination (which may be waived for the exceptional student). The purpose of the examination is to determine the student's qualifications to continue graduate study and to assist the advisory committee in planning the program of study. The examination shall be written and oral. It shall test the student's mastery of the subject matter of graduate courses taken and the student's ability to conduct research, to reason, and to integrate and express knowledge. The student is required to provide evidence of personal research accomplishments (e.g., thesis, research projects, science and engineering technical reports) as part of the examination. The temporary advisor will be responsible for administering the qualifying examination.

### **Advisory Committee**

Before the end of the first semester, the student should consult with the program director and select a major professor to serve as the chairperson of the advisory committee and to direct the research. The chairperson will be a member of the School of Engineering graduate faculty. An advisory committee of at least three graduate faculty members from the School of Engineering will then be recommended for approval to the director of graduate Engineering. The composition of the committee will generally reflect the student's area of course study and research interest. At least one person having graduate faculty status will be appointed by the director of graduate Engineering. The duties of the advisory committee shall consist of: (1) advising the student, (2) assisting the student in preparing the complete program of study, (3) preparing and administering the candidacy examination, (4) assisting in the planning and conducting of the research, (5) approving the dissertation, and (6) conducting and reporting the results of the final examination. Appointment of additional members of the committee from outside the School of Engineering (i.e., other University faculty, adjunct professors, prominent researchers in industry or government) is encouraged. The majority of the committee, however, must be members of the School of Engineering graduate faculty. A dissertation advisor other than the chairperson may be appointed by the advisory committee.

## **Plan of Study**

The plan of study shall include all the graduate work the student is expected to complete as determined by his advisory committee. The plan of study is to be submitted to the School of Engineering before the end of the first semester or prior to the pre-enrollment date for the 16th graduate hour beyond the Master's degree or its equivalent. The plan shall include the specific courses and all other requirements (seminars, tools of research, research, etc.) which the student is expected to complete, indicating the time and manner in which these requirements are to be met.

## **Tools of Research**

The needs of the student may differ with the educational objectives chosen. Therefore, the tools of research requirement will be determined by the advisory committee and approved by the department chairperson or the program director. One from the following will be selected:

1. Command of one approved language, as evidenced by a satisfactory score on the Graduate Foreign Language Tests (GFLT) in French, German or Russian.
2. Completion of 6 semester hours of selected and approved 400-level or higher courses in Computer Science and/or instrumentation measuring techniques with at least a B average.
3. Completion of 6 semester hours of graduate courses in a defined area of Humanities and/or Social Sciences, related to the program of study objectives with the grade of B or higher.

Courses taken in completing the tools of research requirement will not carry credit toward the degree. The method selected in satisfying this requirement is to be listed in the plan of study. This requirement must be satisfied prior to the candidacy examinations.

## **Period of Concentrated Study**

After a student has filed a notice of intention, a period of concentrated study must be completed in order to be considered for the candidacy examination. This requirement can be met in either of two ways:

1. During three consecutive semesters, the student completes a minimum of 21 semester hours of graduate course work.
2. In any two of three consecutive semesters, the student completes a minimum of 18 semester hours of graduate course work.

## **Candidacy Examination**

The candidacy examination for either the *Ph.D.* or the *D.E.* is generally to be taken when most of the course work, as outlined on the approved plan of study, has been completed. Its purpose is to determine the student's eligibility to become a candidate for the Doctor's degree. The examination is comprehensive, covering the entire area of the student's graduate study. It will be both written and oral. The oral portion must follow the written portion

by a minimum of two weeks. At least three members of the School of Engineering graduate faculty must participate in the preparation and the administering of the examination under the direction of the advisory committee. The director of graduate Engineering has the right to appoint additional members to the examining committee, and must be informed of the date and place of the examinations and the membership of the committee at least two weeks before the examinations are given.

As part of the examination, the student must have completed a proposal outlining in detail the proposed area of dissertation study and research for the *Ph.D.* or of the applied research dissertation project for the *D.E.* The proposal should clearly show the review of the literature in the area, the need for and the uniqueness of the research and/or investigation, the general approach to accomplishing the effort, results expected, detailed costs, the laboratories and/or other facilities needed, and a schedule of completion. In addition, the proposal by the candidate for the *D.E.* will explain the interdisciplinary role of the investigation. The student in either degree program must make a copy of this proposal available to each committee member prior to the written examination.

**NOTE:** *the University of Dayton is not obligated to provide financial support for the research or investigation.*

The student must pass all parts of the examination (proposal, written examination, and oral examination) to be admitted to candidacy. The student is considered to have passed only when the decision of the examining committee is unanimous. All members must sign the examination report form with an indication of their decision noted prior to its being submitted to the director of graduate Engineering. If any part of the examination is failed, the student will be notified in writing of the conditions from another examination. No student will be permitted to take any part of the examination more than twice. A second examination may not be given earlier than four months after failure. Examinations will be retained by the chairperson of the advisory committee.

A student must be admitted to candidacy at least six months prior to receiving the Doctor's degree.

### **Internship for *D.E.* Degree**

The *D.E.* internship is a minimum of one year of high level practicing engineering experience, and is normally conducted after the student has passed the candidacy examination. The internship phase of the program must be fully described in the proposal submitted as part of the candidacy examination. The candidate's internship advisor (generally the supervisor at the student's interning organization) will be added as a member of the advisory committee. The internship, as part of the *D.E.* program of study, must be approved by the candidate's advisory committee, program director, and the director of graduate Engineering. From 15 to 21 semester hours can be credited for the internship as part of the dissertation requirement for the Doctor of Engineering.

## Dissertation

A dissertation is required of each doctoral candidate student who has passed the candidacy examination. The dissertation topic will be determined by the student in consultation with the advisor and approved by the advisory committee, the program director, and the director of graduate Engineering. *The Ph.D. dissertation* presents the results of the student's research investigation. It is expected to make an original contribution to technical knowledge, of sufficient importance to merit publication, and a manuscript suitable for submission to an appropriate journal will be prepared. *The D.E. dissertation* presents the results of an original investigation as applied to engineering practice. Normally, this will be related directly to the candidate's internship or problems relating to his or her engineering experience or work. It must be a significant contribution of independent engineering work to merit a doctoral level publication. A manuscript in suitable form for submission to an appropriate journal must be submitted to the Graduate School of Engineering along with the dissertation.

The dissertation will be prepared in accordance with instructions outlined in the Guide for Preparation of Dissertation, copies of which are available in the Graduate Engineering Office.

The first draft of the dissertation should be in the hands of the advisor a minimum of six weeks before the end of the semester the degree is sought. Four copies of the dissertation in final form, the dissertation, the journal manuscript, and an abstract not to exceed 350 words must be submitted to the Graduate School of Engineering at least three weeks before the end of the semester in which the degree is sought. These copies must bear the written approval of the advisor. The original copy of the dissertation and two copies of the abstract shall be filed in the Roesch Library one week prior to the end of the semester.

All doctoral dissertations are microfilmed by the University Microfilm, Inc., Ann Arbor, Michigan. The candidate must sign an agreement with the University Microfilms, Inc., which authorizes this firm to sell copies of his dissertation. Microfilmed dissertations may be copyrighted by the candidate. Fees will be assessed for the cost of copyrights.

The student must obtain approval from his advisory committee to undertake all or part of his dissertation in absentia. A report requesting this permission must be submitted to the director of graduate Engineering outlining in detail the relationship between the advisor and the candidate and the name and background of the person who will directly advise the candidate during the accomplishment of this independent research. This person will be added to his advisory committee.

Candidates must be registered for a minimum of two semester hours every semester during their candidacy including the semester the final examination is taken.

## **Final Examination**

After the dissertation has been accepted by the Graduate Engineering office but no earlier than six months after the successful candidacy examination, the candidate shall take a final oral examination to demonstrate to the examining committee that he has all the capabilities for which the Doctor's degree is awarded. This is primarily the defense of the dissertation, though it need not be confined exclusively to it. The examination is open to all members of the University of Dayton faculty and student body. At least ten days prior to the date of the examination, the candidate must have provided the committee with copies of the dissertation in final form and must have disseminated an announcement of the final examination to interested organizations.

The final examining committee normally includes the members of the candidate's advisory committee, with his advisor acting as chairperson. The final examining committee shall consist of at least four members of the graduate faculty, at least one of whom is not directly involved in the program concerned and is appointed by the director of graduate Engineering. The director of graduate Engineering reserves the right to appoint additional committee members and must be informed of the place and time of the final examination at least ten days in advance.

After the examination, the committee will report its decision to the director of graduate Engineering. In order to be satisfactory, the report of the examining committee must be unanimous and must be signed by all members. If the candidate fails by only one vote, the case will be referred to the Graduate Study Committee for appropriate action.

## **Time Limit**

Students are expected to complete the requirements for the Doctor's degree within five years after the candidacy examination has been passed. Failure to complete the requirements means that admission to candidacy will be cancelled.

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# AEROSPACE ENGINEERING (AEE)

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Franklin E. Eastep, Director of the Program

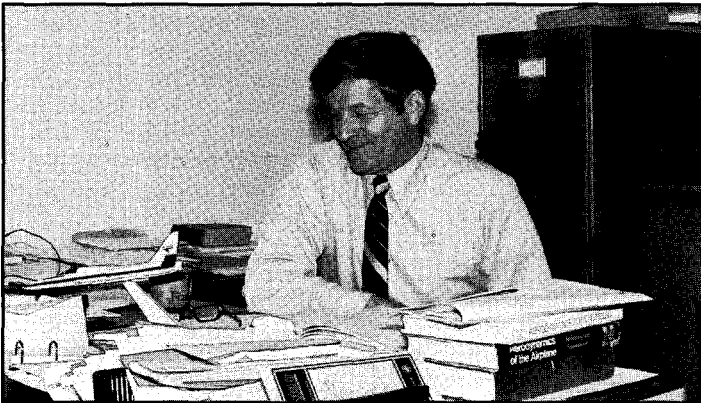
Aerospace Engineering is a major concentration for both the Doctor of Philosophy in Engineering and the Doctor of Engineering. See Doctor's Degree Regulations in the introductory section of this chapter and consult with the director of the program.

## PROGRAM REQUIREMENTS

The program of study leading to the Master of Science in Aerospace Engineering must include a minimum of 30 semester hours of credit consisting of the following:

1. Twelve semester hours in the major area. Major areas of study include Aerodynamics, Aircraft Propulsion, Aircraft Structures and Flight Vehicle Dynamics.
2. Twelve semester hours of core electives. Core electives will be selected from current course offerings which best satisfy the student's requirements and meet with the advisor's approval. At least one Mathematics course is strongly recommended.
3. Six semester hours of research on an approved project. Research projects may be replaced by 6 semester hours of additional course work with the approval of the advisor and the program director.

See also Master's Degree regulations in the introductory section of this chapter and consult with the director of the program.



Franklin E. Eastep.  
*Department of Aerospace Engineering.*

## COURSES OF INSTRUCTION

**AEE 500. INTRODUCTION TO NUMERICAL METHODS IN AEROSPACE ENGINEERING:** Numerical analysis topics include the solution of systems of linear and nonlinear algebraic equations; matrix eigenvalue problems; ordinary differential equations; optimization techniques; numerical integration and interpolation. Engineering applications presented. Computer programming required. 3 sem. hrs.

AEE 501. ADVANCED AERODYNAMICS I: Fundamentals of aerodynamics including viscosity and compressibility phenomena for subsonic, supersonic, and transonic flow. Emphasis on force and moment determination for bodies, including theory of lift.

3 sem. hrs.

AEE 502. ADVANCED AERODYNAMICS II: Advanced analytical development of compressible aerodynamics as applied to lifting surfaces and slender bodies. Approximations to lifting surface theory and numerical solution. Introduction to unsteady aerodynamics. Prerequisite: AEE 501.

3 sem. hrs.

AEE 503. INTRODUCTION TO CONTINUUM MECHANICS: Tensors, calculus of variations, Lagrangian and Eulerian descriptions of motion. General equations of continuum mechanics, constitutive equations of mechanics, thermodynamics of continua. Specialization to cases of solid and fluid mechanics. Prerequisite: EGM 303.

3 sem. hrs.

AEE 508. AIRCRAFT PERFORMANCE AND CONTROL: Elementary development of aircraft equations of motion; performance in level flight; climbing and descending performance; turning performance; takeoff and landing performance; static stability and control in all three axes. Prerequisite: AEE 501.

3 sem. hrs.

AEE 511. AIRCRAFT DESIGN: Preliminary design of aircraft, including layout, weight and size estimates, wing section and planform selection, determination of configuration aerodynamics, engine and inlet sizing, corrections to propulsion data, refined fuel estimates, weight and balance, stability and control, and performance determination. Prerequisite: AEE 508.

3 sem. hrs.

AEE 513. PROPULSION: Principles of propulsive devices, aerothermodynamics, diffuser and nozzle flow, energy transfer in turbo-machinery, turbojet, turbo-fan, propfan engines, turbo-prop and turboshaft engines. RAM and SCRAM jet analysis and a brief introduction to related materials and air frame-propulsion interaction. Prerequisite: MEE 418.

3 sem. hrs.

AEE 515. CONDUCTION HEAT TRANSFER: Steady state and transient state conduction. Evaluation of temperature fields by formal mathematics, numerical analysis, and analogic experiments.

3 sem. hrs.

AEE 516. CONVECTION HEAT AND MASS TRANSFER: Development of governing differential equations for convection. Methods of solution including similarity methods, integral methods, superposition of solutions, eigen-value problems. Turbulent flow convection; integral methods, eddy diffusivities for heat and momentum. Extensions to mass transfer. Prerequisite: MEE 410.

3 sem. hrs.

AEE 517. RADIATION HEAT TRANSFER: Fundamental relationships of radiation heat transfer. Radiation characteristics of surfaces. Geometric considerations in radiation exchange between surfaces. Emissivity and absorptivity of gases. Introduction to radiative exchange in gases. Prerequisite: MTH 403.

3 sem. hrs.

AEE 521. VEHICLE DYNAMICS: Dynamics of flight vehicles that emphasize the fundamental theory of flight and its application to aerospace systems. Static and dynamic stability including the characteristic longitudinal and lateral perturbation motions about the equilibrium state. Prerequisite: AEE 501.

3 sem. hrs.

**AEE 523. AUTOMATIC CONTROL:** Basic feedback control theory, transfer functions, stability analysis, Bode plots, Nyquist, root-loci, Routh's criteria. State space methods. Nonlinear systems, phase plane analysis, describing functions, Lyapunov stability analysis. Autopilots, stability augmentation, and flight control system. 3 sem. hrs.

**AEE 527. AUTOMATIC CONTROL THEORY:** Analysis and synthesis of feedback control systems; including hydraulic, pneumatic, mechanical and electrical systems. Frequency response; linear state space techniques; stability analysis; nonlinear system analysis and Liapunov stability. Prerequisite: ELE 432 or MEE 435 or equivalent. 3 sem. hrs.

**AEE 532. NOISE CONTROL:** Physics of sound propagation. Physiological and legal aspects of sound. Measurement and analysis of sound and vibrations. Vibration and sound control techniques, source modifications, path modifications, receiver modification. Acoustic considerations in machine design. Prerequisite: MTH 219. 3 sem. hrs.

**AEE 535. MECHANICAL VIBRATIONS:** Multi-degree of freedom systems. Lagrange's equations, transient vibrations, vibrations of continuous systems. Matrix and numerical methods. Introduction to finite element method; to nonlinear vibrations. Prerequisite: MEE 319. Corequisite: AEE 503. 3 sem. hrs.

**AEE 536. RANDOM VIBRATIONS:** Introduction to statistics, time and frequency domain analysis, excitation-response relations for linear systems, digital spectral analysis, approximations for narrow band processes, accuracy of measurements, applications in vibrations, vehicle dynamics, fatigue, etc. 3 sem. hrs.

**AEE 538. INTRODUCTION TO AEROELASTICITY:** The study of the effect of aerodynamic forces on a flexible aircraft. Flexibility coefficients and natural modes of vibration. Quasi-steady aerodynamics. Static aeroelastic problems; wing divergence and dynamic aeroelasticity; wing flutter. An introduction to structural stability augmentation with controls. 3 sem. hrs.

**AEE 543. MECHANICS OF COMPOSITE MATERIALS:** Analytical models are developed for predicting the mechanical and thermal behavior of fiber reinforced composites as a function of constituent material properties. Both continuous and discontinuous fiber reinforced systems are considered. Specific topics include basic mechanics of anisotropic materials, micromechanics, and lamination theory. 3 sem. hrs.

**AEE 544. STRUCTURAL BEHAVIOR OF COMPOSITES:** Comprehensive treatment of laminated plates and cylindrical shells. Bending, buckling, and vibration analysis are considered. Various orders of theory and their range of parametric application are emphasized. Thermal stresses are also considered. Prerequisite: AEE 543 or consent of instructor. 3 sem. hrs.

**AEE 546. FINITE ELEMENT ANALYSIS I:** Fundamentals of the Finite Element Method; interpolation functions; derivation of finite elements for bars, beams, plates, shells; isoparametric solid finite elements; isoparametric shell finite elements; natural vibration; elastic stability. Prerequisite: EGM 503 or 533. 3 sem. hrs.

**AEE 547. FINITE ELEMENT ANALYSIS II:** Advanced topics: heat transfer; transient dynamics; nonlinear analysis; substructuring and static condensation; effects of inexact numerical integration and element incompatibility; patch test; frontal solution techniques; selected topics from the recent literature. Prerequisite: EGM 546. 3 sem. hrs.



- AEE 551. **VISCOUS FLOW:** Fundamentals of viscous flow. Navier-Stokes and boundary layer equations. Exact and approximate solutions of these equations using modern computational procedures for both laminar and turbulent flows. Prerequisite: AEE 503. *3 sem. hrs.*
- AEE 553. **COMPRESSIBLE FLOW:** Fundamental equations of compressible flow. Introduction to flow in two and three dimensions. Two-dimensional supersonic flow, small perturbation theory, method of characteristics, oblique shock theory. Introduction to unsteady one-dimensional motion and shock tube theory. Method of surface singularities. Prerequisite: AEE 503. *3 sem. hrs.*
- AEE 554. **TRANSONIC AERODYNAMICS:** Inviscid theory related to planer flows, axisymmetric flow and shock free solutions. Viscous consideration for compressible boundary layers and flow separation and reattachment. Numerical methods of relaxation, time dependent, gradient dependent and integral solutions. Consideration, limitation and correlation of wind tunnel and flight testing. Design of supercritical wings. Prerequisite: AEE 503. *3 sem. hrs.*
- AEE 555. **TURBULENCE:** Random variable theory, Fourier transforms, power spectral density methods. Description of atmospheric turbulence, discrete gusts, homogeneous isotropic turbulence; gusts in several dimensions; power spectrum of atmospheric turbulence; turbulence due to trailing vortices. Air vehicle response to turbulence, output power spectrum, gust alleviations. Clear air turbulence. Unsteady aerodynamics. *3 sem. hrs.*
- AEE 556. **HYPERSONIC AERODYNAMICS:** Hypersonic prediction techniques, similarity rules, Newtonian impact theory, high temperature equilibrium properties of gases; wake characteristics; heat transfer, chemical kinetics and reacting gas flows, simulation and testing techniques. Prerequisite: AEE 503. *3 sem. hrs.*
- AEE 558. **COMPUTATIONAL AERODYNAMICS:** Numerical solution to Navier-Stokes equations and approximations such as the boundary layer equations for air-flow about a slender body. Numerical techniques for the solution of the transonic small disturbance equations. Numerical determination of fluid instabilities. Prerequisites: AEE 551 or consent of instructor. *3 sem. hrs.*
- AEE 565. **FUNDAMENTALS OF COMBUSTION:** Heat of combustion and flame temperature calculations; rate of chemical reaction and Arrhenius relationship; theory of thermal explosions and concept of ignition delay and critical mass; phenomena associated with hydrocarbon-air combustion; specific applications of combustion. *3 sem. hrs.*
- AEE 566. **COMBUSTION THEORY OF DETONATION:** (Rankine-Hugoniot relationships) and flame propagation rate in pre-mixed gas systems; turbulent flames and the well-stirred reactor; theory of diffusion flames; fuel droplet combustion; steady burning of solid materials; ignition and flame spreading across solid materials. *3 sem. hrs.*
- AEE 570. **FRACTURE MECHANICS:** Application of principles of fracture mechanics to fatigue and fracture in engineering structures. Prerequisite: MAT 502 or consent of instructor. *3 sem. hrs.*

**AEE 580. AEROSPACE ENGINEERING PROJECT:** Student participation in an aerospace research, design or development project under the direction of a project advisor. The student must show satisfactory progress as determined by the project advisor and must present a written report at the conclusion of the project. *3-6 sem. hrs.*

**AEE 590. SELECTED READINGS IN AEROSPACE ENGINEERING:** Directed readings in the designated area to be arranged and approved by the student's advisor and the program director. May be repeated. *1-3 sem. hrs.*

**AEE 595. SPECIAL PROBLEMS IN AEROSPACE ENGINEERING:** Special assignments in aerospace engineering subject matter to be approved by the student's faculty advisor and the program director. *1-6 sem. hrs.*

**AEE 599. THESIS** *3-6 sem. hrs.*

**AEE 612. ADVANCED APPLIED AERODYNAMICS:** Optimization of performance and controls, design trade studies, advanced methods for performance predictions, wind tunnel testing, flight testing, computer system design and simulation; analysis and validation of models and results, including design to cost consideration. *3 sem. hrs.*

**AEE 622. ADVANCED VEHICLE DYNAMICS:** Advanced topics in vehicle dynamics including the coupling of the elastic degrees of freedom with the rigid body motions. Response to controls, flight in a turbulent atmosphere, human pilots and handling qualities as well as inverse problems. *3 sem. hrs.*

**AEE 624. OPTIMAL CONTROL:** Feedback control, frequency and time domain, stability controllability, and observability; Bode plots, root-loci, Nyquist methods; variational calculus optimization; dynamic programming; Pontryagin's principles; numerical methods for optimal paths; optimal control in presence of noise; aerospace application. *3 sem. hrs.*

**AEE 628. AIRCRAFT FLIGHT CONTROL:** Autopilots, stability augmentation and flight control system analysis and design. Digital control theory and techniques. Prerequisites: AEE 521 and 527. *3 sem. hrs.*

**AEE 690. SELECTED READINGS IN AEROSPACE ENGINEERING:** Directed readings in aerospace engineering to be arranged and approved by the student's advisory committee and the program director. May be repeated. *1-3 sem. hrs.*

**AEE 695. SPECIAL PROBLEMS IN AEROSPACE ENGINEERING:** Special assignments in aerospace engineering. Subject matter to be arranged and approved by the student's advisory committee and the program director. May be repeated. *1-3 sem. hrs.*

**AEE 698. D.E. DISSERTATION:** An original investigation as applied to aerospace engineering practice. Results must be of sufficient importance to merit publication. *1-15 sem. hrs.*

**AEE 699. Ph.D. DISSERTATION:** Research in aerospace engineering. Results must be of sufficient importance to merit publication. *1-15 sem. hrs.*

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Department of  
**CHEMICAL ENGINEERING (CME)**

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Chairperson, to be announced

### **PROGRAM REQUIREMENTS**

The program of study leading to the Master of Science in Chemical Engineering must include a minimum of 30 semester hours of credit consisting of the following:

1. Fifteen semester hours of Chemical Engineering graduate courses, including CME 507, 521, and 581 or 582.
2. Nine semester hours of electives as approved by the advisor and the chairperson of the department.
3. Six semester hours on an approved thesis project. Upon the request of the student and with the approval of the faculty advisor and chairperson of the department, six hours of additional course work plus three hours of special problem work may be substituted for the thesis.

A final examination is required at the completion of the thesis or course work.

See also Master's Degree regulations in the introductory section of this chapter and consult with the advisor.

### **COURSES OF INSTRUCTION**

**CME 505. THERMODYNAMICS OF SOLIDS:** Thermodynamic properties of solutions and intermediate phases. Equilibrium of phase mixtures. Representation of multicomponent phase diagram. Experimental determination and prediction of phase diagrams. Prerequisite: MAT 502 or consent of instructor. *3 sem. hrs.*

**CME 507. ADVANCED THERMODYNAMICS:** Applications of the laws of thermodynamics-phase equilibria in ideal and nonideal systems-chemical equilibrium. *3 sem. hrs.*

**CME 508. ADVANCED TOPICS IN CHEMICAL ENGINEERING:** Study and discussion of current problems in chemical engineering research. Prerequisite: CME 521, 581, or consent of instructor. *3 sem. hrs.*

**CME 509. INTRODUCTION TO POLYMER SCIENCE:** Introduction to polymers. A largely nonmathematical survey of the field. Prerequisite: college Chemistry and Calculus. *3 sem. hrs.*

**CME 510. PHYSICAL PROPERTIES OF POLYMERS:** Intensive discussion of the interrelations between molecular and gross physical properties of polymers. Prerequisites: CME 509 or equivalent, background in differential equations. *3 sem. hrs.*

**CME 511. PRINCIPLES OF CORROSION:** Application of electrochemical principles, corrosion reactions, passivations, cathodic and anodic protection, stress corrosion, and high temperature oxidation. *3 sem. hrs.*

**CME 515. STATISTICAL THERMODYNAMICS:** Microscopic thermodynamics; kinetic theory; virial theorem of Clausius; transport phenomena; Gibbs, Boltzmann, Bose-Einstein, Fermi-Dirac statistics. Connection between statistical and thermodynamic quantities. Applications to perfect and real gases, liquids, crystalline solids, and thermal radiation. Information theory, irreversible thermodynamics. Prerequisites: CME 305, MTH 219.  
3 sem. hrs.

**CME 521. ADVANCED TRANSPORT PHENOMENA:** Applications of the principles of momentum and heat transfer to steady state and transient problems. Potential flow, boundary layer theory. Prerequisite: CME 581 or equivalent.  
3 sem. hrs.

**CME 522. SEPARATION PROCESSES:** A study of mass transfer in binary and multi-component systems. Absorption. Distillation. Extraction.  
3 sem. hrs.

**CME 541. PROCESS DYNAMICS:** Mathematical modeling and computer simulation of process dynamics and control for chemical engineering processes.  
3 sem. hrs.

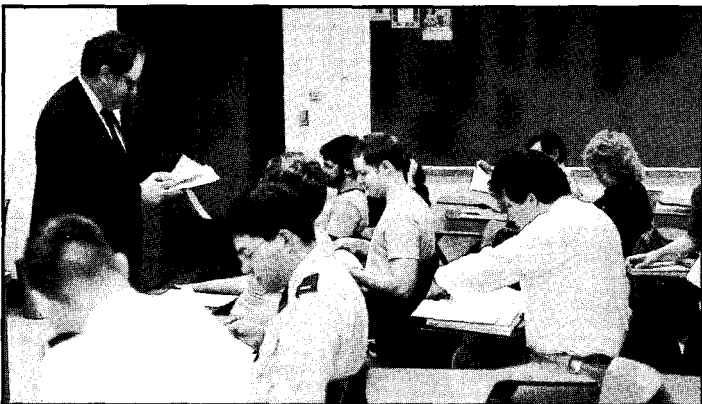
**CME 542. CHEMICAL ENGINEERING KINETICS:** Ideal and non-ideal reactor behavior. Fluid mixing. Fluid-particle reactions. Fluid-fluid reactions. Catalysis.  
3 sem. hrs.

**CME 581. ADVANCED CHEMICAL ENGINEERING CALCULATIONS I:** Applications of ordinary and partial differential equations to engineering problems. Classical methods of solution.  
3 sem. hrs.

**CME 582. ADVANCED CHEMICAL ENGINEERING CALCULATIONS II:** Analysis and design of processes and the solutions of the resulting differential equations by computer techniques.  
3 sem. hrs.

**CME 595. SPECIAL PROBLEMS IN CHEMICAL ENGINEERING:** Particular assignments to be arranged and approved by the chairperson of the department.  
1-6 sem. hrs.

**CME 599. THESIS** 3-6 sem. hrs.



Ronald A. Servais.  
Department of Chemical Engineering.

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Department of  
**CIVIL ENGINEERING (CIE)**

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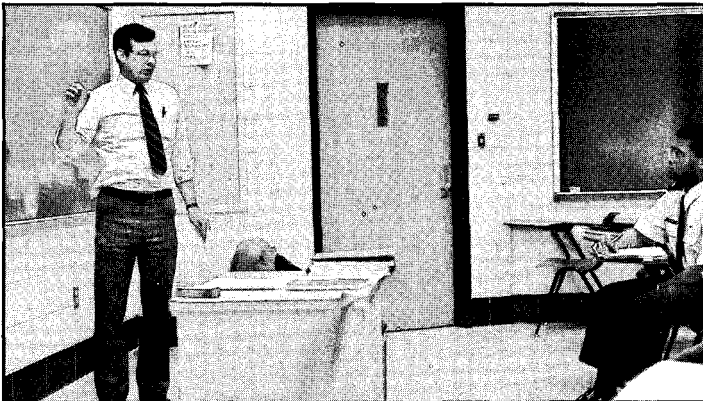
Fred K. Bogner, Chairperson of the Department

## PROGRAM REQUIREMENTS

The program of study for the degree of Master of Science in Civil Engineering, developed in cooperation with an advisor assigned by the department chairperson, must include a minimum of 30 semester hours consisting of the following:

1. Fifteen to eighteen semester hours in Civil Engineering, Engineering Mechanics, and/or thesis-related courses selected from one of the following areas of concentration:
  - Engineering Mechanics
  - Environmental Engineering
  - Soil Mechanics
  - Structural Engineering
  - Transportation Engineering
2. Six to nine semester hours of Engineering or Basic Science electives to be chosen from current course offerings. For the major concentration of Engineering Mechanics, six semester hours of Mathematics (MTH 535 and 551) must be selected.
3. Six semester hours of research on a Civil Engineering or Engineering Mechanics thesis (CIE 599, EGM 599). A final oral examination is required upon completion of the thesis. Upon the request of the student, and with the approval of the faculty advisor and the department chairperson, this requirement may be replaced by twelve semester hours of additional related course work.

See also Master's degree regulations in the introductory section of this chapter and consult with the advisor.



Fred K. Bogner.  
*Department of Civil Engineering.*

## COURSES OF INSTRUCTION

**CIE 500. ADVANCED STRUCTURAL ANALYSIS:** Frames of variable cross section, arches; flat and folded plates; elastic stability of columns, frames, and plates; cylindrical, spherical, and barrel shells; structural dynamics of beams and frames. Prerequisites: CIE 405, EGM 304. *3 sem. hrs.*

**CIE 501. STRUCTURAL ANALYSIS BY COMPUTER:** Review of force and displacement methods. Introduction to direct element and substructure methods. Students write and execute, using computer terminals, their own programs to analyze plane and space trusses, grids, and plane and space frames. Prerequisite: CIE 406. *3 sem. hrs.*

**CIE 502. PRESTRESSED CONCRETE:** Discussion of the properties of concrete and prestressing steel. Theory and design of prestressed concrete beams, slabs, columns, frames, ties, and circular tanks. Prerequisite: CIE 407. *3 sem. hrs.*

**CIE 503. PLASTIC DESIGN IN STEEL:** Analysis and design procedures based on ultimate load capacity applied to steel beams, frames, and their connections. Concept of plastic hinge, necessary conditions for the existence of plastic moment, instability, deformations, repeated and reversed loading, and minimum weight design. Prerequisite: CIE 415. *3 sem. hrs.*

**CIE 511. EXPERIMENTAL STRESS ANALYSIS:** A study of the experimental analysis of stress as an aid to design for strength and economy with emphasis on electrical strain gages. Also, photoelasticity, brittle coatings, analogies, structural similitude. Two hours lecture and one three-hour laboratory period per week. Prerequisite: EGM 304. *3 sem. hrs.*

**CIE 513. INTRODUCTION TO CONTINUUM MECHANICS:** Tensors, calculus of variations, Lagrangian and Eulerian descriptions of motion. General equations of continuum mechanics, constitutive equations of mechanics, thermodynamics of continua. Specialization to cases of solid and fluid mechanics. Prerequisite: EGM 303. *3 sem. hrs.*

**CIE 520. ADVANCED SOIL MECHANICS:** Treatment of the theories of conventional soil mechanics. Detailed study and analysis of the static and dynamic properties of soils, with applications to foundation behavior. Prerequisite: CIE 312. *3 sem. hrs.*

**CIE 524. FOUNDATION DESIGN:** Analysis of earth pressure, stability of natural slopes, and bearing capacity of soil; design of spread foundations, pile foundations, beams on elastic foundations, anchored bulkheads, caissons, and cofferdams. Prerequisite: CIE 312. *3 sem. hrs.*

**CIE 533. THEORY OF ELASTICITY:** Three-dimensional stress and strain at a point; equations of elasticity in Cartesian and curvilinear coordinates; methods of formulation of equations for solution; plane stress and plane strain; energy formulations; numerical solution procedures. Corequisite: EGM 503. *3 sem. hrs.*

**CIE 534. THEORY OF PLATES AND SHELLS:** Theory of plates: small and large displacement theories of thin plates; shear deformation; buckling; sandwich plate theory. Thin shell theory: theory of surfaces; thin shell equations in orthogonal curvilinear coordinates; bending, membrane, and shallow shell theories. Prerequisite: EGM 533. *3 sem. hrs.*

CIE 535. **ADVANCED MECHANICAL VIBRATIONS:** Review of undamped, damped, natural and forced vibrations of one and two degrees of freedom systems. Lagrange's equation, eigenvalue/eigenvector problem, modal analysis for discrete and continuous systems. Computer application for multi-degree of freedom, nonlinear problems. Prerequisites: Computer programming and MEE 319. *3 sem. hrs.*

CIE 539. **THEORY OF PLASTICITY:** Fundamentals of plasticity theory including: elastic, viscoelastic, and elastic-plastic constitutive models; plastic deformation on the macroscopic and microscopic levels; stress-strain relations in the plastic regime; strain hardening; limit analysis; numerical procedures. Prerequisite: EGM 503 or 533. *3 sem. hrs.*

CIE 540. **HIGHWAY GEOMETRIC DESIGN:** Design controls and criteria, vehicle capacity, sight distance, intersection and interchange design. Prerequisite: CIE 405. *3 sem. hrs.*

CIE 544. **TRAFFIC ENGINEERING:** Characteristics of traffic, including the road user, the vehicle, origin, and destination surveys; traffic regulation, control devices and aids, design, administration, and planning. Prerequisite: CIE 405. *3 sem. hrs.*

CIE 546. **FINITE ELEMENT ANALYSIS I:** Fundamentals of the Finite Element Method; interpolation functions; derivation of finite elements for bars, beams, plates, shells; isoparametric solid finite elements; isoparametric shell finite elements; natural vibration; elastic stability. Prerequisite: EGM 503 or 533. *3 sem. hrs.*

CIE 558. **TRAFFIC ENGINEERING RESEARCH:** Problems in control or capacity restraints based on studies of local situations. *3 sem. hrs.*

CIE 560. **ADVANCED SANITARY ENGINEERING:** Stream pollution control and design of water and waste treatment plants and sewers. Prerequisites: CIE 333, 434. *3 sem. hrs.*

CIE 562. **INDUSTRIAL WASTE TREATMENT:** Nature and quality of specific industrial wastes and water supplies, treatment and disposal of industrial wastes. Prerequisites: CIE 333, 434. *3 sem. hrs.*

CIE 565. **SANITARY CHEMISTRY:** Principles, techniques, and interpretations of physical, chemical and biological tests related to water, sewage, and industrial wastes. Prerequisite: CHM 124. *3 sem. hrs.*

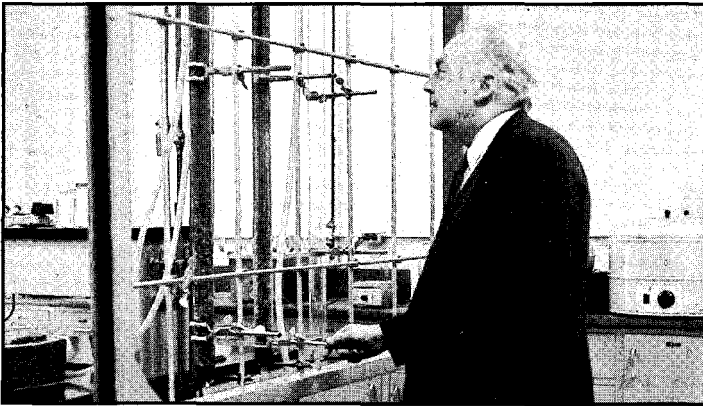
CIE 570. **CIE COMPUTER APPLICATIONS:** Applications of mainframe mini- and micro-computers to the solution of selected Civil Engineering problems, including data analysis, plotting, optimization, and simulation. *3 sem. hrs.*

CIE 580. **HYDROLOGY AND SEEPAGE:** The deposition, movement, and infiltration of water as related to the hydrologic cycle and groundwater hydraulics; a study of the theory of flow in porous media with application to dams, excavations, and other foundation problems. Prerequisites: CIE 313, 312. *3 sem. hrs.*

CIE 582. **ADVANCED HYDRAULICS:** Problems and study involving open channel flow, draw down curves, hydraulics of dams, spillway, models, and water distribution systems. Prerequisite: CIE 313. *3 sem. hrs.*

CIE 595. **SPECIAL PROBLEMS IN CIVIL ENGINEERING:** Special assignments in civil engineering subject matter to be arranged and approved by the student's advisor and the department chairperson. *2-6 sem. hrs.*

CIE 599. **THESIS** *3-6 sem. hrs.*



Seymour J. Ryckman.  
*Department of Civil Engineering.*



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# ENGINEERING MECHANICS (EGM)

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*Non-Civil Engineering majors may select courses from this sequence to form a major area for the Master of Science in Engineering (EGR) program.*

## COURSES OF INSTRUCTION

**EGM 500. INTRODUCTION TO NUMERICAL METHODS:** Numerical analysis topics include the solution of systems of linear and one-linear algebraic equations; matrix eigenvalue problems; ordinary differential equations; optimization techniques; numerical integration and interpolation. Engineering applications presented. Computer programming required. 3 sem. hrs.

**EGM 501. EXPERIMENTAL STRESS ANALYSIS:** A study of the experimental analysis of stress as an aid to design for strength and economy with emphasis on electrical strain gages. Also, photoelasticity, brittle coatings, analogies, structural similitude. Two hours lecture and one three-hour laboratory period per week. 3 sem. hrs.

**EGM 502. ADVANCED ENGINEERING ANALYSIS:** Detailed analysis of engineering problems using laws of nature, fundamental engineering principles, mathematics, computers and practical experience to construct, resolve and test analytic models of physical events. Emphasis is on the use of the professional engineering approach which includes formulation of the problem, assumptions, plan or method of attack, solving the problem, checking and generalizing results. 3 sem. hrs.

**EGM 503. INTRODUCTION TO CONTINUUM MECHANICS:** Tensors, calculus of variations, Lagrangian and Eulerian descriptions of motion. General equations of continuum mechanics, constitutive equations of mechanics, thermodynamics of continua. Specialization to cases of solid and fluid mechanics. Prerequisite: EGM 303. 3 sem. hrs.

**EGM 506. MECHANICAL BEHAVIOR OF MATERIALS:** Description of the state of stress and strain in materials, plastic deformation, fatigue, fracture, creep, and rupture. Prerequisites: MEE 502, or consent of instructor. 3 sem. hrs.

**EGM 519. ANALYTIC DYNAMICS:** Kinematics, relative motion, constraints and generalized coordinates, Hamilton's principle, Lagrange's equations, variational principles. Applications to particle dynamics and rigid body motion. Prerequisites: EGM 301, MTH 219, or equivalent. 3 sem. hrs.

**EGM 531. THEORY OF LINEAR VISCOELASTICITY:** The principles of viscoelasticity; Kelvin and Maxwell models of viscoelastic materials; creep and relaxation phenomena; application of hereditary integral and complex compliance; correspondence principle wave propagation and vibrational response. Prerequisites: MTH 219 and EGM 303. 3 sem. hrs.

**EGM 533. THEORY OF ELASTICITY:** Three-dimensional stress and strain at a point; equations of elasticity in Cartesian and curvilinear coordinates; methods of formulation of equations for solution; plane stress and plane strain; energy formulations; numerical solution procedures. Corequisite: EGM 503. 3 sem. hrs.

**EGM 534. THEORY OF PLATES AND SHELLS:** Theory of plates: small and large displacement theories of thin plates; shear deformation; buckling, sandwich plate theory. Thin shell theory: theory of surfaces; thin shell equations in orthogonal curvilinear coordinates; bending, membrane, and shallow shell theories. Prerequisite: EGM 533.  
*3 sem. hrs.*

**EGM 535. ADVANCED MECHANICAL VIBRATIONS:** Review of undamped, damped natural and forced vibrations of one and two degrees of freedom systems. Lagrange's equation, eigenvalue/eigenvector problem, modal analysis for discrete and continuous systems. Computer application for multi-degree of freedom, nonlinear problems. Prerequisites: Computer Programming and MEE 319.  
*3 sem. hrs.*

**EGM 536. RANDOM VIBRATIONS:** Introduction to probability distribution; characterization of random vibrations; harmonic analysis; auto- and cross-correlation and spectral density; coherence; response to single and multiple loadings; Fast Fourier Transform (FFT); applications in vibrations, vehicle dynamics, fatigue, etc. Prerequisites: Computer Programming and MEE 319.  
*3 sem. hrs.*

**EGM 538. INTRODUCTION TO AEROELASTICITY:** The study of the effect of aerodynamic forces on a flexible aircraft. Flexibility coefficients and natural modes of vibration. Quasi-steady aerodynamics. Static aeroelastic problems; wing divergence and dynamic aeroelasticity; wing flutter. An introduction to structural stability augmentation with controls.  
*3 sem. hrs.*

**EGM 539. THEORY OF PLASTICITY:** Fundamentals of plasticity theory including: elastic, viscoelastic, and elastic-plastic constitutive models; plastic deformation on the macroscopic and microscopic levels; stress-strain relations in the plastic regime; strain hardening; limit analysis; numerical procedures. Prerequisite: EGM 503 or 533.  
*3 sem. hrs.*

**EGM 543. MECHANICS OF COMPOSITE MATERIALS:** Analytical models are developed for predicting the mechanical and thermal behavior of fiber reinforced composites as a function of constituent material properties. Both continuous and discontinuous fiber reinforced systems are considered. Specific topics include basic mechanics of anisotropic materials, micromechanics, and lamination theory.  
*3 sem. hrs.*

**EGM 544. STRUCTURAL BEHAVIOR OF COMPOSITES:** Comprehensive treatment of laminated plates and cylindrical shells. Bending, buckling, and vibration analysis are considered. Various orders of theory and their range of parametric application are emphasized. Thermal stresses are also considered. Prerequisite: EGM 533 or consent of instructor.  
*3 sem. hrs.*

**EGM 545. COMPUTATIONAL METHODS FOR DESIGN:** Modeling of mechanical systems and structures, analysis by analytical and numerical methods, development of mechanical design criteria and principles of optimum design, selected topics in mechanical design and analysis, utilization of the digital computer as an aid in the design of mechanical elements.  
*3 sem. hrs.*

**EGM 546. FINITE ELEMENT ANALYSIS I:** Fundamentals of the Finite Element Method; interpolation functions; derivation of finite elements for bars, beams, plates, shells; isoparametric solid finite elements; isoparametric shell finite elements; natural vibration; elastic stability. Prerequisite: EGM 503 or 533.  
*3 sem. hrs.*

EGM 547. FINITE ELEMENT ANALYSIS II: Advanced topics: heat transfer; transient dynamics; nonlinear analysis; substructuring and static condensation; effects of inexact numerical integration and element incompatibility; patch test; frontal solution techniques; selected topics from the recent literature. Prerequisite: EGM 546. *3 sem. hrs.*

EGM 548. ENERGY METHODS IN SOLID MECHANICS: Development of fundamental energy principles; virtual displacements, strain energy, Castigliano's theorems, minimum potential energy principles. Applications to engineering problems; redundant structures, buckling, static and dynamic analysis. Prerequisite: EGM 503 or EGM 533. *3 sem. hrs.*

EGM 549. THEORY OF ELASTIC STABILITY: Introduction to stability theory; buckling of plates and shells; influence of initial imperfections; nonlinear analysis; numerical solution methods. Prerequisite: EGM 533. *3 sem. hrs.*

EGM 570. FRACTURE MECHANICS: Application of principles of fracture mechanics to fatigue and fracture in engineering structures. Prerequisites: MAT 502 or consent of instructor. *3 sem. hrs.*

EGM 590. SELECTED READINGS IN ENGINEERING MECHANICS: Directed readings in a designated area, arranged and approved by the student's faculty advisor and the program director. May be repeated. *1-3 sem. hrs. each.*

EGM 595. SPECIAL PROBLEMS IN ENGINEERING MECHANICS: Special topics, arranged and approved by the student's faculty advisor and the program director. *1-6 sem. hrs.*

EGM 599. THESIS *3-6 sem. hrs.*

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Department of  
**ELECTRICAL ENGINEERING (ELE)**

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Donald L. Moon, Chairperson of the Department

Electrical Engineering is a major concentration for both the Doctor of Philosophy in Engineering and the Doctor of Engineering. See Doctor's Degree Regulations in the introductory section of this chapter and consult with the department chairperson and the director of the program.

## **PROGRAM REQUIREMENTS**

The program of study leading to the Master of Science in Electrical Engineering must include a minimum of 30 semester hours of credit consisting of the following:

1. Six semester hours in basic and engineering sciences. It is possible to combine six semester hours from separate areas. Selected courses must meet with the approval of the advisor.
2. Twelve semester hours in Electrical Engineering at the graduate level.
3. Six semester hours in thesis-supporting courses approved by the advisor.
4. Six semester hours on an approved thesis project. Students engaged in thesis research enroll in ELE 599.

A final examination is required at the completion of the thesis.

See also Master's Degree Regulations in the introductory section of this chapter, and consult with the advisor.

## **COURSES OF INSTRUCTION**

**ELE 502. NETWORK SYNTHESIS:** Synthesis of linear passive networks using classical pole-zero techniques; conditions for physical realizability approximating network functions and design to meet specific requirements; analysis and synthesis of linear active networks. Prerequisites: ELE 331, 413. *3 sem. hrs.*

**ELE 505. QUANTUM ELECTRONICS — PRINCIPLES:** Principles of quantum theory; classical and quantum statistics; many-particle systems; electromagnetic interactions with materials. Applications to lasers and Q.M. communication theory. Prerequisite: ELE 440 or equivalent. *3 sem. hrs.*

**ELE 506. SOLID STATE DEVICES:** Introduction to the theory of solid state electron devices. Bulk devices, junction devices, devices involving electric, magnetic, optical, and acoustical interactions. *3 sem. hrs.*

**ELE 507. ELECTROMAGNETIC FIELDS I:** Fundamental concepts: introduction to waves; theorems of electromagnetics; plane wave function; cylindrical wave functions. Applications to extremely low frequency through optical frequency systems. Prerequisite: ELE 442. *3 sem. hrs.*

**ELE 508. ELECTROMAGNETIC FIELDS II:** Spherical wave functions; perturbational and variational techniques; radiative systems; microwave networks. Prerequisite: ELE 442. *3 sem. hrs.*

ELE 509. ANALYSIS OF LINEAR SYSTEMS: A study of Fourier series, finite trigonometric series, Fourier transforms, and their applications in the analysis of linear systems. 3 sem. hrs.

ELE 511. ANTENNAS AND RADIATION THEORY: Fundamental principles of antennas; analysis and synthesis of arrays; resonant antennas; frequency independent antennas; aperture and reflector antennas; applications to radar and communication systems. Prerequisite: ELE 442. 3 sem. hrs.

ELE 513. COMMUNICATION THEORY: The application of Fourier series and integrals to the analysis of communication problems; theory of random signals, autocorrelation, power density spectra, and optimum filters. Prerequisite: ELE 413. 3 sem. hrs.

ELE 514. ANALYSIS OF NONLINEAR SYSTEMS: An advanced study of methods of analysis on nonlinear systems with application in the fields of electric circuit theory and control systems. Prerequisite: ELE 509. 3 sem. hrs.

ELE 515. AUTOMATIC CONTROL THEORY: Analysis and synthesis of feedback control systems; graphical frequency-response techniques; establishing performance criteria; state-space techniques. Prerequisite: ELE 432. 3 sem. hrs.

ELE 517. RANDOM PROCESSES IN SYSTEM THEORY I: A coherent, semiformal introduction to the theory of probability and random processes as applied to system theory. The axioms of probability; the concept of random variable, distributions, density; function of random variables; stochastic processes; stationary processes; linear mean square estimation; Markov processes. Prerequisite: ELE 331 or consent of instructor. 3 sem. hrs.

ELE 522. MAGNETIC MEASUREMENTS AND INSTRUMENTS: Magnetic material properties; quantities and units. Field generation; measurement of field strength, magnetic moment and induction. A.C. permeability, iron losses, waveforms. Permanent magnet properties. Static and dynamic hysteresis loops. Magnetic domain observation. Thermomagnetic analysis. Prerequisite: ELE 524/MAT 512 or consent of instructor. 3 sem. hrs.

ELE 523. PERMANENT MAGNETS: Basic properties and description. Magnetic circuit design. Magnet materials types and properties. Physics and metallurgy of permanent magnets. Property measurement. Engineering applications. Present research activities. Three weekly lecture hours and five laboratory sessions of 4 hours each. Field trip to magnet manufacturer, if possible. Prerequisite: ELE 524/MAT 512 or consent of instructor. 3 sem. hrs.

ELE 524. MAGNETIC MATERIALS — PHYSICAL PRINCIPLES: Description of magnetic material properties. The magnetic circuit. Atomic magnetism. Types of magnetic order and spin structures. Intrinsic magnetization. Molecular field concept. Domains. Prerequisite: ELE 333 or consent of instructor. 3 sem. hrs.

ELE 525. MAGNETIC MATERIALS FOR ENGINEERING APPLICATIONS: Magnetic anisotropies. Magnetostriction and stress effects. Domains, walls and magnetization processes. Origins of coercivity and hysteresis loss. Nature, properties and uses of commercial materials, soft and hard magnetic, crystalline and amorphous. Survey of applications. Prerequisite: ELE 524/MAT 512 or consent of instructor. 3 sem. hrs.

ELE 525S. MAGNETIC MATERIALS PROSEMINAR: Library research on one magnetism topic, formal written and oral report required. Attend seminars of other students and visiting scholars. Corequisite: ELE 525/MAT 513. *1 sem. hr.*

ELE 526. APPLIED SUPERCONDUCTIVITY: Basic phenomena. Theoretical concepts. Superconducting materials-types, properties, physics, metallurgy. Superconducting magnets. Other current and future engineering applications. (Consent of instructor.) *3 sem. hrs.*

ELE 527. RANDOM PROCESSES IN SYSTEM THEORY II: A continuation of ELE 517, Random Processes in System Theory I, with emphasis on Markov Processes and Random Dynamical Systems. Prerequisite: ELE 517. *3 sem. hrs.*

ELE 531. DIGITAL SYSTEMS THEORY I: Switching circuit theory; number systems, truth functions, Boolean algebra, switching devices, codes, relay circuits, and an introduction to sequential circuits. Prerequisite: ELE 313 or consent of instructor. *3 sem. hrs.*

ELE 532. DIGITAL SYSTEMS THEORY II: Sequential circuit theory; clocked sequential circuits, incompletely specified sequential circuits, pulse-mode circuits, fundamental mode circuits. Prerequisite: ELE 531. *3 sem. hrs.*

ELE 533. DIGITAL SYSTEMS THEORY III: Digital computer design: digital arithmetic, switching matrices, digital computer elements, arithmetic and control units, the logic design of a simple digital computer. Prerequisite: ELE 532. *3 sem. hrs.*

ELE 534. DIGITAL SYSTEMS THEORY IV: Advanced sequential machine theory; finite state machines, regular expressions, lossless machines, bilateral analysis and synthesis procedures, sequential iterative systems. Prerequisite: ELE 532. *3 sem. hrs.*

ELE 535. CODING THEORY: The theory of error-correcting, error-detecting codes as applied to the design of reliable digital data systems. Prerequisite: ELE 532. *3 sem. hrs.*

ELE 536. MICROCOMPUTERS I: Basic computer architecture, arithmetic logic units, calculator chips, micro-processors, timing and instruction cycles, system architecture, programming, cross assembly. Prerequisite: ELE 532 or digital design experience. *3 sem. hrs.*

ELE 537. MICROCOMPUTERS II: Advanced microcomputer design, teletype I/O, asynchronous receiver-transmitters, interface design, control topics, cross assembly, high order languages, system considerations. Prerequisite: ELE 536 or equivalent design experience. *3 sem. hrs.*

ELE 541. POWER ELECTRONICS: Applications of power semiconductors to power control amplification, and regulation, in the light of an integrated, quantitative treatment of mechanical, thermal, and electrical characteristics and ratings; modeling for linear, nonlinear and switching modes; and thermal and electric circuit interactions. Prerequisite: ELE 313 or equivalent. *3 sem. hrs.*

ELE 551. ELECTRICAL POWER SYSTEMS DYNAMICS: Basic structure of the electrical power transmission system; criteria for system stability; symmetrical components; synchronous machine equations of motion, transients and dynamics; transmission line surges, short circuit calculations. Prerequisites: ELE 333, 431. *3 sem. hrs.*

ELE 555. SYSTEMS DYNAMICS I: The methodology for modeling the dynamics of complex social-economic systems. Use of these models to study organizational policies and design for higher order multiple-loop, nonlinear feedback structures.

3 sem. hrs.

ELE 561. DIGITAL SIGNAL PROCESSING: A study of one-dimensional digital signal processing, including a review of continuous-system analysis and sampling. Topics include z-transform techniques, digital filters, and Fast Fourier Transform processing techniques.

3 sem. hrs.

ELE 562. DIGITAL SIGNAL PROCESSING II: A study of the architectural requirements for processors which perform one-dimensional digital signal processing. This will include the techniques for the design of both hardware and software elements needed for implementation of digital signal processors as well as discussions of application of these processors. Prerequisite: ELE 561.

3 sem. hrs.

ELE 571. IMAGE PROCESSING: An introduction to image processing, including a review of hard copy media, but with concentration on video images. Image format, two-dimensional FFT processes, and other digital processing techniques will be stressed. Prerequisites: ELE 561, ELE 562.

3 sem. hrs.

ELE 573. ELECTRO-OPTICAL DEVICES AND SYSTEMS: A study of electro-optical (E-O) components including sources, modulators, switches, detectors, etc., and their application in E-O systems of various types. The theory and design of E-O systems emphasizing areas such as display technology, surveillance systems and components, and other disciplines in which electronic and optical elements are arranged to interact synergistically will be treated.

3 sem. hrs.

ELE 577L. ELECTRO-OPTICAL LABORATORY III: Experimentation with E-O systems emphasizing areas such as display technology, surveillance systems and components, and other disciplines in which electronic and optical elements are arranged to interact synergistically.

1 sem. hrs.

ELE 595. SPECIAL PROBLEMS IN ELECTRICAL ENGINEERING: Particular assignments to be arranged and approved by the chairperson of the department.

2-6 sem. hrs.

ELE 599. THESIS

3-6 sem. hrs.

ELE 603. MAGNETIC ANISOTROPY AND MAGNETOSTRICTION: Mathematical description of magnetic anisotropy and magneto-elastic phenomena. Physical causes of magneto-crystalline anisotropy and magnetostriction. Relationship of theory of magnetic exchange. Prerequisite: ELE 525 or consent of instructor.

3 sem. hrs.

ELE 626. SYSTEM DYNAMICS II: The continuation of Systems Dynamics I with special emphasis on the study of large scale corporate, urban, educational, and ecological systems. Prerequisite: ELE 555.

3 sem. hrs.

ELE 690. SELECTED READINGS IN ELECTRICAL ENGINEERING: Directed readings in electrical engineering areas to be arranged and approved by the chairperson of the student's advisory committee and the department chairperson. May be taken more than once.

1-3 sem. hrs.

**ELE 690. SELECTED READINGS IN ELECTRICAL ENGINEERING:** Directed readings in electrical engineering areas to be arranged and approved by the chairperson of the student's advisory committee and the department chairperson. May be taken more than once. *1-3 sem. hrs.*

**ELE 695. SPECIAL PROBLEMS IN ELECTRICAL ENGINEERING:** Special electrical engineering topics not covered in regular courses. Course sections arranged and approved by chairperson of the student's advisory committee and the department chairperson. May be taken more than once. *1-3 sem. hrs.*

**ELE 698. D.E. DISSERTATION:** An original investigation as applied to engineering practice. Results must be of sufficient importance to merit publication. *1-15 sem. hrs.*

**ELE 699. Ph.D. DISSERTATION:** An original research effort in electrical engineering which makes a definite contribution to technical knowledge. Results must be of sufficient importance to merit publication. *1-15 sem. hrs.*



*Kettering Laboratories.  
School of Engineering  
and The Research Institute.*



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## ELECTRO-OPTICS (EOP)

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Gary A. Thiele, Ph.D., Director of the Program and  
Associate Dean of Engineering

The program of study for the Master of Science in Electro-Optics is an interdisciplinary program administered by the School of Engineering with the cooperative support of the College of Arts and Sciences.

### PROGRAM REQUIREMENTS

To be considered for admission to graduate study in electro-optics a student must have received an undergraduate degree with emphasis in Engineering, Physics, Optics, Chemistry, or applied Mathematics. Students who have degrees in Chemistry or applied Mathematics, or related sciences are encouraged to apply, but they may be required to take a limited amount of undergraduate work to complete their preparation for graduate study in electro-optics. Students are expected to have some competency in computer programming and modern electronics.

The program of study in electro-optics must include a minimum of 30 semester hours consisting of the following:

1. Twenty-one semester hours of core courses in Electro-Optics: EOP 501, EOP 502, EOP 503, EOP 504, EOP 505, EOP 506, EOP 541L, EOP 542L, EOP 543L.
2. Six semester hours of thesis work and three semester hours of a technical elective in the case of a thesis option. Most students will be required to do a thesis.
3. Nine semester hours of approved technical electives in the case of a non-thesis option.
4. Students taking the non-thesis option will take a comprehensive written examination just prior to their anticipated graduation date. The examination will be administered by a three-person committee which will report to the program director those students who have passed the examination and recommend them for graduation. The examination may be repeated once, but not in the same academic term.

See also the Master's Degree regulations in the introductory section of this chapter, and consult with the director of the Master of Science in the Electro-Optics program.

### COURSES OF INSTRUCTION

EOP 501. GEOMETRIC OPTICS: Wavefronts and rays; Fermat's principle; Gaussian optics of axially symmetrical systems; aperture stops; pupils and field lenses; Lagrange invariant; angular and visual magnification; optical systems; plane mirrors and prisms; aberration theory; introduction to computer ray tracing. Prerequisites: Acceptance into the graduate Electro-Optics program or permission of the program director.

*3 sem. hrs.*

**EOP 502. OPTICAL RADIATION AND MATTER:** Maxwell's equations; electromagnetic waves; interaction of radiation with atomic electrons; molecular and lattice vibration; study of phenomena related to the interaction of optical radiation with matter; polarization; crystal optics; nonlinear dielectric effects. Prerequisites: acceptance into the graduate Electro-Optics program or permission of the program director.

*3 sem. hrs.*

**EOP 503. PRINCIPLES OF MODERN OPTICS I:** Wave theory; electromagnetic theory; mathematical techniques; Fresnel and Fraunhofer diffraction; coherence; and interference. Prerequisites: acceptance into the graduate Electro-Optics program or permission of the program director.

*3 sem. hrs.*

**EOP 504. PRINCIPLES OF MODERN OPTICS II:** Fourier transformation and imaging properties of lenses; diffraction of aberrations; frequency analysis of optical imaging systems; spatial filtering and optical information processing; holography. Prerequisites: EOP 501, 502, and 503, or by permission of the program director.

*3 sem. hrs.*

**EOP 505. INTRODUCTION TO LASERS:** Laser theory; coherence; Gaussian beams; optical resonators; properties of atomic and molecular radiation; laser oscillation and amplification; methods of excitation of lasers; characteristics of common lasers; laser applications. Prerequisites: EOP 501, 502, and 503, or by permission of the program director.

*3 sem. hrs.*

**EOP 506. ELECTRO-OPTICAL DEVICES AND SYSTEMS:** Sources; modulators; switches, detectors; display technology; surveillance systems; electro-optical component applications in electro-optical systems; Theory and design of electro-optical systems. Prerequisites: EOP 501, 502, and 503, or by permission of the program director.

*3 sem. hrs.*

**EOP 521. STATISTICAL OPTICS:** Optical phenomena and techniques requiring statistical methods for practical understanding and application; relevant statistical techniques for the analysis of image processing systems and the design of laser radar systems; engineering applications of statistical techniques. Prerequisites: completion of the core courses of the graduate Electro-Optics program or by permission of the program director.

*3 sem. hrs.*

**EOP 522. TECHNIQUES OF OPTICAL PROCESSING:** Techniques and applications of optical image and signal processing; coherent optics; matched filters; computer generated holograms; spatial light modulators; incoherent optical processing; modulators for signal processing. Prerequisites: completion of the core courses of the graduate Electro-Optics program or permission of the program director.

*3 sem. hrs.*

**EOP 523. PRINCIPLES OF MODERN OPTICS III:** Theory and applications of dielectric coatings; theory and applications of metallic coatings; properties and applications of optical materials; characterization of optical surfaces, theory and measurement of optical surface scattering. Prerequisites: completion of the core courses of the graduate Electro-Optics program or permission of the program director.

*3 sem. hrs.*

**EOP 524. OPTICAL COMPUTING SYSTEMS:** Computation architectures; number systems; residue arithmetic; optical logic units; multi-purpose arithmetic modules; communication busses; encoding, decoding and scaling; processor design methods. Prerequisites: EOP 503, EOP 504, and completion of a course in computer systems or permission of the program director.

*3 sem. hrs.*

**EOP 525. LASER PROBE TECHNIQUES:** Applications of optical phenomena and lasers to noninvasive measurements; absorption and emission spectroscopies; laser-induced fluorescence spectroscopy; high-sensitivity detection methods using lasers; spontaneous and coherent Raman spectroscopies; Rayleigh and Mie scattering techniques; laser Doppler techniques; gas flow and combustion diagnostics and other applications of laser spectroscopy and light scattering. Prerequisites: completion of the core courses of the graduate Electro-Optics program or permission of the program director. *3 sem. hrs.*

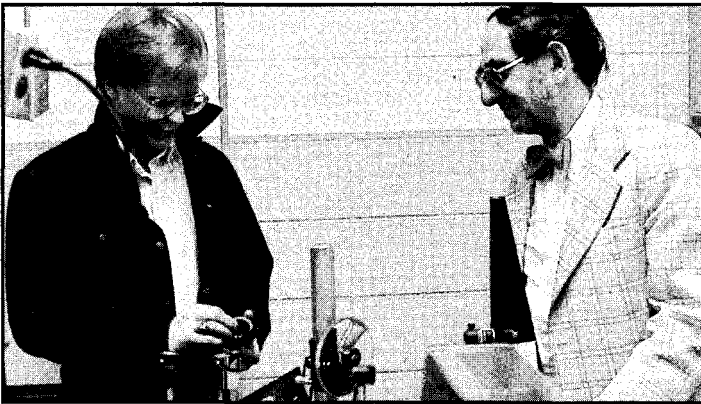
**EOP 541L. ELECTRO-OPTICS LABORATORY I:** Geometrical optics; characterization of optical elements; diffraction, interference; detectors; spectroscopy. Prerequisites: EOP 501, EOP 502, and EOP 503. *1 sem. hrs.*

**EOP 542L. ELECTRO-OPTICS LABORATORY II:** Laser characterization; properties of laser light; optical signal processing; holography; laser modulation; fiber optics. Prerequisites: EOP 504, EOP 505, and EOP 506. *1 sem. hrs.*

**EOP 543L. ELECTRO-OPTICS LABORATORY III:** Electro-Optical systems; display technology; electro-optical system components; optical detection; detectors; image processing. Prerequisites: EOP 501, EOP 502, and EOP 506. *1 sem. hrs.*

**EOP 595. SPECIAL PROBLEMS IN ELECTRO-OPTICS:** Particular assignments to be arranged and approved by the director of the program. *2-6 sem. hrs.*

**EOP 599. THESIS** *3-6 sem. hrs.*



Perry P. Yaney,  
*Department of Physics.*

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## ENGINEERING (EGR)

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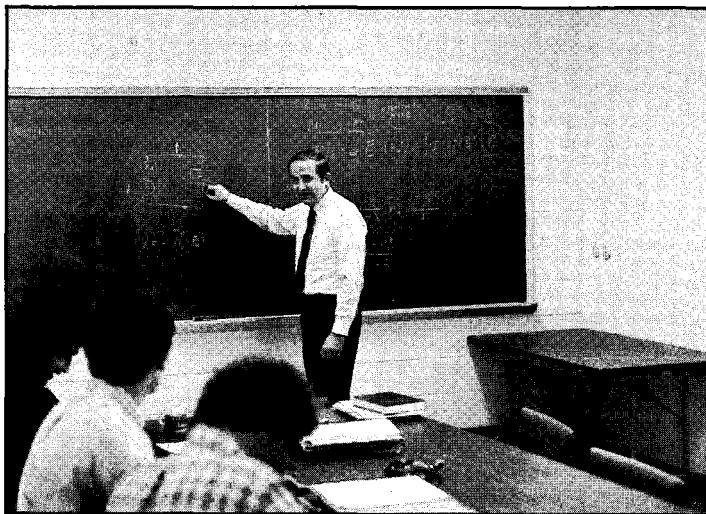
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Gary A. Thiele, Director of the Program and  
Associate Dean of Engineering

The Master of Science in Engineering allows flexibility for general or specialized program construction according to the needs of the individual student in conformance with the requirements of the School of Engineering and the University of Dayton. The program of study leading to the Master of Science in Engineering must include a minimum of 30 semester hours of the following:

1. Twelve semester hours in a major area.
2. Twelve semester hours of electives.
3. Six semester hours of research on an approved project.

See also Master's Degree Regulations in the introductory section of this chapter, and consult with the director of the Master of Engineering program.



Gary A. Thiele, Associate Dean.  
*School of Engineering.*

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# ENGINEERING MANAGEMENT (ENM)

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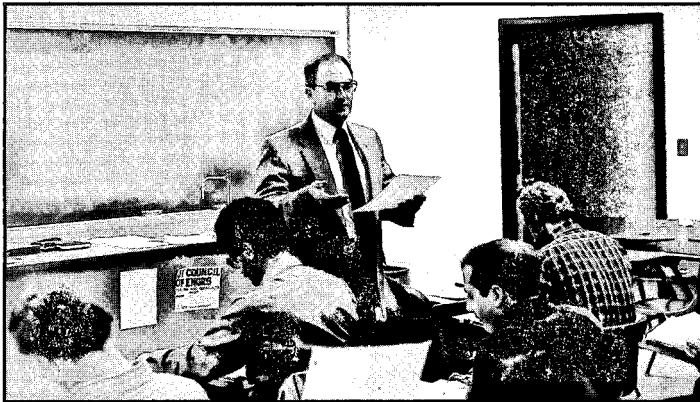
John R. Fraker, Director of the Program

## PROGRAM REQUIREMENTS

The program of study leading to the Master of Science in Engineering Management is designed to prepare the practicing engineer for the management of engineering activities in any environment — in industry, in government, in business, in the military. It must include a minimum of 36 semester hours consisting of the following:

1. Eighteen semester hours of core courses in Engineering Management. These are ENM 505, ENM 530, ENM 535, ENM 582 or MBA 587, ENM 585, and ENM 590.
2. Nine semester hours of engineering electives. This requirement will normally be satisfied by nine semester hours of courses in the student's own field of Engineering.
3. Nine hours of electives as approved by the advisor and the program director.

See also Master's Degree Regulations in the introductory section of this chapter and consult with the advisor.



John R. Fraker.  
*Engineering Management  
and Management Science Program.*

## COURSES OF INSTRUCTION

ENM 505. MANAGEMENT OF ENGINEERING SYSTEMS: Introduction to the functions and tools of engineering management; the specific roles and relationships of engineering activities in the total enterprise; the techniques of systems analysis, engineering system design, and system optimization. 3 sem. hrs.

**ENM 506. ENGINEERING MANAGEMENT AND SOCIETY:** Important governmental and societal dimensions affecting engineering systems. *3 sem. hrs.*

**ENM 510. TECHNOLOGICAL FORECASTING:** State-of-the-art techniques for technological forecasting in R & D and other related areas. Topics presented include the Delphi Method, techniques of technological forecasting, growth curves, and various relevant mathematical models. Areas of application are tailored to student interests. *3 sem. hrs.*

**ENM 511. TECHNOLOGY ASSESSMENT:** Examination of the impacts of technological change on society. Review of the impacts of several major technological changes of the past, including both anticipated and unanticipated changes. Methods for assessing and predicting the consequences of technological change. *3 sem. hrs.*

**ENM 515. HUMAN FACTORS ENGINEERING:** Introduction to the human factors criteria that should be considered in the design of man-machine systems, work situations, and man's physical environment. *3 sem. hrs.*

**ENM 521. OPERATIONS RESEARCH I:** Introduction to the deterministic models and methods of operations research, with emphasis on the solution of real problems in both the public and private sectors. Topics from mathematical programming, network analysis, and game theory. The use of the digital computer is emphasized. *3 sem. hrs.*

**ENM 522. OPERATIONS RESEARCH II:** Introduction to the probabilistic models and methods of operations research, with emphasis on the solution of real problems in both the public and private sectors. Topics include inventory models, stochastic processes, queueing theory, and system simulation. The use of the digital computer is emphasized. Prerequisite: MTH 367 or equivalent. *3 sem. hrs.*

**ENM 523. OPTIMIZATION I:** Introduction to the methodology of optimization with emphasis on application to engineering systems. Classical optimization, constrained optima, search techniques, steepest ascent techniques. The use of the digital computer is emphasized. *3 sem. hrs.*

**ENM 530. COST AND ECONOMIC ANALYSIS FOR ENGINEERS:** Principles and methods of economic analysis of engineering activities. The time value of money, short-term and long-term investments, comparison of alternatives, replacement analysis, and minimum cost models. *3 sem. hrs.*

**ENM 535. INTRODUCTION TO DECISION MAKING:** Introduction to rational decision making with applications in the analysis and design of engineering and management systems. Decision making under uncertainty and risk as well as under certainty. Group decision making. Multiple-criteria decision making Corequisite: MTH 368 or equivalent. *3 sem. hrs.*

**ENM 541. PRODUCTION ENGINEERING:** The design of systems of men and machine for the production process: forecasting, scheduling, production and inventory control, staffing, and equipment replacement. Prerequisite: MTH 368 or equivalent. *3 sem. hrs.*

ENM 551. POLICY ANALYSIS AND PLANNING IN PUBLIC SYSTEMS I: General introduction to qualitative and quantitative methodologies of policy analysis and planning in the public sector with special emphasis on project and program planning.

3 sem. hrs.

ENM 552. POLICY ANALYSIS AND PLANNING IN PUBLIC SYSTEMS II: Continuation of ENM 551 with emphasis on complete analysis of large scale public systems. Prerequisite: ENM 551 or equivalent.

3 sem. hrs.

ENM 553. PUBLIC SYSTEMS ENGINEERING: Guided study of the application of policy analysis and planning techniques for public systems. Emphasis on urban-regional improvement and world systems of energy and food. Prerequisite: ENM 551 or equivalent.

3 sem. hrs.

ENM 555. SYSTEM DYNAMICS I: Introduction to the methodology for modeling the dynamics of complex engineering, business, and socioeconomic systems. The use of these models to study the effect of organizational policies and design in higher order, multiple-loop, nonlinear feedback systems. The use of the digital computer is emphasized.

3 sem. hrs.

ENM 556. SYSTEMS DYNAMICS II: Continuation of ENM 555 with emphasis on the study of large scale corporate, urban, educational, and ecological systems. Prerequisite: ENM 555 or equivalent.

3 sem. hrs.

ENM 560. QUALITY ASSURANCE: Application of statistical principles of analysis and control to production processes, studies of process capabilities, quality control, and engineering experimentation. Prerequisite: MTH 368 or equivalent.

3 sem. hrs.

ENM 561. DESIGN AND ANALYSIS OF EXPERIMENTS: Advanced topics in experimental design and analysis, including experimental design, response surface analysis, multiple and partial regression and correlation. The use of the digital computer is emphasized. Prerequisite: MTH 368 or equivalent.

3 sem. hrs.

ENM 565. RELIABILITY ENGINEERING I: Introduction to the concepts and methodology of reliability engineering. The reliability of components and multi-component systems, analysis and design of systems, and design and evaluation of processes for assuring the reliability, maintainability, and availability of systems. Prerequisite: MTH 368 or equivalent.

3 sem. hrs.

ENM 566. RELIABILITY ENGINEERING II: Continuation of ENM 565. Advanced topics in reliability engineering, with emphasis on the design of systems to meet specified reliability, availability, and maintainability requirements. Prerequisite: ENM 565 or equivalent.

3 sem. hrs.

ENM 572. SYSTEM SIMULATION: The construction of models which simulate real systems, the generation of random inputs to obtain sample observations of the model, and the inference of system properties from the observations of the model. Experimental design and variance-reduction techniques. The use of the digital computer is emphasized. Prerequisite: MTH 368, ENM 522 or equivalent.

3 sem. hrs.

ENM 582. ORGANIZATIONAL DEVELOPMENT IN AN ENGINEERING ENVIRONMENT: The inter-personal and group skills needed by the engineering manager. Emphasis on establishing work environments which allow for communication, trust, high morale, satisfaction, and productive group activity.

3 sem. hrs.

**ENM 585. ORGANIZATIONAL SYSTEMS:** Introduction to organizational theory and practice with emphasis on the design of organizational structures for the effective integration of production, research and development, and engineering activities. Special topics include high performing systems, the technical *ad hoc* committee, matrix organization, and project management. *3 sem. hrs.*

**ENM 586. DESIGN OF ORGANIZATIONAL SYSTEMS:** Guided study of the design of organizations. Emphasis on the implementation of actual design studies. Prerequisite: ENM 585. *3 sem. hrs.*

**ENM 590. CASE STUDIES IN ENGINEERING MANAGEMENT:** Student participation in an engineering management project or study under the direction of a project advisor. A satisfactory written engineering report, as determined by the project advisor, is required at the completion of the project. Prerequisite: permission of the advisor. *3-6 sem. hrs.*

**ENM 595. SPECIAL PROBLEMS IN ENGINEERING MANAGEMENT:** Special assignments in engineering management to be arranged and approved by the advisor and the program director. *2-6 sem. hrs.*



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## MANAGEMENT SCIENCE (MSC)

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John R. Fraker, Director of the Program

### PROGRAM REQUIREMENTS

The program leading to the Master of Science in Management Science is interdisciplinary and is administered by the School of Engineering with the cooperative support of the College of Arts and Sciences, the School of Business Administration, and the School of Education. Applications are invited from college graduates in all fields of study — Business, Education, Engineering, the liberal arts, the physical sciences, and the social sciences. The applicant whose preparation does not include at least three semester of analytic geometry and calculus, two semesters of probability and statistics, and competence in a computer language will be expected to satisfactorily complete appropriate prerequisite courses prior to admission to the program.

The management scientist is the manager or staff specialist who is trained in the quantitative methodologies of operations research, systems analysis, and the decision sciences. The student is proficient in problem solving and decision making, system modeling and optimization, and the application of probability and statistical theory to management problems and must be familiar with a variety of other topics, such as quality control, inventory planning and control, reliability and maintainability, and system simulation.

The objective of this program is to develop quantitative management skills and capabilities appropriate to each student's needs and objectives. The program emphasizes the practical application of the techniques of management science in our modern society, and the importance of the computer as a tool for the management scientist is stressed throughout the program. The program of study must include a minimum of 36 semester hours consisting of the following:

1. Eighteen semester hours of courses in Management Science. These will normally include MSC 521, 522, and 535.
2. Nine semester hours in a cognate field appropriate to the student's objectives, as approved by the advisor. Approved fields of study for the cognate field are Applied Mathematics, Business Administration, Computer Science, Educational Administration, Engineering, Human Factors, and Public Administration.
3. Nine semester hours of electives as approved by the advisor and the program director.

See also Master's Degree regulations in the introductory section of this chapter and consult with the advisor.

### COURSES OF INSTRUCTION

MSC 521. OPERATIONS RESEARCH I: Introduction to the deterministic models and methods of operations research, with emphasis on the solution of real problems in both the public and private sectors. Topics from mathematical programming, network analysis, and game theory. The use of the digital computer is emphasized. 3 sem. hrs.

**MSC 522. OPERATIONS RESEARCH II:** Introduction to the probabilistic models and methods of operations research, with emphasis on the solution of real problems in both the public and private sectors. Topics include inventory models, stochastic processes, queueing theory, and system simulation. The use of the digital computer is emphasized. Prerequisite: MTH 368 or equivalent. *3 sem. hrs.*

**MSC 523. OPTIMIZATION I:** Introduction to the Methodology of optimization with emphasis on application to engineering systems. Classical optimization, constrained optima, search techniques, and steepest ascent techniques. The use of the digital computer is emphasized. *3 sem. hrs.*

**MSC 526. OPTIMIZATION II:** Advanced topics in linear programming. Emphasis on computational techniques and applications of linear programming to industrial problems. Primal-dual algorithm, decomposition principle, assignment problem, transportation and trans-shipment problems, network flow algorithms, and integer programming. The use of the digital computer is emphasized. Prerequisite: MSC 521. *3 sem. hrs.*

**MSC 527. OPTIMIZATION III:** Nonlinear and dynamic programming. Development of the theory and computational techniques of nonlinear and dynamic programming. Applications of optimization methods, nonlinear programming, stochastic programming, gradient methods, dynamic programming, Kuhn-Tucker theory, and quadratic programming. The use of the digital computer is emphasized. Prerequisites: MSC 521 and 523. *3 sem. hrs.*

**MSC 535. INTRODUCTION TO DECISION MAKING:** Introduction to rational decision making with applications in the analysis and design of engineering and management systems. Decision making under uncertainty and risk as well as under certainty. Group decision making. Multiple-criteria decision making. Corequisite: MTH 368 or equivalent. *3 sem. hrs.*

**MSC 541. PRODUCTION ENGINEERING:** The design of systems of men and machines for the production process: forecasting, scheduling, production and inventory control, staffing, and equipment replacement. Prerequisite: MTH 368 or equivalent. *3 sem. hrs.*

**MSC 542. INVENTORY THEORY AND APPLICATION:** Theory and application of inventory control with respect to costs of ordering and manufacturing, holding and storage, shortage penalty costs, revenues, and discount rates. Forecasting material control, input capacity and scheduling, stochastic inventory models, and dynamic inventory models including real time computerized inventory control models. Prerequisites: MTH 368, MSC 522 or equivalent. *3 sem. hrs.*

**MSC 544. DISCRETE TIME SERIES:** Emphasis on industrial application of open loop statistical forecasts. Techniques of describing a time series by very general classes of functions, including trigonometric functions. Prerequisites: MTH 368, MSC 522 or equivalent. *3 sem. hrs.*

**MSC 546. QUEUEING THEORY AND APPLICATION:** Emphasis on application of queueing theory to engineering problems. Machine interference, mathematical queueing models, marketing models, servicing problems, Monte Carlo techniques, and computer simulation models. Prerequisites: MTH 368, MSC 522 or equivalent. *3 sem. hrs.*

MSC 555. SYSTEMS DYNAMICS I: Introduction to the methodology for modeling the dynamics of complex engineering, business, socioeconomic systems. The use of these models to study the effect of organizational policies and design in higher order, multiple-loop, nonlinear feedback systems. The use of the digital computer is emphasized.

3 sem. hrs.

MSC 556. SYSTEMS DYNAMICS II: Continuation of MSC 555 with emphasis on the study of large scale corporate, urban, educational, and ecological systems. Prerequisite: MSC 555 or equivalent.

3 sem. hrs.

MSC 560. QUALITY ASSURANCE: Application of statistical principles of analysis and control to production processes, studies of process capabilities, quality control, and engineering experimentation. Prerequisite: MTH 368 or equivalent.

3 sem. hrs.

MSC 561. DESIGN AND ANALYSIS OF EXPERIMENTS: Advanced topics in experimental design and analysis, including experimental design, response surface analysis, multiple and partial regression and correlation. The use of the digital computer is emphasized. Prerequisite: MTH 368 or equivalent.

3 sem. hrs.

MSC 565. RELIABILITY ENGINEERING I: Introduction to the concepts and methodology of reliability engineering. The reliability of components and multi-component systems, analysis and design of systems, and design and evaluation of processes for assuring the reliability, maintainability, availability of systems. Prerequisite: MSC 565 or equivalent.

3 sem. hrs.

MSC 566. RELIABILITY ENGINEERING II: Continuation of MSC 565. Advanced topics in reliability engineering, with emphasis on the design of systems to meet specified reliability, availability, and maintainability requirements. Prerequisite: MSC 565 or equivalent.

3 sem. hrs.

MSC 572. SYSTEM SIMULATION: The construction of models which simulate real systems, the generation of random inputs to obtain sample observations of the model, and the inference of system properties from the observations of the model. The use of the digital computer is emphasized. Prerequisites: MTH 368, MSC 522 or equivalent.

3 sem. hrs.

MSC 595. CURRENT PROBLEMS: (Subject will vary.) Topics of current interest in specialized areas of Management Science.

3 sem. hrs.

MSC 599. THESIS

6 sem. hrs.

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## MATERIALS ENGINEERING (MAT)

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James A. Snide, Director of the Program

Materials Engineering is a major concentration for both the Doctor of Philosophy in Engineering and the Doctor of Engineering. See Doctor's Degree regulations in the introductory section of this chapter and consult with the director of the programs.

### PROGRAM REQUIREMENTS

The program of study leading to the Master of Science in Materials Engineering must include a minimum of 30 semester hours consisting of the following:

1. Twelve semester hours in the major field.
2. Twelve semester hours of approved electives from current course offerings which best suit the student's requirements.
3. Six semester hours of research on a Materials Engineering project or thesis.

Upon the request of the student and with the approval of the advisor and the program director, this may be replaced by six semester hours of additional course work.

See also Master's Degree regulations in the introductory section of this chapter, and consult with the advisor.

### COURSES OF INSTRUCTION

**MAT 501. PRINCIPLES OF MATERIALS I:** The electronic, atomic, submicroscopic, microscopic, and macroscopic structures of crystalline solids, including bonding, electron theory of metals, crystals, dislocations, phase diagrams, phase transformations, and diffusion. Prerequisite: MTH 219. 3 sem. hrs.

**MAT 502. PRINCIPLES OF MATERIALS I:** A general introduction to the mechanical and electronic properties of materials. Elasticity; plasticity creep; fracture; electrical and thermal processes; magnetic, dielectric and optical properties. Prerequisite: MAT 501. 3 sem. hrs.

**MAT 503. X-RAY CRYSTALLOGRAPHY:** Introduction to the fundamentals of crystallography and x-ray diffraction techniques with application to the study of materials. Two hours lecture and one three-hour laboratory per week. Prerequisite: MAT 501 or consent of instructor. 3 sem. hrs.

**MAT 504. TECHNIQUES IN MATERIALS ANALYSIS:** Fundamentals and applications of the traditional analytical methods such as metallography, x-ray analysis, electron microprobe, transmission and scanning microscopy. Recent techniques: NMR, EPR, atomic absorption, Raman and Mossbauer spectroscopy, holography, ESCA and Auger spectroscopy. Emphasis on applicability. Prerequisite: MAT 501 or consent of instructor. 3 sem. hrs.

**MAT 505. THERMODYNAMICS OF SOLIDS:** Thermodynamic properties of solutions and intermediate phases. Equilibrium behavior of phase mixtures. Representation of multi-component phase diagram. Experimental Determination and prediction of phase diagrams. Prerequisite: MAT 502 or consent of instructor. *3 sem. hrs.*

**MAT 506. MECHANICAL BEHAVIOR OF MATERIALS:** Description of the state of stress and strain in materials, plastic deformation, fatigue, fracture, creep, and rupture. Prerequisite: MAT 502 or consent of instructor. *3 sem. hrs.*

**MAT 507. INTRODUCTION TO CERAMIC MATERIALS:** Ceramic raw materials, manufacturing processes, and unique properties of ceramic products: glasses, porcelain enamels, ceramic-metal seals, electrical and magnetic ceramics, refractories, and ceramics for special applications. Prerequisite: MAT 501. *3 sem. hrs.*

**MAT 508. PRINCIPLES OF MATERIAL SELECTION:** Basic scientific and practical consideration involved in the intelligent selection of materials for specific applications. Impact of new developments in materials technology and analytical techniques. Prerequisite: MAT 501 or consent of instructor. *3 sem. hrs.*

**MAT 509. INTRODUCTION TO POLYMER SCIENCE:** Introduction to polymers. A review of the field, including polymer production, characterization, and processing. Prerequisite: college Chemistry and calculus. *3 sem. hrs.*

**MAT 510. PHYSICAL PROPERTIES OF POLYMERS:** Intensive discussion of the interrelations between molecular structure and gross physical properties of polymers. Emphasis on relating laboratory data to industrial applications. Prerequisites: Background in differential equations, organic or physical chemistry or MAT 509. *3 sem. hrs.*

**MAT 511. PRINCIPLES OF CORROSION:** Application of electrochemical principles, corrosion reactions, passivation, cathodic and anodic protection, stress corrosion, and high temperature oxidation. *3 sem. hrs.*

**MAT 512. MAGNETIC MATERIALS — PHYSICAL PRINCIPLES:** Description of magnetic material properties. The magnetic circuit. Atomic magnetism. Types of magnetic order and spin structure. Intrinsic magnetization. Molecular field concept. Anisotropy. Magnetostriction. Magnetic resonances. Prerequisite: ELE 333 or consent of instructor. *3 sem. hrs.*

**MAT 513. MAGNETIC MATERIALS FOR ENGINEERING APPLICATIONS:** Magnetic domains. Technical magnetization and domain structure. A.C. properties, losses, eddy currents. Causes of coercivity. Metallic and ceramic materials for transformers, electrical machinery, permanent magnets, HF devices, data recording, computer memories. Metallurgy and crystallography of magnetic materials. Prerequisite: MAT 512 or consent of instructor. Note: Simultaneous attendance in MAT 513S is recommended. *3 sem. hrs.*

**MAT 513S. MAGNETIC MATERIALS PROSEMINAR** *1 sem. hr.*

**MAT 514. APPLIED SUPERCONDUCTIVITY - AN INTRODUCTION:** Basic phenomena. Theoretical concepts, Superconductive materials - types, properties, physics, metallurgy, Superconducting magnets. Other present and future engineering applications. Prerequisite: consent of instructor. *2 sem. hrs.*

- MAT 516. THEORY OF SOLIDIFICATION OF METALS:** Classical treatment of solid-liquid phase transformation applying theories of nucleation and growth, diffusion and heat transfer. Recent work in advanced solidification techniques will be reviewed. Prerequisite: MAT 502 or consent of instructor. *3 sem. hrs.*
- MAT 515. STATISTICAL THERMODYNAMICS:** Microscopic thermodynamics; kinetic theory; virial theorem of Clausius; transport phenomena; Gibbs, Boltzman, Bose-Einstein, Fermi-Dirac statistics. Connection between statistical and thermodynamic qualities. Applications to perfect and real gases, liquids, crystalline solids, and thermal radiation. Information theory, irreversible thermodynamics. Prerequisites: MEE 301, MTH 219. *3 sem. hrs.*
- MAT 517. PHASE DIAGRAMS:** Construction, interpretation and application of phase diagrams for multi-component systems. Prerequisite: MAT 502. *3 sem. hrs.*
- MAT 518. DIFFUSION IN SOLIDS:** Atomistic and phenomenological treatment of multicomponent diffusion in the solid state. Prerequisite: MAT 502. *3 sem. hrs.*
- MAT 519. PHASE TRANSFORMATION IN METALS:** Classical treatment of phase transformation, nucleation and growth, recovery and recrystallization and advanced processes in control microstructures and properties. Prerequisite: MAT 502. *3 sem. hrs.*
- MAT 520. POWDER METALLURGY:** Theoretical treatment of various steps in the production of a powder metallurgy component including powder production and subsequent processing. Prerequisite: MAT 502. *3 sem. hrs.*
- MAT 521. NONDESTRUCTIVE EVALUATION:** Theoretical treatment of flaw detection techniques for both metals and advanced composites and statistical analysis of probability of detection and quality assurance. Prerequisite: MAT 502. *3 sem. hrs.*
- MAT 525. DESIGN OF MACROMOLECULAR SYSTEMS:** Polymer preparation by chain polymerization and stepwise polymerization; copolymerization; stereospecific polymerizations; formation of network polymers; heterogeneous reaction systems; aging and stabilization. Prerequisite: CHM 314, MAT 510. *3 sem. hrs.*
- MAT 526. POLYMER ENGINEERING:** Rheology of polymer metals; fundamentals of polymer processing; design of processing operation and their relation to the physical and mechanical behavior of polymers in molten and solid states; control of polymer processing through proper material selection. Prerequisite: MEE 308, MEE 410, MAT 510. *3 sem. hrs.*
- MAT 527. METHODS OF POLYMER ANALYSIS:** Modern laboratory techniques used in preparation and characterization of polymers; experimental investigations of polymer structure-property relations; measurement of molecular weight averages and distributions, thermal and mechanical properties, viscoelastic properties; transition and crystallinity. Prerequisite: MAT 509, MAT 510. *3 sem. hrs.*

**MAT 542. ADVANCED COMPOSITES:** Materials and Processing. Comprehensive introduction to advanced fiber reinforced polymeric matrix composites. Constituent materials, processing will be emphasized with special emphasis placed on the role of the matrix in composite processing and mechanical behavior and laminate processing. Specific topics will include starting materials, material forms, processing, quality assurance and mechanical behavior. Prerequisites: MAT 502, MAT 509, or consent of instructor. *3 sem. hrs.*

**MAT 543. MECHANICS OF COMPOSITE MATERIALS:** Analytical models are developed for predicting the mechanical and thermal behavior of fiber reinforced composites as a function of constituent material properties. Both continuous and discontinuous fiber reinforced systems are considered. Specific topics include basic mechanics of anisotropic materials, micromechanics, and lamination theory. *3 sem. hrs.*

**MAT 544. STRUCTURAL BEHAVIOR OF COMPOSITES:** Comprehensive treatment of laminated plates and cylindrical shells. Bending, buckling, and vibration analysis are considered. Various orders of theory and their range of parametric application are emphasized. Thermal stresses are also considered. Prerequisite: MAT 543 or consent of instructor. *3 sem. hrs.*

**MAT 550. MATERIALS ENGINEERING PROJECT:** Student participation in a materials engineering project under the direction of a project advisor. The student prepares a satisfactory written report, as determined by the project advisor, and presents an open seminar on the subject of the project. *1-6 sem. hrs.*

**MAT 570. FRACTURE MECHANICS:** Application of principles of fracture mechanics to fatigue and fracture in engineering structures. Prerequisites: MAT 502 or consent of instructor.

**MAT 575. FATIGUE AND FRACTURE OF METALS AND ALLOYS:** Treatment of the effect of microstructures on the fatigue and fracture of engineering metals and alloys. Various analytical techniques in the failure analysis of structural components will be reviewed. Prerequisite: MAT 502, MAT 506 or consent of instructor. *3 sem. hrs.*

**MAT 590. SELECTED READINGS IN MATERIALS ENGINEERING:** Directed readings in selected areas of materials engineering arranged and approved by the student's advisor and the program director. *1-3 sem. hrs.*

**MAT 595. SPECIAL PROBLEMS IN MATERIALS ENGINEERING:** Special assignments arranged by the materials engineering faculty. *1-3 sem. hrs.*

**MAT 599. THESIS** *3-6 sem. hrs.*

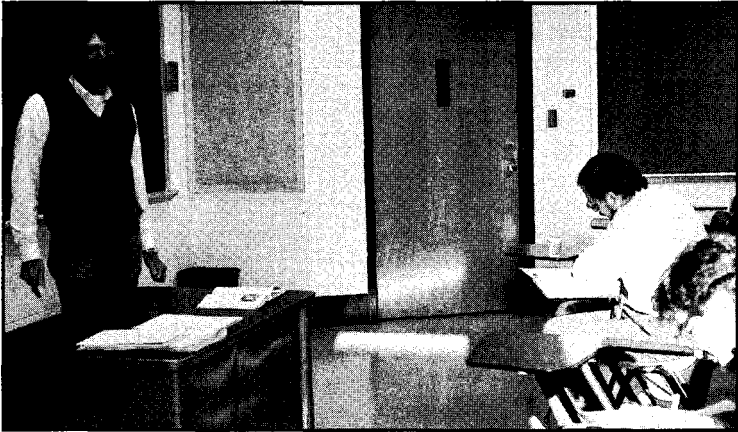
**MAT 601. SURFACE CHEMISTRY OF SOLIDS:** The nature of solid surfaces and their importance to chemical and physical reactions at solid-gas, solid-liquid, and solid-solid interfaces. Prerequisites: MAT 501 and 502 or consent of instructor. *3 sem. hrs.*

**MAT 690. SELECTED READINGS IN MATERIALS ENGINEERING:** Directed readings in materials engineering area arranged and approved by the chairperson of the student's advisory committee and the program director. May be repeated. *1-3 sem. hrs.*

**MAT 695. SPECIAL PROBLEMS IN MATERIALS ENGINEERING:** Special assignments in materials engineering subject matter arranged and approved by the student's doctoral advisory committee and the program director. May be repeated. *1-3 sem. hrs.*

**MAT 698. D.E. DISSERTATION:** An original investigation as applied to materials engineering practice. Results must be of sufficient importance to merit publication.  
*1-15 sem. hrs.*

**MAT 699. Ph.D. DISSERTATION:** An original research effort which makes a definite contribution to technical knowledge. Results must be of sufficient importance to merit publication.  
*1-15 sem. hrs.*



**Richard P. Chartoff.**  
*Department of Materials Engineering.*



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Department of

## **MECHANICAL ENGINEERING (MEE)**

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John J. Schauer, Chairperson of the Department

Mechanical Engineering is a major concentration for both the Doctor of Philosophy in Engineering and the Doctor of Engineering. See Doctoral Degree regulations in the introductory section of this chapter and consult with the departmental chairperson and the director of the programs.

### **PROGRAM REQUIREMENTS**

For the Master of Science in Mechanical Engineering, major areas of concentration are Materials Engineering, Thermal Engineering, Energy Conversion, Fluid Mechanics, Solid Mechanics, and Mechanical Design. Each program of study leading to this degree must include a minimum of 30 semester hours consisting of the following:

1. Twelve to 15 semester hours in Mechanical Engineering courses to be selected from one of the following areas of concentration:  
Materials Engineering - MEE 500, 501, 502, 505, 506, 508, 525, 575, 590A.  
Thermal Engineering - MEE 500, 511, 512, 513, 514, 515, 516, 517, 565, 566, 567, 590B, 595.  
Energy Conversion - Only one of the following two courses: MEE 568, MEE 569, and 9-12 semester hours from the following: MEE 500, 511, 513, 514, 565, 567, 590B, 595.  
Fluid Mechanics - MEE 500, 503, 516, 551, 553, 590C, 595.  
Solid Mechanics - MEE 500, 503, 533, 534, 535, 536, 538, 539, 543, 544, 545, 546, 547, 548, 549, 590D, 595.  
Mechanical Design - MEE 500, 503, 527, 532, 533, 534, 535, 536, 538, 539, 540, 543, 544, 545, 546, 547, 548, 549, 590E, 595.
2. Six semester hours of research on a Mechanical Engineering project or thesis. Upon the request of the student and with the approval of the faculty advisor and the department Chairperson, this requirement may be replaced by six semester hours of additional course work.
3. Nine to 12 semester hours of electives, to be chosen from current course offerings which best suit the student's requirements. For the major area of Energy Conversion, 15 semester hours must be selected from paragraphs 1 and 2 above, and one of the following two courses must be selected: MEE 568, MEE 569.

See also Master's Degree regulations in the introductory section of this chapter and consult with the advisor.

## COURSES OF INSTRUCTION

Students who have completed work equivalent to the prerequisite courses may be enrolled in these courses with the consent of the instructor.

**MEE 500. ADVANCED ENGINEERING ANALYSIS:** Detailed analysis of engineering problems using laws of nature, fundamental engineering principles, mathematics, computers and practical experience to construct, resolve and test analytic models of physical events. Emphasis is on the use of the professional engineering approach which includes formulation of the problem, assumptions, plan or method of attack, solving the problem, checking and generalizing the results. *3 sem. hrs.*

**MEE 501. PRINCIPLES OF MATERIALS I:** The electronic, atomic, submicroscopic, microscopic, and macroscopic structures of crystalline solids. Bonding, electron theory of metals, crystals, dislocations, phase diagrams, phase transformations, and diffusion. *3 sem. hrs.*

**MEE 502. PRINCIPLES OF MATERIALS II:** General introduction to the mechanical and electronic properties of materials, Elasticity; plasticity; creep; fracture; electrical and thermal processes; magnetic, dielectric, and optical properties. Prerequisite: MEE 501. *3 sem. hrs.*

**MEE 503. INTRODUCTION TO CONTINUUM MECHANICS:** Tensors, calculus of variations, Lagrangian and Eulerian descriptions of motion. General equations of continuum mechanics, constitutive equations of mechanics, thermodynamics of continua. Specialization to cases of solid and fluid mechanics. Prerequisite: EGM 303. *3 sem. hrs.*

**MEE 505. THERMODYNAMICS OF SOLIDS:** Thermodynamic properties or solutions and intermediate phases. Equilibrium behavior of phase mixtures. Representation of multi-component phase diagrams. Experimental determination and prediction of phase diagrams. Prerequisites: MEE 502, or consent of instructor. *3 sem. hrs.*

**MEE 506. MECHANICAL BEHAVIOR OF MATERIALS:** Description of the state of stress and strain in materials, plastic deformation, fatigue, fracture, creep, and rupture. Prerequisite: MEE 502 or consent of instructor. *3 sem. hrs.*

**MEE 508. PRINCIPLES OF MATERIALS SELECTION:** Basic scientific and practical consideration involved in the intelligent selection of materials for specific applications. Impact of new developments in materials technology and analytical techniques. Prerequisite: MEE 501 or consent of instructor. *3 sem. hrs.*

**MEE 511. CLASSICAL THERMODYNAMICS:** Equilibrium, first law, second law, state principle, and zeroth law; development of entropy and temperature from availability concepts; chemical potential, chemical equilibrium, and phase equilibrium. Thermodynamics of irreversible processes; Onsager reciprocal relations; application of these concepts to direct energy conversion. *3 sem. hrs.*

**MEE 512. MICROSCOPIC THERMODYNAMICS:** Microscopic thermodynamics; kinetic theory; virial theorem of Clausius; transport phenomena; Gibbs, Boltzman, Bose-Einstein, Fermi-Dirac statistics. Connection between statistical and thermodynamic quantities. Applications to perfect and real gases, liquids, crystalline solids, and thermal radiation. Irreversible thermodynamics. *3 sem. hrs.*

**MEE 513. PROPULSION:** Principles of propulsive devices, aerothermodynamics, diffuser and nozzle flow, energy transfer in turbo-machinery, turbojet, turbo-fan, prop-fan engines, turbo-prop and turboshaft engines. RAM and SCRAM jet analysis and a brief introduction to related materials and air frame-propulsion interaction. Prerequisite: MEE 418. *3 sem. hrs.*

**MEE 514. DIRECT ENERGY CONVERSION:** Introduction to the principles of direct energy conversion. Irreversible thermodynamics; semiconductors; thermoelectric and photo-voltaic devices; magnetohydrodynamics; thermionic devices; fuel cells. Prerequisite: MEE 410. *3 sem. hrs.*

**MEE 515. CONDUCTION HEAT TRANSFER:** Steady state and transient state conduction. Evaluation of temperature fields by formal mathematics and numerical analysis. Emphasis on approximate solution techniques. *3 sem. hrs.*

**MEE 516. CONVECTION HEAT AND MASS TRANSFER:** Development of governing differential equations for convection. Methods of solution including similarity methods, integral methods, and superposition of solutions. Turbulent flow convection; integral methods, eddy diffusivities for heat and momentum. Extensions to mass transfer. Prerequisite: MEE 410 or equivalent. *3 sem. hrs.*

**MEE 517. RADIATION HEAT TRANSFER:** Fundamental relationships of radiation heat transfer. Radiation characteristics of surfaces. Geometric considerations in radiation exchange between surfaces. Emissivity and absorptivity of gases. Introduction to radiative exchange in gases. *3 sem. hrs.*

**MEE 525. PRINCIPLES OF CORROSION:** Application of electrochemical principles, corrosion reactions, passivation, cathodic and anodic protection, stress corrosion, and high temperature oxidation. *3 sem. hrs.*

**MEE 527. AUTOMATIC CONTROL THEORY:** Analysis and synthesis of feedback control systems; including hydraulic, pneumatic, mechanical and electrical systems. Frequency response; linear state space techniques; stability analysis; nonlinear system analysis and Liapunov stability. Prerequisite: ELE 432 or MEE 435 or equivalent, Computer Programming. *3 sem. hrs.*

**MEE 532. ACOUSTICS:** Physics of sound propagation, psychological effects of noise, noise control criteria and regulations, transmission phenomena, acoustics of walls and enclosures, resonators and filters, acoustic properties of materials, acoustic consideration in structural and machine design. *3 sem. hrs.*

**MEE 533. THEORY OF ELASTICITY:** Three-dimensional stress and strain at a point; equations of elasticity in Cartesian and curvilinear coordinates; methods of formulation of equations for solution; plane stress and plane strain; energy formulations; numerical solution procedures. Corequisite: EGM 503. *3 sem. hrs.*

**MEE 534. THEORY OF PLATES AND SHELLS:** Theory of plates: small and large displacement theories of this plates; shear deformation; buckling; sandwich plate theory. This shell theory: theory of surfaces; thin shell equations in orthogonal curvilinear coordinates; bending, membrane, and shallow shell theories. Prerequisite: EGM 533. *3 sem. hrs.*

**MEE 535. ADVANCED MECHANICAL VIBRATIONS:** Review of undamped, damped, natural and forced vibrations of one and two degrees of freedom systems. Lagrange's equation, eigenvalue/eigenvector problem, modal analysis for discrete and continuous systems. Computer application for multi-degree of freedom, nonlinear problems. Prerequisite: Computer Programming and MEE 319. *3 sem. hrs.*

**MEE 536. RANDOM VIBRATIONS:** Introduction to probability distribution; characterization of random vibrations; harmonic analysis; auto- and cross-correlation and spectral density; coherence; response to single and multiple loadings; Fast Fourier Transform (FFT); applications in vibrations, vehicle dynamics, fatigue, etc. Prerequisites: Computer Programming and MEE 319. *3 sem. hrs.*

**MEE 538. INTRODUCTION TO AEROELASTICITY:** The study of the effect of aerodynamic forces on a flexible aircraft. Flexibility coefficients and natural modes of vibration. Quasi-steady aerodynamics. Static aeroelastic problems; wing divergence and dynamic aeroelasticity; wing flutter. An introduction to structural stability augmentation with controls. *3 sem. hrs.*

**MEE 539. THEORY OF PLASTICITY:** Fundamentals of plasticity theory including: elastic, viscoelastic, and elastic-plastic constitutive models; plastic deformation on the macroscopic and microscopic levels; stress-strain relations in the plastic regime; strain hardening; limit analysis; numerical procedures. Prerequisite: EGM 503 or 533. *3 sem. hrs.*

**MEE 540. BEARINGS AND BEARING LUBRICATION:** Theoretical aspects of lubrication; determination of pressure distribution in bearings from viscous flow theory; application of hydrodynamic and hydrostatic bearing theories to the design of bearings; high-speed bearing design problems; properties of lubricants; methods of testing. *3 sem. hrs.*

**MEE 543. FUNDAMENTALS OF ADVANCED STRUCTURAL MATERIALS:** Introduction of anisotropic material and its complex behavior, comparison with isotropic material. Tools for analysis and design of aerospace structures with laminated composites. Classical laminated plate theory as a special case of the more general and complex anisotropic plate theory from practical application. *3 sem. hrs.*

**MEE 544. STRUCTURAL BEHAVIOR OF COMPOSITES:** Comprehensive treatment of laminated plates and cylindrical shells. Bonding, buckling, and vibration analysis are considered. Various orders of theory and their range of parametric application are emphasized. Thermal stresses are also considered. Prerequisite: MEE 543. *3 sem. hrs.*

**MEE 545. COMPUTATIONAL METHODS FOR DESIGN:** Modeling of mechanical systems and structures, analysis by analytical and numerical methods, development of mechanical design criteria and principles of optimum design, selected topics in mechanical design and analysis, utilization of the digital computer as an aid in the design of mechanical elements. *3 sem. hrs.*

**MEE 546. FINITE ELEMENT ANALYSIS I:** Fundamentals of the Finite Element Method; interpolation functions; derivation of finite elements for bars, beams, plates, shells; isoparametric solid finite elements; isoparametric shell finite elements; natural vibration; elastic stability. Prerequisite: EGM 503 or 533. *3 sem. hrs.*

**MEE 547. FINITE ELEMENT ANALYSIS II:** Advanced topics: heat transfer; transient dynamics; nonlinear analysis; substructuring and static condensation; effects of inexact numerical integration and element incompatibility; patch test; frontal solution techniques; selected topics from the recent literature. Prerequisite: EGM 546. *3 sem. hrs.*

**MEE 548. ENERGY METHODS IN SOLID MECHANICS:** Development of fundamental energy principles; virtual displacements, strain energy, Castigliaro's theorems, minimum potential energy principles. Applications to engineering problems; redundant structures, buckling, static and dynamic analysis. Prerequisite: MEE 503 or MEE 533. *3 sem. hrs.*

**MEE 549. THEORY OF ELASTIC STABILITY:** Introduction to stability theory: buckling of plates and shells; influence of initial imperfections; nonlinear analysis: numerical solutions methods. Prerequisite: MEE 533. *3 sem. hrs.*

**MEE 550. MECHANICAL ENGINEERING PROJECT:** Student participation in a departmental research, design, or development project under the direction of a project advisor. The student must show satisfactory progress as determined by the project advisor and present a written report at the conclusion of the project. *1-6 sem. hrs.*

**MEE 551. VISCOUS FLOW:** Fundamentals of viscous flow. Navier-Stokes and boundary layer equations. Exact and approximate solutions of these equations using modern computational procedures for both laminar and turbulent flows. Prerequisite: MEE 503. *3 sem. hrs.*

**MEE 553. COMPRESSIBLE FLOW:** Fundamental equations of compressible flow, introduction to flow in two and three dimensions. Two-dimensional supersonic flow, small perturbation theory, method of characteristics, oblique shock theory. Introduction to unsteady one-dimensional motion and shock tube theory. Method of surface singularities. Prerequisite: MEE 418. *3 sem. hrs.*

**MEE 565. FUNDAMENTALS OF COMBUSTION:** Heat of combustion and flame temperature calculations: rate of chemical reaction and Arrhenius relationship: theory of thermal explosions and the concept of ignition delay and critical mass: phenomena associated with hydrocarbon-air combustion: specific applications of combustion. *3 sem. hrs.*

**MEE 566. COMBUSTION THEORY:** Theory of detonation (Rankine-Hugoniot relationships) and flame propagation rates in pre-gas mixed systems: turbulent flames and the well-stirred reactor; theory of diffusion flames; fuel droplet combustion; steady burning of solid materials, ignition and flame spreading across solid materials. *3 sem. hrs.*

**MEE 567. SOLAR HEATING ANALYSIS:** Topics dealing with energy usage patterns; thermal insulation studies and energy conversion schemes; building heating load calculations; characteristics and measurement of solar radiation; analysis and testing of solar collectors; active and passive solar heating systems; economic trends of solar heating; heat pumps. *3 sem. hrs.*

**MEE 568. INTERNAL COMBUSTION ENGINES:** A study of combustion and energy release processes. Applications to spark and compression ignition, thermal jet, rocket, and gas turbine engines. Idealized and actual cycles are studied in preparation for laboratory testing of internal combustion engines. *3 sem. hrs.*

**MEE 569. HEATING AND AIR CONDITIONING:** Topics dealing with thermal environments and methods of control, Included are psychometrics, solar radiation, heat transmission through solid boundaries, industrial and residential environments, residential heating and cooling load calculations. *3 sem. hrs.*

**MEE 570. FRACTURE MECHANICS:** Application of principles of fracture mechanics to fatigue fracture in engineering structures. Prerequisite: MEE 502 or consent of instructor. *3 sem. hrs.*

**MEE 575. FATIGUE AND FRACTURE OF METALS AND ALLOYS:** Treatment of the effect of microstructures on the fatigue and fracture of engineering metals and alloys. Various analytical techniques in the failure analysis of structural components will be reviewed. Prerequisite: MEE 502, MEE 506 or consent of instructor. *3 sem. hrs.*

**MEE 590. SELECTED READINGS:** Directed readings in a designated area arranged and approved by the student's faculty advisor and the departmental chairperson. May be repeated. (A) Materials Engineering, (B) Thermal Engineering, (C) Energy Conversion, (D) Fluid Mechanics, (E) Solids Mechanics, (F) Mechanical Design. *1-6 sem. hrs. each*

**MEE 595. SPECIAL PROBLEMS IN MECHANICAL ENGINEERING:** Special assignments in mechanical engineering subject matter arranged and approved by the student's faculty advisor and the departmental chairperson. *1-6 sem. hrs.*

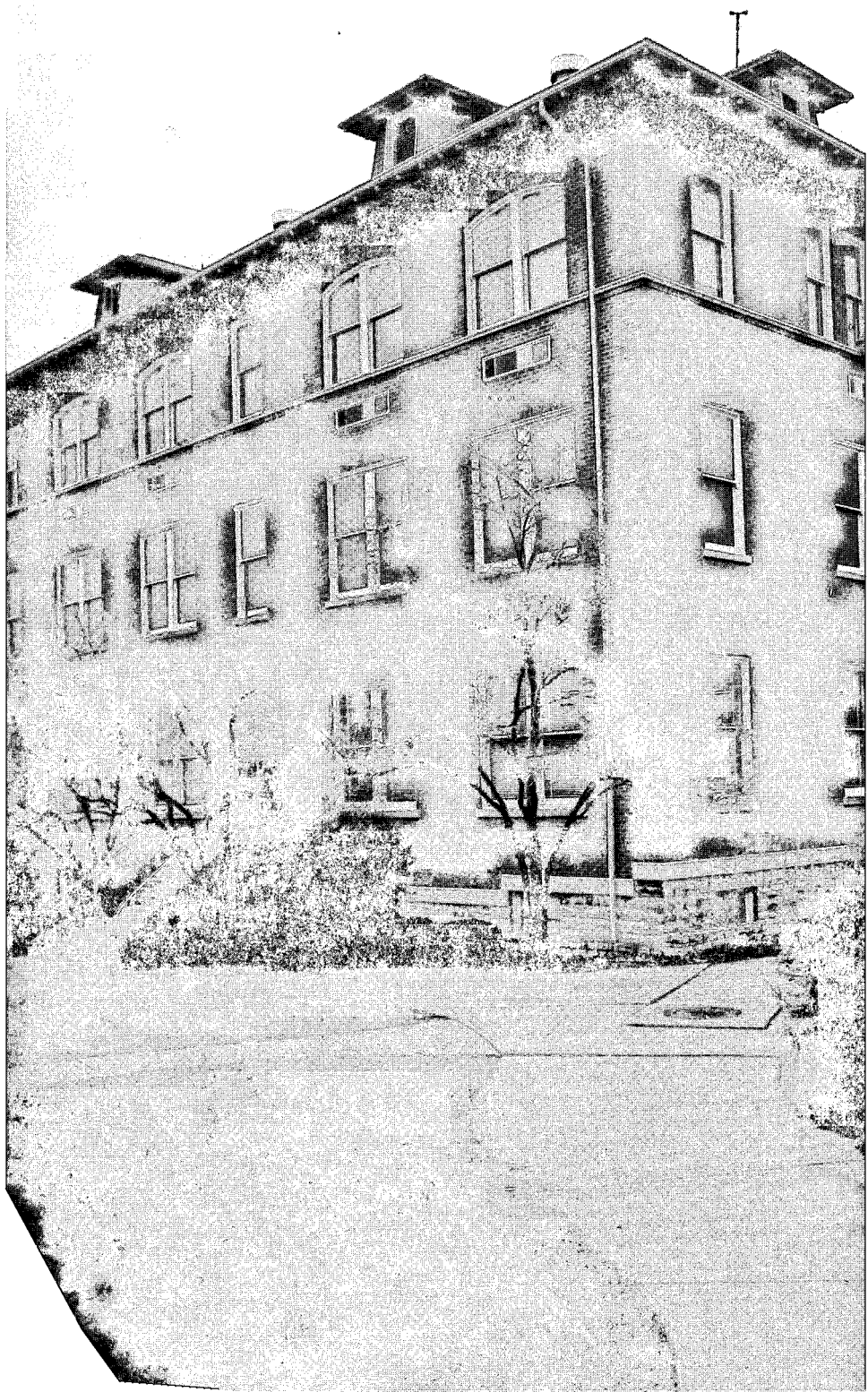
**MEE 599. THESIS.** *1-6 sem. hrs.*

**MEE 690. SELECTED READINGS:** Directed readings in a designated area arranged and approved by the student's doctoral advisory committee and the departmental chairperson. May be repeated. (A) Materials Engineering, (B) Thermal Engineering, (C) Fluid Mechanics, (D) Solid Mechanics (F) Mechanical Design. *1-6 sem. hrs. each*

**MEE 595. SPECIAL PROBLEMS IN MECHANICAL ENGINEERING:** Special assignments in mechanical engineering subject matter arranged and approved by the student's doctoral advisory committee and the department chairperson. May be repeated. *1-6 sem. hrs.*

**MEE 698. D.E. DISSERTATION:** An original investigation as applied to mechanical engineering practice. Results must be of sufficient importance to meet publication. *1-15 sem. hrs.*

**MEE 699. Ph.D. DISSERTATION:** An original research effort which makes a definite contribution to technical knowledge. Result must be of sufficient importance to meet publication. *1-15 sem. hrs.*



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# XI SCHOOL OF LAW

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Frederick B. Davis, Dean  
Patricia H. Roll, Associate Dean  
Laurence B. Wohl, Associate Dean

## PROGRAMS AND COURSES OF STUDY

### ADMISSION REQUIREMENTS

A candidate for the Juris Doctor degree must have received a Bachelor's degree from an approved American college or certification from an institution of higher learning which, in the judgement of the faculty, is equivalent to such degree. In addition, a candidate must achieve a satisfactory score on the nationally administered Law School Admissions Test.

### JURIS DOCTOR DEGREE

In order to be eligible for the first degree in Law, the Juris Doctor, a student must meet the following requirements:

1. Satisfactory completion of all required courses and sufficient elective courses for a minimum of 87 credit hours of Law school work, or approved equivalent;
2. A minimum cumulative grade-point-average of 2.0 for all courses taken under the A to F grading system;
3. Six semesters, or their equivalent, in residence as a full-time law student, as prescribed by the American Bar Association and this School's policy;
4. Evidence of sound moral character.

The Juris Doctor degree program is structured in such a way that the entire first year and certain of the second and third year courses are required. The second and third years of legal study at Dayton provide considerable latitude in selection of elective courses. The structure of the program is designed to insure that the student has confronted all subject areas which are essential to the effective practice of Law. Simultaneously, flexibility is provided for the selection of courses in particular areas of interest to each student.

**NOTE:** *The information which follows, concerning the University of Dayton School of Law, is not as exhaustive as that which will be found in a separate Bulletin, published annually by the School. Moreover, certain topics, treated here, are not treated in the same depth as in that publication, and may be subject to periodic changes. Consequently, persons interested in the study of Law should obtain a copy of the School of Law's Bulletin, in order to have the most recent and accurate information concerning its program. The information which follows was accurate for the most recent academic year, but is "representative" of the Law program in general.*





Frederick B. Davis  
Dean, *School of Law*

## Joint Degree Programs

### • THE JURIS DOCTOR/MASTER OF BUSINESS ADMINISTRATION

The Juris Doctor/Master of Business Administration Joint Degree Program is an integrated program of study which results in the student receiving both degrees at graduation. This joint degree program was created in response to a growing need for professionals trained in both fields. While specific program structure is set for each student following individual consultation, its basic design is applicable to all students. The first year of the program is pursued in the School of Law. It entails the same course of study prescribed for all first year law students. Course work in the second and third years is distributed between Law and Business courses, and sequenced in such a way as to achieve integrated progression in the two fields. The fourth year of study consists chiefly of Law courses required to complete the J.D. degree.

The designation of selected courses in both Law and Business programs as common electives results in the completion of the joint degree program in one term less than would be required if each degree were pursued independently.

The total number of hours required for the M.B.A. degree will depend upon each student's need for prerequisite courses. The student who obtained an undergraduate degree in a field other than Business Administration will normally require additional hours. Upon completion of the full program, both degrees are conferred.

Students applying for admission into this, and other joint degree programs, must meet the admission requirements of both departments of the University. Application for admission should be submitted to each school separately, along with other materials, as required.

Graduation from a joint degree program may be accelerated by attending summer terms. Both schools offer summer courses. The residency requirements of both schools' programs must be met however. An applicant interested in this program should indicate this fact in the application form, and should contact the dean of each school, once admitted, in order to plan the joint program.

### • **THE JURIS DOCTOR/MASTER OF SCIENCE IN EDUCATION ADMINISTRATION**

The School of Law in cooperation with the School of Education offers a joint degree program leading to both the Juris Doctor and the Master of Science in Educational Administration. The design of each such program is tailored to meet each student registrant's needs, and provides sufficient flexibility to accommodate individual objectives. The format and requirements of this joint degree program are roughly similar to those described above for the J.D./M.B.A. program. Applicants interested in this joint program should consult both the School of Law and the School of Education.

### • **THE JURIS DOCTOR/MASTER OF ARTS**

A joint degree program leading to the degrees of Juris Doctor and Master of Arts in Philosophy is offered in conjunction with the College of Arts and Sciences. As with other joint degree programs, students interested in this combined degree program must make a separate application for admission to each school. The design of this joint program is tailored to the student's needs, consistent with the requirements of both degree programs. For more information, the interested applicant should contact the School of Law and the College separately.

### **Courses Completed In Other Graduate Departments For Credit Towards Juris Doctor Degree Requirements**

The School of Law allows its students to apply a maximum of six credit hours of coursework, taken in other of the University's graduate departments, toward the fulfillment of the requirements for the Juris Doctor degree. Pursuant to such allowance, the courses selected must be approved by the Dean of the School of Law, in writing and in advance. The School of Law encourages such interdisciplinary study in areas related to the student's long-range career objectives.

Credit hours under this provision are recorded on the law student's transcript as K, and do not enter into the students grade-point average.

**LAW SCHOOL 1985-86 ACADEMIC CALENDAR****FALL 1985 SEMESTER**

Aug. 19-20	Monday-Tuesday	First year student orientation
Aug. 20	Tuesday	Last day to complete registration
Aug. 21	Wednesday	Classes begin
Aug. 31	Saturday	Classes meet as scheduled
Sept. 2	Monday	Labor Day - No classes
Oct. 14	Monday	Columbus Day - No classes
Oct. 15	Tuesday	Monday class schedule followed
Oct. 30	Wednesday	Friday class schedule followed
Nov. 1	Friday	All Saints Day - No classes
Nov. 27-30	Wednesday-Saturday	Last day to complete registration
Dec. 4	Wednesday	Last Day of classes
Dec. 5-8	Thursday-Sunday	Reading period
Dec. 9-21	Monday-Saturday	Examination period

**SPRING 1986 SEMESTER**

Jan. 3	Friday	Last day to complete registration
Jan. 6	Monday	Classes resume
Jan. 20	Monday	Martin Luther King Day - No classes
Feb. 16-23	Sunday-Sunday	President's Day Break - No classes
Mar. 26	Wednesday	Friday class schedule followed
Mar. 27-31	Thursday-Monday	Easter Break - No classes
April 1	Tuesday	Monday class schedule followed
April 24	Thursday	Last Day of classes
April 25-28	Friday-Monday	Reading period
April 29-May 12	Tuesday-Monday	Examination period
May 18	Sunday	LAW SCHOOL COMMENCEMENT

**SUMMER 1986 SEMESTER**

May 30	Friday	Last day to complete registration
June 2	Monday	Classes begin
July 4-7	Friday-Monday	Independence Day Break - No classes
July 8	Tuesday	Friday class schedule followed
July 22	Tuesday	Last Day of classes
July 23-24	Wednesday-Thursday	Reading period
July 25-29	Friday-Tuesday	Examination period

## COURSES OF STUDY

### SCHEDULE OF COURSES/THREE-YEAR PROGRAM

#### First Year (All Courses Required)

<i>First Term</i>	<i>Credits</i>	<i>Second Term</i>	<i>Credits</i>
Civil Procedure LAW 630	3	Civil Procedure LAW 631	2
Contracts LAW 610	3	Contracts LAW 611	2
Torts LAW 625	3	Constitutional Law LAW 635	3
Legal Research & Writing LAW 619	2	Torts LAW 626	2
Criminal Law LAW 603	3	Moot Court LAW 633	2
		Property LAW 22	4
	<hr/> 14		<hr/> 15

#### Second Year

<i>First Term</i>	<i>Credits</i>	<i>Second Term</i>	<i>Credits</i>
Constitutional Law LAW 636 (Required)	2	(No Required Courses)	—
Electives totaling	10-14	Electives Totaling	12-16
	<hr/> 12-16		<hr/> 12-16

#### Third Year

<i>First Term</i>	<i>Credits</i>	<i>Second Term</i>	<i>Credits</i>
Professional Responsibility LAW 800 (Required)	2	(No required courses)	
Electives totaling	10-14	Electives totaling	12-16
	<hr/> 12-16		<hr/> 12-16

Total semester hours of credit required for graduation: 87

Full time students must register for and complete at least 12 credit hours in the Fall and Spring Terms of the second and third years.

A full time student may register for as many as 17 credit hours; however a course load of not more than 16 hours is generally recommended.

Further information on course selection and programming is included in each semester's registration materials.

**NOTE:** the school of Law reserves the right to change course requirements and schedules. In the event of a change, students will be notified as soon as feasible by the most appropriate means.

**COURSE DESCRIPTIONS, CODES, AND REQUIRED COURSES**

*All courses listed are not necessarily offered every year.*

**LAW 600. SQP AGENCY — PARTNERSHIP:** An examination of the master-servant relationship, vicarious liability, independent contractor and the scope of employment. Related topics include: authority, ratification, undisclosed principal and fiduciary duties. Examination of partnership principles is also covered. This course is on a credit/no credit basis. *2 sem. hrs.*

**LAW 601. SQP FAMILY LAW:** This course examines the law's efforts to regulate the formation, operation, and dissolution of the family. To that end, students study the laws governing marriage and its validity, legal problems which may arise during marriage, and issues surrounding the termination of marriage, such as alimony, property division, and child custody. This course is on a credit/no credit basis. *3 sem. hrs.*

**LAW 602. SQP LEGAL METHODS:** An overview of legal methods, the legal system. Precedent in the common law, the place of statutory law and the agencies of legal process: the courts, administrative bodies, arbitration and legislatures. An introduction to some basic jurisprudential concepts involved in making law. *2 sem. hrs.*

**LAW 603. CRIMINAL LAW:** An analysis of the general principles of criminal law with the purpose of developing insight and understanding concerning the potentialities and limitations of law as an instrument of social control. This general goal will be accomplished by focusing on such principles as *actus reus*, *mens rea*, attempt, causation, complicity, insanity, and diminished capacity. *3 sem. hrs.*

**LAW 607. INDEPENDENT STUDY:** Each project undertaken must be submitted and approved, in writing, by the faculty member involved and by the Associate Dean. Prerequisites: Second or third-year law students; cumulative grade-point average of 2.3 or higher. *1, 2 sem. hrs.*

**LAW 609. ACCOUNTING FOR LAWYERS:** Provides an understanding of accounting principles relevant to attorneys and their practice. No previous accounting background is required. *3 sem. hrs.*

**LAW 610, 611. CONTRACTS I, II:** A study of doctrines used to determine which obligations society will enforce. Areas of concentration include: offer and acceptance, capacity to contract, Statute of Frauds, consideration, assignment, performance, remedies, and other related topics. Impact of the Uniform Commercial Code is analyzed. (2 term course) *5 sem. hrs.*

**LAW 619. LEGAL RESEARCH & WRITING:** An introduction to the legal resources designed to aid in legal research and writing; The student is exposed to the fundamentals of the legal memorandum. *2 sem. hrs.*

**LAW 622. PROPERTY:** The basic course in real and personal property law for first-year students concerning possession, gifts, estates in land, concurrent ownership and future interests, as well as conveyancing, recording, covenants, and easements. More advanced courses in land use, landlord-tenant and real estate financing are offered in the upper-class years. *4 sem. hrs.*

LAW 625, 626. TORTS I, II: Examination of the area of personal wrongs, including: intended or unintended interference with the person or property of another and respective defenses thereto. The concepts focused on are negligence, contributory negligence, misrepresentation, defamation, liability without fault, and the right to privacy. (2 term course)  
5 sem. hrs.

LAW 630, 631. CIVIL PROCEDURE I, II: An examination of the jurisdiction of courts, venue, parties, joinder of parties and claims, pleading, pre-trial devices, trial by jury, and appeal. Emphasis is on the Federal Rules of Civil Procedure. (2 term course)  
5 sem. hrs.

LAW 633. MOOT COURT: Implementation of the skills gained in Legal Research and Writing. Preparation of an appeal brief and oral argument. Emphasis is placed on the art of appellate advocacy.  
2 sem. hrs.

LAW 635. CONSTITUTIONAL LAW I: An analysis of substantive and procedural constitutional law and the judicial function in constitutional cases. Concepts treated include the division and separation of power, and the organization of the Federal Government.  
3 sem. hrs.

LAW 636. CONSTITUTIONAL LAW II: Primary emphasis is upon the amendments to the United States Constitution, the Bill of Rights, and the protection of individual rights and liberties.  
4 sem. hrs.

LAW 640. AGENCY—PARTNERSHIP: An examination of the master-servant relationship, vicarious liability, independent contractor, and the scope of employment. Related topics include: authority, ratification, undisclosed principle, and judiciary duties. Examination of partnership principles is also covered.  
2 sem. hrs.

LAW 650. FAMILY LAW: Consideration of the laws dealing with the family relationship. Concepts covered include marriage, divorce and alimony, the parent-child relationship, and other family legal issues and problems.  
3 sem. hrs.

LAW 655. EVIDENCE: Rules and principles governing selection, admission, and exclusion of various forms of evidence. Major areas focused upon include: direct and cross examination, competency and privileges of witnesses, judicial notice, burden of proof, presumptions, province of court and jury, confessions, the hearsay rule and its exceptions, and the best evidence rule.  
4 sem. hrs.

LAW 660. LABOR LAW: Consideration of recent legislation concerning labor relations. Employer-employee bargaining is considered. Fair Labor Standards Act and the problems of union organization are also covered.  
3 sem. hrs.

LAW 665. CORPORATIONS: Basic course in the law concerning the modern business corporation, including: formation, financing and state and federal regulation of the issuance of securities. Also examined are the powers, duties, and liabilities of directors and officers; shareholders' rights, as well as dissolution and reorganization.  
4 sem. hrs.

LAW 670. UNIFORM COMMERCIAL CODE I — SALES: Study of traditional and contemporary problems involved in the sale and distribution of goods, Article 2 of the Uniform Commercial Code, and cases arising thereunder, are the primary sources of material.  
3 sem. hrs.

**LAW 671. UNIFORM COMMERCIAL CODE II — SECURED TRANSACTIONS:** Analysis of problems involved in the creation, perfection, and enforcement of security interests, and the role of such interests in commercial transactions. The differences between secured, unsecured, and lien creditors are also examined. Article 9 of the Uniform Commercial Code is covered in depth. *3 sem. hrs.*

**LAW 672. UNIFORM COMMERCIAL CODE III — COMMERCIAL PAPER:** Analyzes problems involved in the creation and transfer of negotiable instruments, as well as the role played by these instruments in commercial and consumer transactions. Articles 3 and 4 of the Uniform Commercial Code, and cases arising thereunder, are primary source of materials. *2 sem. hrs.*

**LAW 675. LAND USE PLANNING:** Study of public and private regulatory devices affecting land use and development: subdivision controls, zoning, official maps, planned unit development, open space, and eminent domain. *3 sem. hrs.*

**LAW 680. CRIMINAL PROCEDURE — POLICE PRACTICES:** This course examines the legal and constitutional limitations on the ability of the police to investigate crimes. *3 sem. hrs.*

**LAW 685. ANTITRUST LAW:** A study of the federal antitrust laws, including the Sherman, Clayton, and Robinson Patman Acts, and their amendments. *3 sem. hrs.*

**LAW 695. CONSUMER PROTECTION:** A study of consumer credit and sales practices, focusing on truth-in-lending, fair credit reporting, and related federal and state regulations. Deceptive and unfair practices are analyzed. *3 sem. hrs.*

**LAW 700. ADMINISTRATIVE LAW:** An analysis of the processes by which administrative agencies of government seek to carry out the regulatory and social welfare tasks delegated to them by legislatures. The course examines this source and scope of administrative agency authority, the formal and informal powers and procedures used in the implementation of that authority, and the statutory and constitutional controls on the exercise of agency authority. *3 sem. hrs.*

**LAW 701. ADVANCED CONSTITUTIONAL LAW SEMINAR:** The seminar will explore: the definition and nature of law; the nature and dynamics of the judicial decision; the role, nature, and scope of the Constitution as a source of law, and concepts of political and moral philosophy as they relate to the role of the federal judiciary in the formulation and discovery of constitutional law. *3 sem. hrs.*

**LAW 708. LEGAL DRAFTING:** A course on the writing, composition content of motions, pleading (complaints and answers), discovery techniques, etc. *2 sem. hrs.*

**LAW 710. ESTATE AND GIFT TAXATION:** Consideration of the Federal Estate and Gift Tax Law as it is applied to donative transfers of property during life and at death. Attention is given to Federal Income Tax Law as applied to trusts and estates, and to beneficiaries thereof. Prerequisite: Individual Income Taxation. *3 sem. hrs.*

**LAW 712. STATE AND LOCAL GOVERNMENT:** The types and organization of local governmental units are analyzed. Intergovernmental relations, personnel, law-making, community planning, local taxation and finance are some of the areas covered. Also explored are local governmental contracts and the legal liability imposed. *3 sem. hrs.*

**LAW 715. CRIMINOLOGY AND PENOLOGY:** The course will explore selected problems in our system of criminal justice. The two broad areas of focus are the interrelated disciplines of criminology and penology. *2 sem. hrs.*

**LAW 718. MOCK TRIAL COMPETITION:** Selected students represent the Law School in intercollegiate and interschool mock trial competitions. *2 sem. hrs.*

**LAW 719. MOOT COURT INTERSCHOOL COMPETITION:** Second and third-year students represent the Law School in an approved interschool moot court competition. The course is designed to provide students with an opportunity to develop both written and oral appellate advocacy skills. *2 sem. hrs.*

**LAW 720. MOOT COURT NATIONAL COMPETITION:** Third-year students represent the Law School in the National Moot Court Competition. The course is designed to provide students with an opportunity to develop both written and oral appellate advocacy skills. *3 sem. hrs.*

**LAW 722. JURISPRUDENCE:** Consideration of basic jurisprudential concepts; nature of the law, the development of legal institutions, the judicial process, as well as legislative, executive, and administrative decision-making. Related subjects include: the impact of politics, economics, and scientific advancement on legal systems, and trends in jurisprudential thought. *2 sem. hrs.*

**LAW 723. INTERVIEWING, COUNSELING, AND NEGOTIATION:** This course studies the theory and technique involved in performing the lawyering tasks of interviewing, counseling, and negotiations. The course is designed to help students understand these skills as deliberate processes and to perform each at acceptable levels of competency. *2 sem. hrs.*

**LAW 724. CIVIL RIGHTS & CIVIL LIBERTIES SEMINAR:** Concentrates on problems associated with the protection of individual rights and liberties at both the state and federal levels. Emphasizes recent trends and developments in the law which bear upon the definition of and protection of individual rights in the United States. Prerequisite: Constitutional Law (two terms). *2 sem. hrs.*

**LAW 725. ENVIRONMENTAL LAW:** Explores governmental control and management of the environment: solid waste management, water and air pollution legislation and control, control of the electric power industry, and analysis of common law remedies. Also focuses on the urban environment, and related transportation problems. *3 sem. hrs.*

**LAW 726. CLIENT COUNSELING COMPETITION:** Selected students represent the Law School in interschool Client Counseling Competitions. Grading is on a credit/no credit basis. *2 sem. hrs.*

**LAW 727, 728. LAW REVIEW:** One credit hour per semester in the second year for Law Review research, writing and other staff work; successful completion of both semesters is a prerequisite to credit for either semester. *2 sem. hrs.*

**LAW 730. MOOT COURT INTERNATIONAL LAW COMPETITION:** Second and third year students selected by the Law School's Chapter of the Society of International Law represent the Law School at the regional level of the Phillip C. Jessup International Law Moot Court Competition. *2 sem. hrs.*



**LAW 731. EDUCATION LAW:** Examines the involvement of state and federal courts in various areas of school and university administration: student and faculty affairs, due process, codes and regulations, tenure, misconduct, civil rights, discrimination, desegregation, the "establishment" and "free exercise" clauses, equal education opportunity, fiscal neutrality, and equal protection. *3 sem. hrs.*

**LAW 732. WOMEN AND THE LAW:** An examination of the treatment of women in all areas of the law. Emphasis is given to constitutional employment and family problems. *2 sem. hrs.*

**LAW 734. GOVERNMENT CONTRACTS:** Survey of the law concerning government procurement: the power and limitations of the Federal Government in making contracts and the administrative and legislative policies governing them. Also examined are the forms of contracts, and clauses and procedures frequently used. *2 sem. hrs.*

**LAW 735. CLINIC — LAW CLINIC INTERN:** This course studies lawyer decision-making by placing students in the role of lawyer in real cases and by analyzing decision made in that role. The course consists of two parts - fieldwork and class sessions. Prerequisites: Evidence and Intern's License. *5 sem. hrs.*

**LAW 741, 742. MOOT COURT TEACHING ASSISTANT:** Teaching Assistants work with the instructors, as needed, to research the problems which are the subject of memoranda written by first-year students in their course in Legal Research and Writing. *2 sem. hrs. each term*

**LAW 744. EMPLOYMENT DISCRIMINATION LAW:** Examines recent state and federal legislation dealing with discrimination in employment, on the basis of sex, race, religion, physical limitation, national origin, or age. This course may also be offered as a seminar. *3 sem. hrs.*

**LAW 745. CLINIC — JUDICIAL CLERKSHIP EXTERN:** This course is designed to allow students to function as active participants and observers in the judicial process and simultaneously analyze and reflect on the function, purpose and actual operation of the judiciary and the judicial system. *3 sem. hrs.*

**LAW 746. CLINIC — PRACTICUM:** Supervised, practical application of previously, or concurrently, studied material. Supervision is the responsibility of the consenting faculty member, with whom the student collaborates, but the practical exercise which the student undertakes must not be in the nature of pure research or scholarship, or be a clinical enterprise within the capacity of the School of Law clinical program. *1-3 sem. hrs.*

**LAW 750. REMEDIES:** Analyzes legal and equitable remedies in a variety of substantive settings, including: damages, specific performance, injunctions, restitution and rescission. The concept of unjust enrichment is examined from the perspective of both substance and remedy. *3 sem. hrs.*

**LAW 751. LAW OF BANKING:** Concentrates on the instrumentalities of finance and the banking system. Basic problems of regulating the industry's impact on economic systems is examined. *3 sem. hrs.*

**LAW 754. COMMERCIAL FINANCIAL TRANSACTIONS:** Advanced course analyzing select problems in the financing of commercial and industrial enterprises. Deals in greater depth with the concepts of security interests introduced in the Uniform Commercial Code, Article 9. Prerequisites: Uniform Commercial Code - I, (Secured Transactions).  
3 sem. hrs.

**LAW 755. CREDITOR'S RIGHTS:** A survey of the rights and duties of debtors and creditors under common law and statutes, including: judgements, executions, attachment and garnishment, fraudulent conveyances, receiverships, assignments for the benefit of creditors, and the Bankruptcy Act, Chapters VII, X, XI, and XIII (Wage Earner Plans).  
3 sem. hrs.

**LAW 756. LANDLORD/TENANT LAW:** The relationship between the tenant and landlord is examined in detail. Emphasis is on residential leases with some coverage of commercial leasing. Also includes an overview of zoning and eminent domain. Covers those topics not developed in the property course, and is not intended to be a substitute for other upper-level electives.  
2 sem. hrs.

**LAW 757. INDIVIDUAL INCOME TAXATION:** The basic course in federal income taxation of individuals. Examples of concepts treated include: gross income, deductions, exemptions, capital gains and losses, and the classification of taxable income.  
4 sem. hrs.

**LAW 760. CONFLICT OF LAWS:** Study of the problems involved in the conflicting laws of different jurisdictions; enforceability of foreign judgments; full faith and credit problems, and choice of law in various types of legal actions. Prerequisites: Constitutional Law I, Civil Procedures.  
3 sem. hrs.

**LAW 761. RELIGION AND THE LAW:** A study of establishment and disestablishment in history; religion in the U.S. Supreme Court's decisions; church membership and the role of the court; religion as corporation; ecclesiastical adjudication in civil cases; police powers and free exercise; religious education and law; family religion and the state; tax exemptions; unionization of church employees; conscientious objection; and religion and prisoner's rights.  
3 sem. hrs.

**LAW 762. JUDEO-CHRISTIAN ETHICS AND THE LAW:** Examines Judeo-Christian ethics and its relationship to social and nonsocial justice, cumulative and distributive justice, human rights, legal rights, concept of a person and a legal person, privacy, obligations, duties, models of society, values, justice, and morality.  
3 sem. hrs.

**LAW 764. ADMIRALTY:** Historical development of admiralty and maritime jurisdiction, procedure and the problems of federalism. Principles of substantive law governing carriage of goods by sea, general average, maritime industrial accidents, collision, salvage, maritime liens, and limitation of liability.  
3 sem. hrs.

**LAW 769. APPELLATE PRACTICE AND PROCEDURE:** Course includes the role and function of appellate courts; appealability; preserving issues for appeal; the rules of appellate procedure both Federal and Ohio; effective brief writing and oral argument; The major emphasis will be on rules of appellate procedure and how to prosecute an appeal under them.  
2 sem. hrs.

LAW 771. COMPARATIVE LAW: Introduction to the structure and methodology of legal systems other than the common law system. Emphasis on contemporary European, Soviet, and Eastern systems. Comparison with common law systems, especially American. *3 sem. hrs.*

LAW 775. LEGISLATION AND LEGISLATIVE DRAFTING: Explores the role of the lawyer in legislative process; legislative analysis, legislative drafting, and the formation of legislative policy. Each student undertakes the study of a contemporary social problem and drafts proposed legislation to solve it. *3 sem. hrs.*

LAW 780. FEDERAL JURISDICTION: Jurisdiction of Federal Courts under the Constitution and United States Code, including: original, removal, and appellate jurisdiction. Prerequisite: Constitutional Law (two terms). *3 sem. hrs.*

LAW 781. LAW AND MENTALLY DISABLED: Problem-oriented analysis of the interaction between law and science. Emphasis on civil commitment and the rights of institutionalized individuals; rights to community services (including education, residential employment) and guardianship. *2 sem. hrs.*

LAW 784. HISTORY OF THE COMMON LAW: Examines the nature, origin and development of the common law. The origin and development of Anglo-American law and its comparison with contemporary English and American Law. *3 sem. hrs.*

LAW 785. INSURANCE LAW: Elements of the insurance contract, nature and form, insurable interests, insurance agents and brokers, consideration, representations and warranties, rights and obligations of the parties, waiver and estoppel, subrogation and remedies. Special emphasis is placed on life, fire, and casualty insurance. *3 sem. hrs.*

LAW 786. PRODUCT LIABILITY SEMINAR: A study of the law of product liability, with particular attention to the legal theories available against a manufacturer or vendor, the responses to be raised in defense of the action, some proposals for legislative reforms, and traditional sources within corporations from which producer safety problems arise. *2 sem. hrs.*

LAW 788. JUVENILES AND THE LAW: This course considers the special substantive and procedural law applicable to children. Course credit is based on the preparation of a written research project on a topic in juvenile law. *2 sem. hrs.*

LAW 790. INTELLECTUAL PROPERTY: Introduction to patents, trademarks, copyrights, and related subjects; examines the definition of and basic concepts involved in these various forms of intellectual property; their relationship to one another, to other areas of the law, and their utilization by the business community. *3 sem. hrs.*

LAW 791. POVERTY LAW SEMINAR: Consideration of the law, legal institutions, and policy issues particularly relevant to selected problems of the poor. *2 sem. hrs.*

LAW 795. INTERNATIONAL LAW: An introduction to international law as applied between independent nations and in American courts. Selected problems regarding the sources, development, authority, and application of international law; making, interpretation, enforcement; and termination of treaties. Examination of the United Nations and other international organizations is also covered. *3 sem. hrs.*

**LAW 796. LAW AND MEDICINE:** This introductory course is designed to acquaint the student with the important issues of law and medicine in today's society. Students will examine and discuss such topics as medical licensure; medical malpractice, informed consent; humane experimentation; child abuse; right to receive treatment; right to refuse treatment; and mental health treatment and commitment laws. *2 sem. hrs.*

**LAW 800. PROFESSIONAL RESPONSIBILITY:** An examination of the duties and privileges of the legal profession, as well as an attorney's responsibilities to his client, the community, and the profession. Prerequisite: third-year law students only. Applies to students who did not take Professional Responsibility in their first year. *3 sem. hrs.*

**LAW 804. CRIMINAL PROCEDURE — THE TRIAL PROCESS:** The class will explore the legal protections afforded to defendants and the options available to prosecutors during the trial phase of a criminal case. *2 sem. hrs.*

**LAW 805. BUSINESS PLANNING:** Integration and application of corporate law; tax law, securities law, and non-legal business concepts in the organization, operation, and reorganization of various types of business entities. Includes an introduction to legal concepts in real estate development. Prerequisites: Corporation; Recommended: Corporate Taxation or Partnership Taxation. *3 sem. hrs.*

**LAW 808. CORPORATIONS, SOCIETY AND THE LAWYER:** An analysis of the evolving concepts of the modern corporation in a changing environment and their implications for the lawyer in corporate practice. Issues in corporate governance, business regulation, and professional responsibility are examined and related to practice aspects of the business lawyer. *2 sem. hrs.*

**LAW 810. CORPORATE TAXATION:** Consideration of the provisions of the Federal Income Tax Code as they are applied to incorporated businesses. Prerequisites: Corporations, Individual Income Taxation. *3 sem. hrs.*

**LAW 812. TAXATION OF PARTNERSHIPS AND SUBCHAPTER 'S' CORPORATIONS:** Federal income tax treatment of partnerships, and federal income tax treatment which is peculiar to corporations which elect under Subchapter 'S' to be taxed like partnerships. *2 sem. hrs.*

**LAW 815. ESTATE PLANNING:** Consideration of and planning for the tax and non-tax aspects of the donative disposition of wealth during life and at death. Prerequisites: Wills and Trusts, Estate and Gift Taxation. *3 sem. hrs.*

**LAW 820. SECURITIES REGULATION:** A survey of federal and state regulation of the distribution and trading of securities. Focuses upon the Securities Act of 1933, the Securities and Exchange Act of 1934, as well as selected state statutes. Analysis of recent developments and their effects upon various participants and transactions involved in security trading. Prerequisite: Corporations. *3 sem. hrs.*

**LAW 825. TRIAL PRACTICE — CIVIL:** Each aspect of a civil trial will be examined. Litigated techniques in trial situations will be developed through actual student participation in simulated civil trials. Prerequisites: Civil Procedure, Evidence. *3 sem. hrs.*

**LAW 830. TRIAL PRACTICE — CRIMINAL:** Examination and development of litigative techniques useful in criminal trials through participation in simulated trial situations. Each aspect of the criminal trial will be examined. Prerequisites: Criminal Procedure, Evidence. *3 sem. hrs.*

**LAW 835. WILLS AND TRUSTS:** Consideration of testate and intestate succession; powers of appointment; private and charitable trusts, their creation, duration, and termination; the duties of trustees in the administration of trusts. Also considered are resulting and constructive trusts. *4 sem. hrs.*

**LAW 845. INTERNATIONAL BUSINESS TRANSACTIONS:** Examines transnational legal problems involved in doing business abroad. The international economic and financial environment is explored. Also considered: jurisdictional and dispute-settlement issues, trade, international economic organizations, foreign distribution and licensing, foreign investment, expropriation and nationalization, and taxation. *3 sem. hrs.*

**LAW 863. INTERNATIONAL PROTECTION OF HUMAN RIGHTS:** A study of the expanding processes of international protection of human rights, including the rights of minorities and of aliens, in both national and supranational organs of government. Instances of humanitarian intervention and intercession and comparisons between international and United States Constitutional protections of human rights will also be discussed. *2 sem. hrs.*

**LAW 865. COMPLEX LITIGATION SEMINAR:** Emphasizes litigation of the multi-million dollar type (the so-called "big case"): organization of voluminous materials; pleadings; measurement of damages; settlement; use of discovery; use of pleading and briefs; trial approach and techniques. Prerequisites: Civil Procedure I & II, Corporations, Evidence. Suggested Preparation: Administrative Law, Antitrust Law, Individual Income Taxation, Labor Law, Securities Regulation. *3 sem. hrs.*

**LAW 867, 868. LAW REVIEW:** One credit hour per semester in the third year for completion of a publishable comment, casenote, or other extensive legal writing effort. (Fall-LAW 867; Spring-LAW 868). *2 sem. hrs.*

**LAW 869, 870. LAW REVIEW:** One credit hour per semester in the third year for Associate Editor. (Fall-LAW 869; Spring-LAW 870). *2 sem. hrs.*

**LAW 871, 872. LAW REVIEW:** Two credit hours per semester in the third year for members of the Editorial Board. (Fall-LAW 871; Spring-LAW 872). *4 sem. hrs.*

**LAW 875. REGULATED INDUSTRIES:** A study of the legal problems confronting the gas, electric, telephone, rail, trucking, and airline industries. Examines the regulatory functions involved in the ascertainment of revenue needs, establishment of rates and service standards, environmental protection, conservation of resources, entry of new competition and the application of antitrust standards. *3 sem. hrs.*

**LAW 880. MORTGAGES AND REAL ESTATE FINANCING:** Deeds, land sales contracts, land marketing contracts, mortgages and deeds of trust; foreclosure, receivers, rents and profits. Depression legislation, anti-deficiency, foreclosure; the debt or obligations, future advance clauses and dragnet clauses; priority, recording priority as to fixtures, subordination and release clauses; acceleration clauses; due-on-default, due-on-sale, due-on-encumbrance; release and reconveyance. *3 sem. hrs.*

**LAW 890. LAW-RELATED EDUCATION:** Involves law students teaching Law-related topics in area junior and senior high schools under the supervision of a Law School faculty member. Includes weekly class presentation and preparation, seminars, critiques and evaluation sessions, plus a topical memorandum. *1-3 sem. hrs.*



Patricia H. Roll  
*School of Law.*



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- ALEXANDER, Roberta S. (1969), *History*, Associate Professor — A.B., University of California at Los Angeles, 1964; M.A., University of Chicago, 1966; Ph.D., University of Chicago, 1974.
- ARONS, Peter L. (1965), *English*, Associate Professor — A.B., New York University, 1957; M.A., Yale University, 1958; Ph.D., Yale University, 1964.
- AUGUST, Eugene R. (1966), *English*, Professor — B.A., Rutgers University, 1958; M.A., University of Connecticut, 1960; Ph.D., University of Pittsburgh, 1965.
- BAJPAI, Praphulla K. (1964), *Biology*, Professor — B.V. Sc. & A.H., Agra University, 1958; M.V. Sc., Agra University, 1960; M. Sc., Ohio State University, 1963; Ph.D., Ohio State University, 1965.
- BEAUREGARD, Erving E. (1947), *History*, Professor — A.B., University of Chicago, 1942; M.A., University of Massachusetts, 1944; Ph.D., Union Graduate School, 1976.
- BEDARD, Bernard J. (1962), *English*, Professor — A.B., University of Notre Dame, 1949; M.A., University of Michigan, 1950; Ph.D., University of Michigan, 1959.
- BERG, Berthold (1974), *Psychology*, Associate Professor — B.A., University of Michigan; M.S., Purdue University, 1971; Ph.D., Purdue University, 1974.
- BERNEY, Rex L. (1978), *Physics*, Associate Professor — B.S., University of Missouri at Columbia, 1971; M.S., University of Missouri at Columbia, 1973; Ph.D., University of Missouri at Columbia, 1978.
- BIERS, David W. (1976), *Psychology*, Associate Professor — B.A., Lafayette College, 1966; M.S., Northwestern University, 1968; Ph.D., Northwestern University, 1970.
- BLATT, Stephen J. (1971), *Communication*, Associate Professor — B.A., Morehead State University, 1964; M.A., Ohio University, 1967; Ph.D., Ohio University, 1969.
- BOULET, Richard A. (1968), *Religious Studies*, Professor — A.B., Providence College, 1954; S.T.B., S.T.L., S.T.Lr., Immaculate Conception College, 1956-1958; S.T.D., University of Montreal, 1965.
- BRANICK, Vincent P. (1979), *Arts and Sciences*, Associate Professor — B.A., Chaminade College of Honolulu, 1963; M.A., Catholic University of America, 1964; S.T.B., University of Fribourg, 1966; S.T.L., University of Fribourg, 1969; D.Phil., University of Fribourg, 1971; S.S.L., Pontifical Biblical Institute, Rome, 1972; Drs. Gregorian University, Rome, 1972; SS.D., Pontifical Biblical Institute, Rome, 1975.
- BURKY, Albert J. (1973), *Biology*, Associate Professor — B.A., Hartwick College, 1964; Ph.D., Syracuse University, 1969.
- BUTTER, Eliot J. (1971), *Psychology*, Professor — B.A., Brooklyn College, 1965; M.A., Brooklyn College, 1969; Ph.D., University of Massachusetts, 1971.
- CHANTELL, Charles J. (1965), *Biology*, Associate Professor — B.S., University of Illinois, 1961; M.S., University of Notre Dame, 1963; Ph.D., University of Notre Dame, 1965.
- COCHRAN, Bud T. (1958), *English*, Professor — B.A., College of Steubenville, 1955; M.A., Ohio State University, 1957; Ph.D., Ohio State University, 1967.

- CRAVER, Bruce A. (1978), *Physics*, Assistant Professor — B.S., Purdue University, 1969; M.S., Purdue University, 1971; Ph.D., Purdue University, 1976.
- DAPOLITO, Frank J. (1970), *Psychology*, Professor — B.A., Bowling Green State University, 1959; Ph.D., Indiana University, 1966.
- EID, Leroy V. (1961), *History*, Professor — B.S. in Ed., University of Dayton, 1953; M.A., St. John's University, 1958; M.A., University of Toronto, 1968; Ph.D., St. John's University, 1961.
- FOGEL, Norman J. (1971), *Political Science*, Associate Professor — B.S., Millersville State College, 1960; M.A., University of Delaware, 1968; Ph.D., Ohio State University, 1975.
- FOX, B. Lawrence (1966), *Chemistry*, Professor — B.S., John Carroll University, 1962; Ph.D., Ohio State University, 1966.
- FRATINI, Albert V. (1967), *Chemistry*, Professor — B.S., University of Rhode Island, 1960; Ph.D., Yale University, 1966.
- FROST, Rev. William P. (1967), *Religious Studies*, Professor — Drs. Th., Carolus Magnus University (Netherlands), 1961; M.A., Loyola University, 1966.
- GANTNER, Thomas E. (1966), *Mathematics*, Associate Professor — B.S., University of Dayton, 1962; M.S., Purdue University, 1964; Ph.D., Purdue University, 1966.
- GEIGER, Donald R., S.M. (1964), *Biology*, Professor — B.S., University of Dayton, 1955; M.S., Ohio State University, 1960; Ph.D., Ohio State University, 1963.
- GORTON, Robert B. (1969), *Mathematics*, Associate Professor — B.S., Illinois Institute of Technology, 1964; M.S., Illinois Institute of Technology, 1966; Ph.D., Illinois Institute of Technology, 1970.
- GRAHAM, Thomas P. (1964), *Physics*, Professor — B.S., Providence College, 1956; Ph.D., Iowa State University, 1967.
- HARWOOD, Phillip J. (1966), *Communication*, Associate Professor — B.S., Butler University, 1960; M.S., Butler University, 1961; Ph.D., Ohio University, 1972.
- HEFT, Rev. James L., S.M. (1978), *Religious Studies*, Assistant Professor — B.A., B.S. Ed., University of Dayton, 1966; M.A., University of Toronto, 1971; Ph.D., University of Toronto, 1977.
- HENNINGER, Francis J. (1965), *English*, Associate Professor — B.A., St. John's University, 1956; M.A., University of Notre Dame, 1958; M.A., University of Pennsylvania, 1962; Ph.D., University of Pennsylvania, 1965.
- HERBENICK, Raymond M. (1968), *Philosophy*, Professor — B.A., Duquesne University, 1964; M.A., DePaul University, 1965; M.B.A., University of Pittsburgh, 1968; Ph.D., Georgetown University, 1968.
- INSCHO, Frederick R. (1976), *Political Science*, Assistant Professor — A.B., University of Detroit, 1968; M.A., State University of New York at Buffalo, 1972; Ph.D., State University of New York at Buffalo, 1976.
- JACOBSON, Marsha B. (1972), *Psychology*, Associate Professor — B.A., State University of New York at Buffalo, 1968; Ph.D., New York University, 1972.
- JAFFEE, Oscar C. (1966), *Biology*, Professor — B.A., New York University, 1946; M.S., New York University, 1948; Ph.D., Indiana University, 1952.
- KEIL, Robert G. (1969), *Chemistry*, Professor — B.S., Villanova University, 1963; Ph.D., Temple University, 1967.
- KEPES, Joseph J. (1962), *Physics*, Professor — B.S., Case Institute of Technology, 1953; Ph.D., University of Notre Dame, 1958.

- KERNS, Gerald E. (1967), *Political Science*, Associate Professor — B.A., University of Wichita, 1961; Ph.D., Indiana University, 1969.
- KIMBLE, Charles E. (1973), *Psychology*, Associate Professor — B.A., Baylor University, 1966; M.A., Baylor University, 1969; Ph.D., University of Texas, 1972.
- KNACHEL, Howard C. (1972), *Chemistry*, Associate Professor — B.S., University of Dayton, 1963; M.S., Ohio State University, 1969; Ph.D., Ohio State University, 1971.
- KOHMESCHER, Rev. Matthew F., S.M. (1951), *Religious Studies*, Professor — A.B., University of Dayton, 1942; S.T.D., University of Fribourg, 1950; M.A., Western Reserve University, 1956.
- KUNKEL, Joseph C. (1964), *Philosophy*, Professor — A.B., Loyola University, 1958; A.M., Loyola University, 1962; Ph.D., St. Bonaventure University, 1968.
- LAPITAN, Antonio E. (1969), *Political Science*, Professor — A.B., University of the Philippines, 1954; M.A., Lehigh University, 1957; Ph.D., University of Oregon, 1968.
- LHEUREUX, Conrad E. (1970), *Religious Studies*, Professor — B.A., St. Paul's College, 1962; M.A., Catholic University of America, 1966; Ph.D., Harvard University, 1972.
- LUCIER, John J., S.M. (1945), *Chemistry*, Professor — B.S., University of Dayton, 1937; M.S., Western Reserve University, 1950; Ph.D., Western Reserve University, 1951.
- MCCLOSKEY, John W. (1965), *Mathematics*, Professor — B.S., University of Dayton, 1960; M.S., Michigan State University, 1962; Ph.D., Michigan State University, 1965.
- MCDOUGALL, Kenneth J. (1966), *Biology*, Professor — B.A., Northland College, 1957; M.S., Marquette University, 1959; Ph.D., Kansas State University, 1964.
- MARAS, Raymond J. (1959), *History*, Professor — B.A., University of California, 1946; M.A., Catholic University of America, 1948; Ph.D., University of California, 1955.
- MARRE, Kitayun E. (1966), *English*, Professor — B.A., University of Bombay, 1958; M.A., University of Bombay, 1960; Ph.D., State University of New York at Buffalo, 1966.
- MARRE, Louis A. (1965), *English*, Associate Professor — A.B., University of Notre Dame, 1961; M.A., University of Notre Dame, 1963; Ph.D., University of Notre Dame, 1972.
- MARTIN, Thomas M. (1965), *Religious Studies*, Professor — B.S., Spring Hill College, 1962; M.A., Fordham University, 1965; Ph.D., Syracuse University, 1972.
- MATHIAS, Frank F. (1963), *History*, Professor — A.B., University of Kentucky, 1950; M.A., University of Kentucky, 1961; Ph.D., University of Kentucky, 1966.
- MEANS, Michael H. (1963), *English*, Associate Professor — B.A., Wisconsin State College, 1955; M.A., Ohio State University, 1957; Ph.D., University of Florida, 1963.
- MINER, George K. (1976), *Physics*, Professor — A.B., Thomas More College, 1951; M.S., University of Notre Dame, 1960; Ph.D., University of Cincinnati, 1965.
- MONASTERIO, Xavier O. (1966), *Philosophy*, Professor — B.A., Institute Oriente, Mexico, 1944; M.A., Ysleta College, 1951; Ph.D., Universite de Paris, 1964.
- MORLAN, Donald B. (1977), *Communication*, Professor — B.S., Indiana State University, 1962; M.S. Indiana State University, 1965; Ph.D., Purdue University, 1969.

- MUSHENHEIM, Harold G., S.M. (1965), *Mathematics*, Associate Professor — B.S., University of Dayton, 1955; M.A., University of Cincinnati, 1960; Ph.D., University of Cincinnati, 1963.
- NELSON, Peter B. (1979), *Political Science*, Assistant Professor — B.S., Florida State University, 1969; B.S., Florida International University, 1973; M.S.M., Florida International University, 1975; Ph.D., University of Mississippi, 1982.
- NERSOYAN, H. James (1967), *Philosophy*, Professor — Baccalaureate, College Champagnat des Freres Maristes, 1939; S.T.B., Berkeley Divinity School, 1949; Ph.D., Columbia University, 1966.
- NOLAND, George B. (1966), *Biology*, Professor — B.S., University of Detroit, 1950; M.S., University of Detroit, 1952; Ph.D., Michigan State University, 1955.
- O'HARE, J. Michael (1966), *Physics*, Professor — B.S., Loras College, 1960; M.S., Purdue University, 1962; Ph.D., State University of New York at Buffalo, 1966.
- PALERMO, Patrick F. (1971), *History*, Associate Professor — A.B., Fordham University, 1966; M.A., State University of New York at Stony Brook, 1967; Ph.D., State University of New York at Stony Brook, 1973.
- PATROUCH, Joseph F. (1964), *English*, Professor — A.B., University of Cincinnati, 1958; M.A., University of Cincinnati, 1960; Ph.D., University of Wisconsin, 1965.
- POLZELLA, Donald J. (1972), *Psychology*, Professor — B.A., University of Rochester, 1967; M.A., Bucknell University, 1969; Ph.D., University of Michigan, 1974.
- RAMSEY, James M. (1964), *Biology*, Professor — B.S., Wilmington College, 1948; M.S., Miami University, 1951.
- RANG, Jack C. (1979), *Communication*, Professor — B.S., Northwestern University, 1948; M.A., Aquinas College, 1965; Ph.D., Northwestern University, 1972.
- RHEE, Tong-Chin (1967), *History*, Professor — B.A., Seoul National University, 1959; M.P.A., School of Public Administration, Seoul National University, 1961; M.A., Lehigh University, 1962; Ph.D., Clark University, 1967.
- RICHARDS, William M. (1970), *Philosophy*, Associate Professor — B.A., LeMoyné College, 1966; Ph.D., Georgetown University, 1970.
- ROBERTS, William P. (1980), *Religious Studies*, Professor — B.A., Fordham University, 1955; M.A., Fordham University, 1957; Ph.L., Loyola Seminary, 1956; S.T.L., Weston College School of Theology, 1963; Ph.D., Marquette University, 1968.
- ROBINSON, James D. (1982), *Communication*, Assistant Professor — B.A., University of the Pacific, 1978; M.A., West Virginia University, 1979; Ph.D., Purdue University, 1982.
- ROWE, John J. (1977), *Biology*, Associate Professor — B.S., Colorado State University, 1967; M.S., Arizona State University, 1971; Ph.D., University of Kansas Medical Center, 1975.
- RUFF, Lawrence A. (1960), *English*, Associate Professor — B.S., University of Dayton, 1958; M.A., Catholic University of America, 1959; Ph.D., Ohio State University, 1968.
- SCHNEIDER, James R. (1964), *Physics*, Professor — A.B., Villa Madonna College, 1956; M.S., University of Cincinnati, 1959; Ph.D., University of Cincinnati, 1965.
- SCHWELITZ, Faye D. (1971), *Biology*, Associate Professor — B.A., Alverno College, 1953; M.S., Purdue University, 1967; Ph.D., Purdue University, 1971.

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- SINGER, Sanford S. (1972), *Chemistry*, Professor — B.S., Brooklyn College, 1962; M.S., University of Michigan, 1964; Ph.D., University of Michigan, 1967.
- SKILL, Thomas D. (1984), *Communication*, Assistant Professor — B.A., State University of New York at Buffalo, 1978; M.A., State University of New York at Buffalo, 1980; Ph.D., State University of New York at Buffalo, 1984.
- STEINER, Wilfred J. (1946), *History*, Professor — A.B., Loras College, 1936; M.A., Harvard University, 1938; Ph.D., Ohio State University, 1957.
- STEINLAGE, Ralph C. (1966), *Mathematics*, Professor — B.S., University of Dayton, 1962; M.S., Ohio State University, 1963; Ph.D., Ohio State University, 1966.
- TIBBETTS, Paul E. Jr. (1969), *Philosophy*, Professor — A.E., Worcester Junior College, 1959; B.A., Clark University, 1964; M.A., Boston University, 1965; Ph.D., Purdue University, 1973.
- ULRICH, Lawrence P. (1964), *Philosophy*, Professor — A.B., Catholic University of America, 1961; M.A., Catholic University of America, 1962; M.Ed., Xavier University, 1964; Ph.D., University of Toronto, 1972.
- VENTULLO, Roy M. (1979), *Biology*, Associate Professor — B.S., State University of New York at Brockport, 1972; M.S., State University of New York at Brockport, 1974; Ph.D., University of Georgia, 1978.
- VESPER, Mary J. (1982), *Biology*, Assistant Professor — B.A., Thomas More College, 1973; M.S., Ohio State University, 1975; Ph.D., Ohio State University, 1978.
- VINES, Alice G. (1969), *History*, Associate Professor — B.A., B.S. in Ed., University of Cincinnati, 1960; M.A., University of Cincinnati, 1961; Ph.D., University of Cincinnati, 1975.
- WEATHERLY, Michael (1968), *Communication*, Assistant Professor — B.A., Stephen F. Austin State College, 1958; M.A., Bowling Green State University, 1961; Ph.D., Ohio State University, 1972.
- WOLFF, Florence I. (1969), *Communication*, Professor — B.S., Temple University, 1941; M.Ed., Duquesne University, 1967; Ph.D., University of Pittsburgh, 1969.
- YANEY, Perry P. (1965), *Physics*, Professor — B.S.E.E., University of Cincinnati, 1954; M.S., University of Cincinnati, 1957; Ph.D., University of Cincinnati, 1963.
- ZEMBATY, Jane S. (1975), *Philosophy*, Associate Professor — B.A., State University of New York at Buffalo, 1971; M.A., Georgetown University, 1974; Ph.D., Georgetown University, 1976.



## BUSINESS ADMINISTRATION GRADUATE FACULTY

- AMSDEN, Robert T. (1979), *Decision Sciences*, Associate Professor — B.A., University of New Hampshire, 1960; M.S., Rutgers, The State University, 1964; Ph.D., Rutgers, The State University, 1969.
- BALLOUN, Joseph L. (1981), *Management*, Associate Professor — B.S., Iowa State University, 1963; M.S., Iowa State University, 1965; Ph.D., University of California, 1971.
- BERGER, Robert M. (1964), *Management*, Assistant Professor — B.S., University of Dayton, 1960; M.A., Ohio University, 1963; J.D., Chase School of Law, 1970.
- BLODGET, Elweyn C. (1982), *Economics and Finance*, Assistant Professor — B.S., Purdue University, 1966; M.B.A., University of Utah, 1972; Ph.D., University of Utah, 1980.
- BOHLEN, George A. (1980), *Decision Sciences*, Associate Professor — B.S.M.E., Clemson University, 1958; M.S.I.E., Purdue University, 1963; M.S.B.A., George Washington University, 1968; Ph.D., Purdue University, 1973.
- BRADY, Thomas J. (1981), *Accounting*, Associate Professor — B.S., New York University, 1966; M.B.A., Adelphi University, 1968; Ph.D., Purdue University, 1976.
- BURROWS, Ron J. (1981), *Accounting*, Associate Professor — B.S., Northern Illinois University, 1965; M.S., Northern Illinois University, 1968; Ph.D., Pennsylvania State University, 1980.
- CHEN, Carl R. (1977), *Economics and Finance*, Assistant Professor — B.A., National Taiwan University, 1969; M.S., Auburn University, 1973; Ph.D., University of Georgia, 1977.
- CLARK, Willard C., Jr. (1963), *Accounting*, Associate Professor — B.S., University of Dayton, 1959; M.B.A., Miami University, 1960; C.P.A., Ohio, 1962.
- DUNNE, Edward J. (1982), *Decision Sciences*, Associate Professor — B.S., St. Louis University, 1962; M.S., Air Force Institute of Technology, 1964; Ph.D., University of Illinois, 1971.
- ELEY, Marion J. (1961), *Accounting*, Associate Professor — B.S., University of Dayton, 1959; M.B.A., Xavier University, 1964; C.P.A., Ohio, 1966.
- FIORITI, Andrew A. (1965), *Accounting*, Associate Professor — B.S., University of Scranton, 1956; M.B.A., University of Detroit, 1958; C.P.A., New Jersey, 1964.
- FRASCA, Ralph R. (1972), *Economics and Finance*, Associate Professor — B.A., C.W. Post College, 1967; M.A., Indiana University, 1971; Ph.D., Indiana University, 1975.
- GEARY, K. Michael (1976), *Accounting*, Associate Professor — B.S., Indiana University, 1969; M.B.A., Miami University, 1974; Ph.D., University of Cincinnati, 1982; C.P.A., Illinois, 1975; C.P.A., Ohio, 1976.
- GHOSH, Jayabta (1983), *Decision Sciences*, Assistant Professor — B.T., Indiana Institute of Technology, 1977; M.S., University of Arkansas, 1981; Ph.D., University of Arkansas, 1983.
- GOULD, Sam (1985), *Management*, Professor — B.S., Ohio University, 1965; M.B.A., University of Colorado, 1970; Ph.D., Michigan State University, 1975.
- GUSTAFSON, Elizabeth F. (1983), *Economics and Finance*, Associate Professor — B.A., Duke University, 1970; Ph.D., University of North Carolina, 1974.

## Faculty

- HADLEY, Lawrence H. (1977), *Economics and Finance*, Assistant Professor — B.A., Rutgers University, 1967; M.A., University of Connecticut, 1969; Ph.D., University of Connecticut, 1975.
- HOBEN, William J. (1956), *Accounting*, Professor — B.S., University of Dayton, 1950; M.B.A., Xavier University, 1960; C.P.A., Ohio, 1960.
- KING, Alan L. (1972), *Marketing*, Associate Professor — B.S., Ohio State University, 1967; M.A., Ohio State University, 1969; Ph.D., Ohio State University, 1972.
- LEWIS, William F. (1980), *Marketing*, Associate Professor — B.A., Spring Arbor College, 1967; M.B.A., Michigan State University, 1969; Ph.D., University of Cincinnati, 1976.
- McCLAIN, Richard E. (1973), *Management*, Professor — B.S., Ohio State University, 1953; M.B.A., Indiana University, 1954; Ph.D., Ohio State University, 1968.
- MERENSKI, J. Paul (1976), *Marketing*, Associate Professor — B.S., Wright State University, 1971; M.B.A., Wright State University, 1972; Ph.D., University of Cincinnati, 1982.
- MILLER, Richard L. (1968), *Management*, Assistant Professor — B.S., Ohio State University, 1947; M.B.A., Ohio State University, 1959; Ph.D., University of Cincinnati, 1981.
- OUMLIL, Abderrahman B. (1983), *Marketing*, Assistant Professor — B.S., Southwest Missouri State University, 1976; M.B.A., University of Arkansas, 1977; Ph.D., University of Arkansas, 1983.
- PEARSON, John M. (1982), *Decision Sciences*, Associate Professor — B.S., Arizona State University, 1965; M.S., Air Force Institute of Technology, 1969; Ph.D., University of California, 1975.
- RAPP, John E. (1972), *Economics and Finance*, Professor — B.A., University of Missouri, 1959; M.A., University of Missouri, 1960; Ph.D., University of Missouri, 1964.
- ROSENZWEIG, Kenneth Y. (1981), *Accounting*, Associate Professor — B.A., University of Texas, 1965; M.B.A., University of Houston, 1968; Ph.D., Michigan State University, 1977.
- SCHEIDLER, Charles H. (1953), *Management*, Professor — A.B., Washington University, 1949; Ph.D., Washington University, 1953.
- SCHENK, Joseph A. (1980), *Management*, Associate Professor — B.B.A., University of Kentucky, 1970; M.B.A., Kent State University, 1972; D.B.A., Kent State University, 1976.
- SEKELY, William S. (1976), *Marketing*, Associate Professor — B.S., Allegheny College, 1966; M.B.A., Case Western Reserve, 1970; D.B.A., Kent State University, 1975.
- STICK, Henry H. (1975), *Economics and Finance*, Associate Professor — B.S., U.S. Military Academy, 1945; M.B.A., University of Pennsylvania, 1951; Ph.D., Ohio State University, 1957.
- STOUGH, Stanley J. (1969), *Management*, Associate Professor — B.S.B.A., Findlay College, 1964; M.B.A., Ohio University, 1966; Ph.D., University of Arkansas, 1975.
- TEWARI, Harish C. (1975), *Management*, Associate Professor — B.B.A., Delhi University, 1963; M.B.A., Central Michigan University, 1969; M.A., University of Cincinnati, 1974; Ph.D., University of Cincinnati, 1977.

## Faculty

- VLAHOS, George E. (1978), *Decision Sciences*, Associate Professor — B.S., University of Illinois Urbana, 1964; M.S., Southern Illinois University, 1967; Ph.D., University of Northern Colorado, 1974.
- VORHERR, Phillip H. (1980), *Accounting*, Associate Professor — B.B.A., University of Cincinnati, 1964; M.B.A., University of Cincinnati, 1965; Ph.D., University of Cincinnati, 1975.
- WASHING, Harry A. (1975), *Management*, Associate Professor — B.S., Miami University, 1965; M.S., Xavier University, 1966; Ph.D., North Texas State University, 1977.
- WEILER, John E. (1967), *Economics and Finance*, Associate Professor — B.A., University of Cincinnati, 1960; M.A., University of Cincinnati, 1961; Ph.D., University of Cincinnati, 1973.
- WELLS, Charles E. (1984), *Decision Sciences*, Associate Professor — A.B., Harvard University, 1976; M.B.A., Miami University, 1977; Ph.D., University of Cincinnati, 1982.
- WINGER, Bernard J. (1966), *Economics and Finance*, Associate Professor — B.S., Xavier University, 1959; M.A., University of Cincinnati, 1960; C.P.A., Ohio, 1965.
- WRIGHT, Thomas V. (1979), *Economics and Finance*, Associate Professor — B.G.S., University of Nebraska, 1969; M.B.A., Washington University, 1971; Ph.D., Washington University, 1976.
- YATES, Rebecca M.J. (1980), *Marketing*, Assistant Professor — B.B.A., University of Cincinnati, 1973; M.B.A., University of Cincinnati, 1975; Ph.D., University of Cincinnati, 1980.
- YOUNG, Saul (1983), *Decision Sciences*, Associate Professor — B.A., University of Texas, 1962; M.S., University of Wisconsin, 1969; Ph.D., Stanford University, 1975.

## EDUCATION

### GRADUATE FACULTY

- ANDERSON, Gordon S. (1969), *Elementary Education*, Associate Professor — B.A., Bethany College, 1953; M.S., State University of New York, 1959; Ed.D., Case Western Reserve University, 1969.
- BRITT, John F. (1966), *Teacher Education*, Professor — B.A., St. Paul Seminary, 1950; M.A., St Louis University, 1954; Ph.D., St. Louis University, 1962.
- CARLSEN, Roger N. (1981), *Teacher Education*, Associate Professor — B.S. Ed., Northern Illinois University, 1967; M.S. Ed., Chicago State University, 1972; Ed.D., Western Michigan University, 1979.
- CHAVEZ, Simon J. (1954), *Educational Administration*, Professor — A.B., Adams State College, 1938; M.Ed., University of Colorado, 1947; D.Ed., University of Colorado, 1952.
- CRIM, Kenneth J. (1976), *Educational Services*, Associate Professor — A.B., Manchester College, 1942; M.A., Ohio State University, 1949; Ph.D., Ohio State University, 1959.
- DIETHORN, Bernard C., S.M. (1966), *Counselor Education and Human Services*, Professor — B.A., University of Dayton, 1942; M.A., Western Reserve University, 1952; Ed.D., Western Reserve University, 1966.
- DREES, Doris A. (1956), *Physical and Health Education*, Professor — B.S., University of Dayton, 1954; M.A., Ohio State University, 1959; Ph.D., University of Iowa, 1968.
- DRURY, William R. (1984), *Educational Administration*, Associate Professor — B.S., University of Dayton, 1958; M.S., University of Dayton, 1962; Ed.D., Wayne State University, 1971.
- EVANS, James H. (1981), *Counselor Education*, Associate Professor — B.A., Ohio Wesleyan University, 1961; M.A., Kent State University, 1964; Ed.D., Indiana University, 1971.
- FRERICKS, Donald J. (1978), *Educational Administration*, Associate Professor — B.S., University of Dayton, 1956; M.A., Miami University, 1958; Ph.D., Ohio State University, 1970.
- FRYE, Helen B. (1967), *Teacher Education*, Professor — B.A., Ohio Wesleyan University, 1944; M.Ed., Wittenberg University, 1962; Ph.D., Ohio State University, 1967.
- FUCHS, Gordon E. (1967), *Teacher Education*, Professor — B.S., University of Wisconsin, 1958; M.S., University of Wisconsin, 1961; Ph.D., Ohio State University, 1974.
- GAY, James E. (1968), *Teacher Education*, Professor — B.A., Ohio University, 1951; M.A., University of Wisconsin, 1956; D.Ed., University of Maryland, 1972.
- GEIGER, John O. (1970), *Teacher Education*, Associate Professor — B.A., Marquette University, 1966; Ph.D., Marquette University, 1972.
- HARAWA, Bernard A. (1977), *Educational Administration*, Assistant Professor — Dip. Ed., Stranmillis College, Belfast, Ireland, 1961; B.S.Ed., University of Dayton, 1965; M.S.Ed., University of Dayton, 1967; Ed.D., Teachers College, Columbia University, 1974.
- HOPFENGARDNER, Jerrold D. (1978), *Education*, Associate Professor — B.S., University of Dayton, 1959; M.Ed., Miami University, 1961; Ph.D., Ohio State University, 1970.

- JOSEPH, Ellis A. (1961), *Teacher Education*, Professor — A.B., University of Notre Dame, 1955; M.A., University, of Notre Dame, 1956; Ph.D., University of Notre Dame, 1962.
- LASLEY, Thomas J., II (1983), *Teacher Education*, Associate Professor — B.S., Ohio State University, 1969; M.A., Ohio State University, 1972; Ph.D., Ohio State University, 1978.
- LAUBACH, Lloyd L. (1980), *Physical and Health Education*, Associate Professor — B.S., Central State University, Edmond, Oklahoma, 1961; M.S., University of Oregon, 1962; Ph.D., Ohio State University, 1970.
- LAVANCHE, James B. (1957), *Physical and Health Education*, Professor — B.A., Emory and Henry College, 1948; M.S., West Virginia University, 1952.
- LEONARD, Mary T. (1956), *Physical and Health Education*, Associate Professor — B.A., Radcliffe College, 1948; M.S., MacMurray College, 1951; D.Ed., Boston University, 1960.
- LUTZ, Paul N. (1970), *Teacher Education*, Assistant Professor — B.S., University of Washington, 1955; B.A., University of Washington, 1955; M.Ed., University of Oregon, 1967; Ph.D., University of Oregon, 1970.
- McCORMICK, Roger D. (1981), *Counselor Education*, Associate Professor — B.S.Ed., Miami University, 1949; M.A., Ohio State University, 1957; Ph.D., Ohio State University, 1969.
- MORTON, M. Byron (1967), *Education*, Associate Professor — B.A., Wittenberg University, 1929; M.A., Ohio State University, 1935.
- MOULIN, Eugene K. (1968), *Counselor Education and Human Services*, Professor — B.A., Mount Union College, 1956; M.E., Kent State University, 1959; Ph.D., University of Toledo, 1968.
- O'NEIL, Gerald W., S.M. (1980), *Teacher Education*, Associate Professor — B.A., University of Dayton, 1956; M.A., Saint John's University, 1963; Ph.D., University of Notre Dame, 1975.
- PETTI, Sister Loretta M., O.P. (1968), *Teacher Education*, Associate Professor — B.A., Sienna Heights College, 1942; M.A., Catholic University of America, 1949; D.Ed., Western Reserve University, 1966.
- ROGUS, Joseph F. (1981), *Teacher Education*, Professor — B.S., University of Dayton, 1960; M.Ed., Miami University, 1962; Ph.D., Ohio University, 1968.
- SCHLEPPI, John R.. (1963), *Physical and Health Education*, Associate Professor — B.S., Ohio State University, 1961; M.B.A., Ohio State University, 1963; Ph.D., Ohio State University, 1972.
- SHUGARMAN, Sherrie L. (1983), *Teacher Education*, Assistant Professor — B.Ed., University of Toledo, 1975; M.Ed., University of Toledo, 1977; Ph.D., Claremont Graduate School, 1983.
- TORGE, Herman (1976), *Educational Services*, Associate Professor — B.S., Miami University, 1946; M.M., Cincinnati Conservatory of Music, 1951; M.A., Miami University, 1968; Ph.D., Miami University, 1970.
- WATRAS, Joseph (1979), *Teacher Education*, Assistant Professor — B.A., Boston University 1965; M.Ed., University of Hawaii, 1969; Ph.D., Ohio State University, 1972.
- WEAVER, Roberta B. (1978), *Teacher Education*, Associate Professor — B.Sc. in Ed., Ohio State University, 1960; M.Sc., in Ed., University of Cincinnati, 1966; Ed.D., University of Cincinnati, 1982.

## ENGINEERING GRADUATE FACULTY

- BOEHMAN, Louis L. (1967), *Mechanical Engineering*, Associate Professor — B.S.M.E., University of Dayton, 1960; M.S.T.E., Illinois Institute of Technology, 1963; Ph.D., Illinois Institute of Technology, 1967; Reg. Prof. Engr.
- BOGNER, Fred K. (1969), *Mechanical Engineering*, Associate Professor — B.S.C.E., Case Institute of Technology, 1961; M.S.E. Mech., Case Institute of Technology, 1964; Ph.D., Case Institute of Technology, 1967.
- BROCKMAN, Robert A. (1984), *Mechanical Engineering*, Associate Professor — B.S.M.E., Carnegie-Mellon University, 1973; M.M.E., University of Dayton, 1974; Ph.D., University of Dayton, 1979.
- CHARTOFF, Richard P. (1981), *Materials Engineering*, Professor — B.S. Case Western Reserve, 1961; M.S.E., Princeton, 1962; M.A., Princeton, 1965; Ph.D., Princeton, 1968.
- CRIM, Kenneth J. (1976), *Educational Services*, Associate Professor — A.B., Manchester College, 1942; M.A., Ohio State University, 1949; Ph.D., Ohio State University, 1959.
- DOYLE, George R. (1982), *Mechanical Engineering*, Associate Professor — B.S., Purdue University, 1965; M.S., Purdue University, 1967; Ph.D. University of Akron, 1973.
- EASTEP, Franklin E. (1980), *Aerospace Engineering*, Professor — B.S., Ohio State University, 1958; M.S., Air Force Institute of Technology, 1963; Ph.D., Stanford University, 1968.
- EVERS, Anthony J. (1966), *Electrical Engineering*, Associate Professor — B.E.E., University of Dayton, 1953; M.S.E.E., University of Notre Dame, 1955; Reg. Prof. Engr.
- EVESLAGE, Sylvester L. (1948), *Chemistry*, Professor — B.S., University of Notre Dame, 1944; M.S., University of Notre Dame, 1945; Ph.D., University of Notre Dame, 1953.
- FITZ, Raymond L., S.M. (1969), *Electrical Engineering and Engineering Management*, Professor — B.E.E., University of Dayton, 1964; M.S., Polytechnic Institute of Brooklyn, 1967; Ph.D., Polytechnic Institute of Brooklyn, 1970.
- FRAKER, John R. (1975), *Engineering Management*, Professor — B.S., University of Tennessee, 1956; M.S., University of Tennessee, 1965; Ph.D., Clemson University, 1971.
- GALLAGHER, Joseph P. (1981), *Materials Engineerings*, Associate Professor — B.S.E.E., Drexel University, 1964; M.S., University of Illinois, 1965; Ph.D., University of Illinois, 1968.
- GEPHART, Landis S. (1967), *Management Science*, Professor — B.S., University of Dayton, 1940; M.A., University of Dayton, 1948; M.S., Miami University, 1949; Ph.D., University of Florida, 1955.
- HARMER, Richard S. (1971), *Mechanical Engineering*, Associate Professor — B.S., University of Illinois, 1963; M.S., University of Illinois, 1967; Ph.D., University of Illinois, 1971.
- HAVENER, A. George (1980), *Mechanical Engineering*, Assistant Professor — B.S., University of Wyoming, 1967; M.S., Air Force Institute of Technology, 1969; Ph.D., University of Dayton, 1983.
- HENRY, Donald L. (1978), *Engineering Management*, Associate Professor — B.S., University of Illinois, 1943; M.S., Ohio State University, 1953; Ph.D., Ohio State University, 1964.

- JAIN, Vinod K. (1979), *Mechanical Engineering*, Associate Professor — B.S.M.E., University of Roorkee, India, 1964; M.S.M.E., University of Roorkee, 1970; Ph.D., Iowa State University of Science and Technology, 1980.
- JONES, Eugene E. (1980), *Engineering Management and Management Science*, Associate Professor — B.A., Tennessee State University, 1956; M.A., Pennsylvania State University, 1965; Ph.D., Ohio State University, 1978.
- LEE, C. William (1982), *Chemical Engineering*, Assistant Professor — B.S., National Taiwan University, 1976; M.S., University of Akron, 1979.
- LEWIS, Donald E. (1965), *Electrical Engineering*, Associate Professor — E.E., University of Cincinnati, 1954; M.S., Ohio State University, 1957; Ph.D., Ohio State University, 1964.
- LOOMIS, John S. (1979), *Electrical Engineering and Electro-Optics*, Professor — B.S., Case Institute of Technology, 1966; M.S., University of Illinois, 1968; M.S., University of Arizona, 1977; Ph.D., University of Arizona, 1980.
- LU, Chris C. (1976), *Chemical Engineering*, Assistant Professor — B.S., Chen-Kung University at Taiwan, 1960; M.S., University of Missouri at Rolla, 1966; Ph.D., University of Texas, 1972.
- MINARDI, John E. (1964), *Mechanical Engineering*, Professor — B.M.E., University of Dayton, 1955; M.S.M.E., University of Southern California, 1957; Ph.D., University of Cincinnati, 1973.
- PALAZOTTO, Anthony N. (1977), *Civil Engineering*, Adjunct Associate Professor — B.C.E., New York University, 1955; M.C.E., Brooklyn Polytechnic Institute, 1961; Ph.D., New York University, 1968.
- PAYNE, Elmer H. (1961), *Civil Engineering*, Associate Professor — B.S.C.E., Washington University, 1958; M.S., Washington University, 1961; Reg. Prof. Engr.
- PRIMROSE, Russell A. (1978), *Chemical Engineering*, Professor — B.S., Virginia Polytechnic Institute, 1956; M.S., Virginia Polytechnic Institute, 1959; Ph.D., Virginia Polytechnic Institute, 1965; Reg. Prof. Engr.
- RAY, Alden E. (1961), *Mechanical Engineering*, Professor of Materials Engineering — B.A., Southern Illinois University, 1953; Ph.D., Iowa State University, 1959.
- RIPPY, Douglas V. (1980), *Engineering Management and Management Science*, Associate Professor — B.S., Clemson University, 1964; M.S., Air Force Institute of Technology, 1968; Ph.D., Clemson University, 1974.
- ROGERS, Dana B. (1982), *Electrical Engineering*, Associate Professor — B.S.E.E., Arizona State University, 1962; M.S.E.E., Air Force Institute of Technology, 1969; U.D., University of Dayton, 1978.
- RYCKMAN, Seymour J. (1959), *Civil Engineering*, Professor — B.S., Michigan State University, 1939; M.S., University of Missouri, 1942; Reg. Prof. Engr.
- SANDHU, Sarwan S. (1980), *Chemical Engineering*, Assistant Professor — B.Sc., Panjab University, 1961; B.Sc.C.E., Panjab University, 1966; M.Sc.E., University of New Brunswick, 1970; D.I.C., Imperial College, University of London, 1973; Ph.D., University of London, 1973.
- SANDY, Charles W. (1975), *Chemical Engineering*, Assistant Professor — B.S., Pennsylvania State University, 1964; M.S., Pennsylvania State University, 1968; Ph.D., Pennsylvania State University, 1974.

- SCHAUER, John J. (1948), *Mechanical Engineering*, Professor — B.M.E., University of Dayton, 1958; M.S. Carnegie Institute of Technology, 1959; Ph.D., Stanford University, 1964.
- SCHMIDT, Bernard M. (1949), *Electrical Engineering*, Professor — B.E.E., University of Dayton, 1942; M.Sc., Ohio State University, 1957; Ph.D., Ohio State University, 1963; Reg. Prof. Engr.
- SCOTT, James N. (1980), *Mechanical Engineering and Aerospace Engineering*, Associate Professor — B.S., Ohio State University, 1971; M.S., Ohio State University, 1972; Ph.D., Ohio State University, 1977.
- SERVAIS, Ronald A. (1974), *Chemical Engineering*, Professor — B.S., in A.E., Parks College of St. Louis University, 1963; M.S., St Louis University, 1966; D.Sc., Washington University, 1969; Reg. Prof. Engr.
- SMITH, Howard E. (1957), *Mechanical Engineering*, Professor — B.M.E., University of Dayton, 1951; M.S., University of Cincinnati, 1961; Ph.D., University of Cincinnati, 1969; Reg. Prof. Engr.
- SNIDE, James A. (1979), *Materials Engineering*, Associate Professor — B.S.M.E., Ohio University, 1959; M.S., Air Force Institute of Technology, 1965; Ph.D., Ohio State University, 1976.
- STRNAT, Karl J. (1968), *Electrical Engineering*, Tait Professor — Ing. f. Maschinebau, Technolog. Gewerbemuseum, Vienna, 1948; Dipl. Ing., Techn. Hochschule Wien, Vienna, 1953; Dr. Techn. Hochschule Wien Vienna, 1956.
- SWEENEY, Patrick J. (1978), *Engineering Management*, Associate Professor — B.S., University of Notre Dame, 1957; M.S., University of Missouri, 1967; Ph.D., University of Dayton, 1977; Reg Prof. Engr.
- THIELE, Gary A. (1979), *Electrical Engineering*, Professor — B.S., Purdue University, 1960; M.S., Ohio State University, 1964; Ph.D., Ohio State University, 1968; Reg. Prof. Engr.
- VON OHAIN, Hans J.P. (1981), *Mechanical and Aerospace Engineering*, Adjunct Professor — Ph.D., University of Goettingen, Germany, 1935.
- WEEKS, Thomas M.. (1977), *Mechanical Engineering*, Adjunct Professor — B.S.M.E., Syracuse University, 1958; M.S.M.E., Syracuse University, 1961; Ph.D., Syracuse University, 1965.
- WILLIAMSON, Tommy L. (1981), *Electrical Engineering*, Assistant Professor — B.S.E.E., Ohio University, 1962; M.S.E.E., Ohio State University, 1965; Ph.D., Ohio State University, 1975.
- WURST, John C. (1971), *Mechanical Engineering*, Associate Professor — B.M.E., University of Dayton, 1957; M.S.E., University of Dayton, 1968; Ph.D., University of Illinois, 1971; Reg. Prof. Engr.



## SCHOOL OF LAW FACULTY AND STAFF

- DAVIS, Frederick B. (1981), *Dean and Professor* — A.B., Yale University, 1948; J.D., Cornell University, 1953; L.L.M., Victoria University of Wellington, New Zealand, 1955.
- DICKINSON, Kelvin H. (1979), *Associate Professor* — B.A., Western Michigan University, 1965; L.L.B., Harvard Law School, 1968.
- DURHAM, James G. (1980), *Associate Professor* — A.B., University of California at Berkeley, 1973; J.D., University of California at Davis, 1976.
- FERGUSON, Richard T. (1985), *Director of Admission and Development* — B.A., University of Dayton, 1973.
- GEORGE, Norman (1962), *Professor* — B.A., Ohio State University, 1950; M.B.A., University of Pittsburgh, 1954; Ph.D., Ohio State University, 1962; J.D., Salmon P. Chase College of Law, 1967.
- GERLA, Harry S. (1979), *Associate Professor* — B.A., Queens College, 1970; M.A., University of Florida, 1972; J.D., Ohio State University, 1975.
- HAGEL, Thomas L. (1982), *Assistant Professor* — B.S., University of Nebraska, 1972; J.D., University of Nebraska, 1976; LL.M., Temple University, 1982.
- HALLINAN, Charles G. (1983), *Assistant Professor* — B.A., University of Dayton, 1969; J.D., University of Toledo, 1977.
- HANLEY, Thomas L. (1982), *Director of Law Library* — Earlham College, 1970; J.D., Indiana University, 1973; M.S.L.S., Western Michigan University, 1975.
- HOWARTH, Cooley R. (1976), *Associate Professor* — B.A., Michigan State University, 1971; J.D., University of Denver, 1976.
- MICKENBERG, Ira (1982), *Associate Professor* — A.B., William College, 1972; J.D., New York University, 1975; LL.M., 1982.
- MORRIS, Jeffrey W. (1981), *Associate Professor* — B.A., Providence College, 1974; J.D., Washington and Lee University, 1977.
- PERNA, Richard P. (1982), *Associate Professor and Director of Clinical Studies* — B.A., Villanova University, 1971; J.D., Villanova University, 1975.
- ROLL, Patricia H. (1978), *Associate Dean and Assistant Professor (Administrative)* — B.A., Maryville College of the Sacred Heart, 1961; J.D., University of Dayton, 1978.
- SAPPHIRE, Richard B. (1976), *Professor* — B.A., Ohio State University, 1967; J.D., Salmon P. Chase College of Law, 1971; LL.M., Harvard Law School, 1975.
- SEARCY, E. Dale (1976), *Professor* — B.S., General Motors Institute, 1959; J.D., Indiana University, 1963; LL.M., New York University, 1966.
- SULTAN, Allen (1978), *Professor* — A.B., Syracuse University, 1952; J.D., Columbia University, 1958; A.M., University of Chicago, 1961; LL.M., New York University, 1965.
- TURNER, Dennis J. (1974), *Professor* — B.A., Georgetown University, 1967; J.D., Georgetown University, 1970.
- WOHL, Laurence B. (1983), *Associate Dean and Assistant Professor* — B.S., University of California, 1969; J.D., University of California, 1972.
- ZIEGLER, Edward H. (1979), *Professor* — A.B., Notre Dame University, 1970; J.D., University of Kentucky, 1973; LL.M., National Law Center, George Washington University, 1975.

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\_\_\_\_\_ Current Course Composite

\_\_\_\_\_ Area of Interest

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\_\_\_\_\_ Tel.

\_\_\_\_\_ Address

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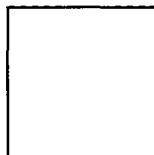
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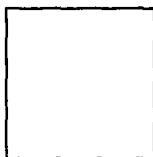
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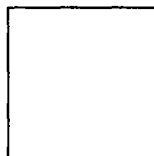
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# GRADUATE PROGRAMS

## INTERDISCIPLINARY AND JOINT STUDIES

American Studies (AMS)  
Clinical Laboratory Technology  
Communication Interdisciplinary  
International Marian Research Institute  
Individual Interdisciplinary Programs  
Teacher Education Interdisciplinary Studies

## JOINT STUDIES

Law and Business Administration (JD/MBA)  
Law and Education (JD/EDU)  
Law Philosophy (JD/PHL)  
Master of Science in Teaching (MST)

## COLLEGE OF ARTS AND SCIENCES

American Studies (AMS)	Philosophy (PHL)
** Biology (BIO)	Philosophy and Law (JD/PHL)
Clinical Laboratory Technology (CLT)	Physics (PHY)
Combined B.S./M.S. Program in Biology	Political Science (POL)
Chemistry (CHM)	Political Science-International Affairs
Clinical Chemistry	Political Science-Public Administration (MPA)
Communication (COM)	Psychology (PSY)
Communication Interdisciplinary	Clinical Psychology
Computer Science (CPS)	Developmental Psychology
English (ENG)	Experimental Human Factors Psychology
History (HST)	General Psychology
Mathematics (MTH)	Social Psychology
Mathematics-Applied Mathematical Systems	Religious Studies (REL):
	Pastoral Ministries
	Theological Studies

## SCHOOL OF BUSINESS ADMINISTRATION

Master of Business Administration (MBA)  
Business Administration and Law (JD/MBA)

## SCHOOL OF EDUCATION

Counselor Education and Human Services (EDC):	Teacher Education (EDT)
Child/Youth Development	Computer in Education
College Student Personnel Services	Early Childhood Education
School Counseling	Elementary Education
School Psychology	EMR (DH) K-12
Social Agencies Counseling	Gifted Education
Visiting Teacher Services	Initial Teaching Certificate (Elementary and Secondary)
Educational Administration (EDA)	Interdisciplinary Studies
Education and Law (JD/EDU)	Learning Disabilities/Behavioral Disorders (K-12)
* Educational Specialist (EDL):	Middle School/Junior High MSPR (K-12)
Leadership	Reading Supervisor (K-12)
Physical and Health Education (EDP)	Reading Teacher (K-12)
	Secondary Education

## SCHOOL OF ENGINEERING

** Aerospace Engineering (AEE)	Engineering (EGR)
Chemical Engineering (CME)	Engineering Management (ENM)
Civil Engineering (CIE)	Management Science (MSC)
** Electrical Engineering (ELE)	** Materials Engineering (MAT)
Electro Optics (EOP)	** Mechanical Engineering (MEE)

## SCHOOL OF LAW

Juris Doctor (LAW)

\* This is a Post-Master's Program

\*\* These Programs offer the Doctorate