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Graduate Catalog

At the University of Dayton we encourage our students, to ask thought-provoking questions. And then we strive to answer them — together — through a framework of scholarship, research and practice.

As a leading Catholic, Marianist university, we value discovery, community, leadership and service. That's the core of our identity. It's the difference between an education and a transformation.

Whether you're looking to advance your career or to create a better world, you'll be encouraged to ask the big questions and then work to discover the answers—all with the support and guidance of top faculty and researchers. What else would you expect from a top-tier Catholic university?

In the graduate academic information section, you can continue your search for knowledge — and locate specifics on various academic areas and the programs and courses they offer.

General Information

Of course, there's more to your academic experiences than just the classes you take. In fact, the University is known for its innovative approach to blurring the lines between learning and living to create a vibrant, engaging community dedicated to moving the world forward.

Whether you're looking to learn more about admission, student services, student costs and finances, or other facets of life that support your academic career, you'll find the answers here.

The University of Dayton

Founded in 1850, the University of Dayton is a private, coeducational school founded by the Society of Mary (the Marianists), a Roman Catholic teaching order.* Today, the University of Dayton is recognized as a top-tier national research university and one of the 10 best Catholic universities in the nation.

As a Catholic, Marianist university, our educational philosophy of openness addresses the needs of the whole person – challenging students' mind, body and spirit through real-world interaction. We ask thought provoking questions and strive to answer them together, in an effort to create a more informed world for everyone. Our faculty members are excellent scholars and instructors, contributing significantly to society and inspiring their students to think critically and create meaningful change.

Inclusiveness of all peoples, cultures and religions defines the core of our Marianist tradition, and the University draws students of many faiths and economic, ethnic and social backgrounds from across the country and around the world.

At the University, we blur the line between living and learning to create a vibrant, engaging community dedicated to improving the world. Through student clubs, campus recreation, education abroad, research, service-learning and career preparation, students are encouraged to engage the world, developing a critical mind and compassionate heart.

* The Society of Mary, founded in France in 1817 by Father William Joseph Chaminade, presently conducts schools throughout the United States and in Africa, Canada, Europe, India, Japan, Korea, and Central and South America. The Society operates Chaminade University in Honolulu and St. Mary's University in San Antonio.

Mission

The University of Dayton is a comprehensive Catholic university, a diverse community committed, in the Marianist tradition, to educating the whole person and to linking learning and scholarship with leadership and service.

The University of Dayton is a comprehensive university committed to offering a broad range of programs in liberal arts, the sciences, and the professions at the undergraduate level, to providing selected programs on the graduate level to meet the needs of the community and region, to sponsoring timely continuing education programs. As comprehensive, the University views learning and scholarship as a shared task of discovering, integrating, applying and communicating knowledge at the intersections of liberal and professional education, across the disciplines, and through combining theory with practice.

As Catholic, the University commits itself to a distinctive vision of learning and scholarship that includes: a common search for truth based on the

belief that truth can be more fully known and is ultimately one; a respect for the dignity of each human person created in the image and likeness of God; and an appreciation that God is manifested sacramentally through creation and the ordinary things in life. Ultimately, a Catholic vision of the intellectual life is based upon the acceptance of the revelation of God in Jesus Christ as it has been received and handed on by the Church. This challenge calls for integration of the human and the divine, reason and faith, and promotes true understanding through a person's head and heart. The University welcomes persons of all faiths and persuasions to participate in open and reflective dialogue concerning truth and the ultimate meaning of life.

Founded in the Marianist tradition, the University is committed to a vision of a distinctive educational community. As Marianist, the University focuses on educating the whole person in and through a community that supports and challenges all who become a part of it. The University forms an educational community thriving on collaboration by people from diverse backgrounds with different skills who come together for common purposes. The University as Marianist challenges all its members to become servant-leaders who connect scholarship and learning with leadership and service.

This university community-comprehensive, Catholic and Marianist-exists not for itself, but to render service. The University creates an environment in which its members, working in a scholarly manner, are free to evaluate the strengths and weaknesses of their own work and the work of others. In partnership, through the Research Institute, Campus Ministry, as well as numerous student organizations, the University works with others to improve the human community.

Brief History

In the summer of 1849, Father Leo Meyer and Brother Charles Schultz, the first Marianist missionaries to America, journeyed from Alsace in France to Cincinnati, Ohio, where they intended to establish a base for the order in this country. They arrived, however, during a cholera epidemic, so Bishop John Purcell of Cincinnati soon sent Father Meyer to Dayton to minister to the sick of Emmanuel Parish. Here he met John Stuart, whose little daughter died of cholera the year before. Mr. Stuart wanted to sell his Dayton property and return with his wife to Europe. On March 19, 1850, the feast of St. Joseph, Father Meyer purchased Dewberry Farm from him and renamed it Nazareth. Mr. Stuart accepted a medal of St. Joseph and a promise of \$12,000 at 6% interest in return for 125 acres, including vineyards, orchards, a mansion, and various farm buildings. Meanwhile, more Marianists arrived, and Nazareth became the first permanent foundation of the Society of Mary in the Western Hemisphere.

The University of Dayton had its earliest beginnings 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. In September, the classes moved to the mansion, and the first boarding students arrived. Father Meyer served as administrator, Brother Maximin Zehler taught, Brother Schultz cooked, and Brother Andrew Edel worked as farmer-gardener.

Five years later the school burned to the ground, but within a year classes resumed. By 1860, when Brother Zehler became president, enrollment approached one hundred. The Civil War had little direct effect on the school because most of the students were too young to serve. St. Mary's grew as college preparatory courses were started in 1861. Then came a novitiate and a normal school for Marianist candidates. An old history refers to the period of 1860-75 as "the brick-and-mortar years." The Chapel of the Immaculate Conception was completed in

1869. In 1870, visitors marveled at new St. Mary Hall, the largest building in Dayton, and called it "Zehler's Folly." The new "college department" moved into it in 1871. (St. Mary Hall is now listed in the National Register of Historic Places.)

In 1882, the institution was incorporated and empowered to confer collegiate degrees under the laws of the State of Ohio. In 1883, another devastating fire visited the campus, but this time some of the buildings were saved. The statue now known as Our Lady of the Pines was erected in gratitude, and the following year St. Joseph Hall was built, symbolizing the renewed confidence of the Dayton Marianists. In a more famous emergency, the school was spared by water as it had not been by fire. Because of its hillside location, it survived the Great Flood of 1913 untouched and was able to give shelter to 600 refugees.

St. Mary's had reorganized in 1902 into four departments—classical, scientific, academic, and preparatory. In 1905 it added the Commercial Department, which would become the Department of Commerce and Finance in 1921, the Division of Business Organization in 1924, and ultimately the School of Business Administration. Four engineering departments, appearing from 1909 to 1920, were to become the Engineering Division. In 1915, the Marianist training program (novitiate and normal school) was moved to Mount St. John's.

Known at various times as St. Mary's School, St. Mary's Institute, and St. Mary's College, the school assumed its present identity in 1920, when it was incorporated as the University of Dayton. The same year, the elementary division was closed, the Division of Education was organized, and the University started its tradition of evening and Saturday classes to serve adults in the surrounding community. In 1922, the College of Law opened, also with evening classes. Other graduate programs followed, to augment the professional degree programs which distinguished the University from many of Ohio's other independent institutions of higher learning. In 1923, the first summer session was held; its classes, like those of the law college, were open to women as well as men.

The 1930s, with the Great Depression, were in many ways a time of retrenchment for the University of Dayton as for most other American schools. The Dayton Marianists had survived cholera, smallpox, and influenza, wars, fire and flood, and (in 1924) a Ku-Klux-Klan cross-burning on the campus. In 1935, even as the University turned its preparatory school functions over to Chaminade High School and graduated what was to be its last class in law for almost forty years, it inaugurated a college for women, with sisters of Notre Dame in charge of twenty-seven entering female students. Two years later, the college for women closed; all divisions opened to women, and the University became fully coeducational.

Enrollment had passed a thousand when World War II broke out. By 1950, with the return of the veterans, it reached more than 3,500. In 1967, it topped 10,000. But then, with the expansion of a community college and the establishment of a state university nearby, enrollment declined, and the resulting retrenchment was exacerbated by rising inflation and the energy crisis. Nor did the social turbulence and activism of the late 1960s and early 1970s bypass the University of Dayton. Some students and faculty protested against the Vietnam War, compulsory ROTC, and defense-related research activities. They campaigned also for changes in the curriculum, seeking more opportunities for meeting personal needs and goals. In response, the University gave greater responsibility to students for their own academic decisions, and it initiated interdisciplinary programs, self-directed learning, and various experimental courses and methods. Meanwhile, the profile of the student body changed. The 1960s saw significant increases in female and minority students. In the 1970s, there was a shift to a largely residential

student body, and at the same time many more "nontraditional" (older) students matriculated. By the mid-1970s, total enrollment steadied at more than 10,000, with about 6,000 full-time undergraduates.

The University held its first general public fund-raising campaign in order to erect Wohlleben Hall in 1958 and Sherman Hall in 1960. Both campus and off-campus residences, residence halls, apartments, and houses were added and improved as such emergency accommodations as surplus Army barracks and an adapted Army hospital (renamed the West Campus) were phased out.

Long-range planning has helped integrate new buildings and old and made the campus more livable by increasing its beauty as well as its efficiency. In 1986, old and new combined in the design of the Anderson Center between Rike Hall and Miriam Hall. When fire ravaged St. Joseph Hall in 1987, the University was able to rebuild and restore it without harming the architectural integrity of that historic corner of campus. Keeping pace with the needs of the University, the Jesse Philips Humanities Center opened in 1993, and Joseph E. Keller Hall was built for the School of Law in 1997. In addition, the University has renovated Miriam Hall, converted its child care center into an early childhood demonstration school called the Bombeck Family Learning Center and completed the first phases of a modern Science Center. In 2002, the University of Dayton Arena underwent a modernization, placing it among the best venues for basketball in the country. The Donohoe Basketball Center, a major addition to the UD Arena giving UD a premier basketball facility for both playing and training, was dedicated in 1998.

As the University of Dayton entered the 21st century, it built modern student facilities, including ArtStreet and Marianist Hall (2004) and RecPlex (2006).

The edifices are not the only changes on campus. In 1960, the University reorganized academically and administratively. Administrative changes saw the formation of the College of Arts and Sciences from what had been two separate units. Other divisions became the Schools of Business Administration, Education and Engineering. In 1970, the University charter was amended and lay members now joined the Marianists on the Board of Trustees. In 1974, the School of Law reopened.

Academically, the University has continued to expand and enrich its offerings and support services, especially since mid-century. Graduate studies, abandoned during World War II, resumed in 1960, with the School of Education leading the way. In 1969, the Department of Biology inaugurated the first doctoral program since 1928. The School of Engineering introduced two doctoral programs in 1973, and in 1992, the first doctoral degrees in educational leadership were awarded. In 1997, the Board of Trustees approved a doctoral program in theology with a focus on the Catholic experience in the United States. It was the first such doctoral program on a Catholic campus nationally.

In 1975, the Marian Library, which had grown to international renown since its inception in 1943, founded the International Marian Research Institute (IMRI), which was incorporated in 1984 as a branch of the Marianum in Rome. IMRI is empowered to confer licentiate and doctoral degrees in theology, with a specialization in Mariology. The Marian Library now holds the world's largest collection of print materials on Mary, the mother of Jesus.

For all undergraduates, a general education plan was adopted in 1983 to foster integration of the liberal arts in a professional education. In 1990, the Academic Senate approved a revision of the general education requirements that called for an integrated base of four humanities courses complemented by clusters of other courses, requiring various disciplines to focus on a single theme.

The University has always maintained a tradition of innovation. In 1874, St. Mary's Institute's new Play House gymnasium was the only one of its kind in Ohio, and it is probable that the first organized basketball game in the state took place there. A system of elective studies was inaugurated in 1901. In 1924, the University was the first school to be granted a charter by the National Aeronautical Association. It was one of the first in the nation to offer a course in biophysics (1935). In 1948, it was a pioneer in student ratings of professors, and in 1952, it invited persons over 60 to attend its evening classes as guests. Its graduate program in laser optics was one of the earliest in the country. It was one of the first educational institutions to adopt electronic data-processing equipment and to offer degrees in computer science. In 1999, the University of Dayton was the first in the nation to offer an undergraduate degree program in human rights. The University is currently developing partnerships with top universities in China, including Nanjing University, one of that nation's leading research institutions.

More than just a breeding ground for academic excellence, the University also responds to the needs of society and the region.

Sponsored research at the University began in 1949 with a few faculty members and student assistants doing part-time research for industry and government agencies. In 1956, the University of Dayton Research Institute (UDRI) was formed to consolidate the administration of the growing research activities. Annual research volume has increased from \$3,821 in 1949, to more than \$85 million today. The University of Dayton ranks second in the nation in funding for materials research.

Named for Brother Raymond L. Fitz, S.M., the University's longest-serving president, the Fitz Center for Leadership in Community, founded in 2002, connects students and faculty to the community through service learning, social justice and ongoing involvement.

Among the University's other community collaborations is the Dayton Early College Academy, a public high school founded in partnership with the Dayton Public Schools. DECA, whose first class graduated in 2007, is the only charter school in the country operated by a Catholic university.

The University long-range plans include incorporating nearly 50 acres purchased from NCR in 2005. The land, lying between the academic core of campus and the Arena Sports Complex, increased the size of campus by nearly a quarter.

From its humble roots as a private boarding school for boys, the University of Dayton today ranks among the best Catholic universities in the country. It is the largest independent university in Ohio and draws students from around the country and the world.

Statement of Purpose

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 human institutions. 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 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 of knowledge that it possesses, but also the skills and techniques used in the accumulation and dissemination of knowledge; and, 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.

Accreditation

The University of Dayton is accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools <http://www.ncahlc.org/> HLC phone: (312) 263-0456.

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

- The American Bar Association (ABA) for the School of Law
- The Association to Advance Collegiate Schools of Business (AACSB International) for the baccalaureate, accounting and Master of Business Administration programs of the School of Business Administration
- The Commission on Accreditation for Dietetics Education (CADE) for the didactic program in dietetics
- The Commission on Accreditation in Physical Therapy Education (CAPTE)
- The Council for Accreditation of Counseling and Related Educational Programs (CACREP)
- The Engineering Accreditation Commission of ABET (Accreditation Board for Engineering and Technology), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, ABET telephone: (410) 347-7700, for programs in chemical engineering, civil engineering, computer engineering, electrical engineering, and mechanical engineering
- The Masters in Psychology Accreditation Council (MPAC) for the Master of Arts program in Clinical Psychology
- The National Association of Schools of Art and Design (NASAD)
- The National Association of Schools of Music (NASM)

- The National Association of Schools of Public Affairs and Administration (NASPAA)
- The National Council for Accreditation of Teacher Education (NCATE)
- The Technology Accreditation Commission of ABET (Accreditation Board for Engineering and Technology), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, ABET telephone: (410) 347-7700, for programs in computer engineering technology, electronic engineering technology, industrial engineering technology, manufacturing engineering technology, and mechanical engineering technology

The University has the approval of the following:

- The American Chemical Society
- The Association of American Law Schools
- The Counselor, Social Worker & Marriage and Family Therapist Board
- The League of Ohio Law Schools
- The National Association for Music Therapy
- The Ohio Board of Regents
- The State of Ohio Department of Education

Institutional Memberships

The University holds institutional membership in the following:

- The Academy of Criminal Justice Sciences
- The American Assembly of Collegiate Schools of Business
- The American Association for Higher Education
- The American Association of Colleges for Teacher Education
- The American Association of Collegiate Registrars and Admissions Officers
- The American Association of University Administrators
- The American Association of University Women
- The American Council on Education
- The American Dietetics Association
- The American Home Economics Association
- The American Library Association
- The American Society of Criminology
- The American Society for Engineering Education
- The Associated New American Colleges
- The Association of American Colleges and Universities
- The Association of American Law Schools
- The Association of Catholic Colleges and Universities
- The Association of College and University Housing Officers
- The Association of Governing Boards of Universities and Colleges
- The Association of Independent Colleges and Universities of Ohio
- The Catholic College Coordinating Council
- The College Entrance Examination Board
- The College and University Personnel Association
- The Comparative and International Education Society
- The Cooperative Education Association
- The Council for Advancement and Support of Education (CASE)
- The Council for the Advancement of Experiential Learning
- The Council of Graduate Schools
- The Council on Social Work Education
- The Dayton Area Chamber of Commerce

- The Dayton Art Institute (sponsoring)
- The Institute of International Education
- The International Federation of Catholic Universities (IFCU)
- The League of Ohio Law Schools
- The Midwestern Criminal Justice Association
- The National Association of College and University Food Services
- The National Association of College Auxiliary Services
- The National Association for Foreign Student Affairs
- The National Association of Independent Colleges and Universities
- The National Association of Student Personnel Administrators
- The National Catholic Education Association
- The National Council of Catholic Bishops
- The National Scholarship Service and Fund for Negro Students
- The National University Teleconference Network
- The North Central Association of Colleges and Schools*
- The Ohio Academy of Science
- The Ohio Association of Colleges for Teacher Education
- The Ohio Association of Private Colleges for Teacher Education
- The Ohio Campus Compact
- The Ohio College Association
- The Ohio Continuing Higher Education Association
- The PBS Adult Learning Satellite Service
- The Society for the Advancement of Education
- The Southwestern Ohio Council for Higher Education

* North Central Association
30 N. LaSalle Street, Suite 2400, Chicago, IL 60602
(800) 621-7440
<http://ncahigherlearningcommission.org>

Basic Academic Structure of the University

The University of Dayton now includes the College of Arts and Sciences and four professional schools, each with a dean: the School of Business Administration, the School of Education and Allied Professions, the School of Engineering (including Engineering Technology), and the School of Law. The deans, through their departmental chairpersons, administer the undergraduate and graduate programs. The vice president for graduate studies and research and dean of graduate studies has the overall responsibility for all graduate programs. At the head of the academic structure of the University is the provost.

The University of Dayton awards the following baccalaureate, professional, and graduate degrees:

- Bachelor of Arts
- Bachelor of Chemical Engineering
- Bachelor of Civil Engineering
- Bachelor of Electrical Engineering
- Bachelor of Fine Arts
- Bachelor of General Studies
- Bachelor of Mechanical Engineering
- Bachelor of Music
- Bachelor of Science
- Bachelor of Science in Business Administration

- Bachelor of Science in Computer Engineering
- Bachelor of Science in Education and Allied Professions
- Bachelor of Science in Engineering Technology
- Master of Arts
- Master of Business Administration
- Master of Computer Science
- Master of Financial Mathematics
- Master of Laws
- Master of Mathematics Education
- Master of Public Administration
- Master of Science
- Master of Science in Aerospace Engineering
- Master of Science in Applied Mathematics
- Master of Science in Chemical Engineering
- Master of Science in Civil Engineering
- Master of Science in Education and Allied Professions
- 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 Engineering Mechanics
- Master of Science in Management Science
- Master of Science in Materials Engineering
- Master of Science in Mechanical Engineering
- Master of Science in Renewable and Clean Energy
- Master in the Study of Law
- Educational Specialist
- Juris Doctor
- Doctor of Engineering
- Doctor of Philosophy in Biology
- Doctor of Philosophy in Educational Leadership
- Doctor of Philosophy in Electro-Optics
- Doctor of Philosophy in Engineering
- Doctor of Philosophy in Theology
- Doctor of Physical Therapy
- Communication Studies
- Computer Information Systems
- Computer Science
- Criminal Justice Studies
- Economics
- Electronic Media
- English
- Environmental Biology
- Environmental Geology
- Fine Arts
- French
- General Studies
- Geology
- German
- Graphic Design
- History
- Human Rights
- International Studies
- Journalism
- Languages
- Mathematics
- Medicinal-Pharmaceutical Chemistry
- Music
- Music Composition
- Music Education
- Music Performance
- Music Therapy
- Philosophy
- Photography
- Physical Science
- Physics
- Physics-Computer Science
- Political Science
- Pre-Dentistry
- Pre-Medicine
- Psychology
- Public Relations
- Religious Studies
- Sociology
- Spanish
- Theatre
- Visual Arts
- Women's and Gender Studies

College of Arts and Sciences

The College of Arts and Sciences offers five undergraduate degrees:

- Bachelor of Arts
- Bachelor of Science
- Bachelor of Music
- Bachelor of Fine Arts
- Bachelor of General Studies.

Academic majors offered by the College include:

- American Studies
- Applied Mathematical Economics
- Art Education
- Art History
- Biochemistry
- Biology
- Chemistry
- Communication Management

The College of Arts and Sciences offers Masters degree programs in:

- Biology
- Chemistry
- Communication
- Computer Science
- English
- Applied Mathematics
- Pastoral Ministry
- Psychology

- Public Administration
- Theological Studies

The College works in collaboration with the School of Education and Allied Professions to offer the Master of Arts in English with a teaching track, the Master of Science in Education and Allied Professions with music education concentration, and the Master of Science in Education and Allied Professions with art education concentration.

The College of Arts and Sciences offers graduate programs leading to doctoral degrees in biology and in theology and participates through the Department of Physics with the School of Engineering in an interdisciplinary program leading to the doctoral degree in electro-optics.

School of Business Administration

The School of Business Administration offers a Bachelor of Science degree with majors in:

- Accounting
- Business Economics
- Entrepreneurship
- Finance
- International Business
- Leadership
- Management Information Systems
- Marketing
- Operations Management

On the graduate level, the School awards the Master of Business Administration degree.

School of Education and Allied Professions

The School of Education and Allied Professions (SOEAP) prepares professionals for the early, middle, and secondary levels, and for specialized fields such as:

- Art
- Music
- Foreign Language
- Intervention Specialist
- Physical Education
- Dietetics/Nutrition
- Exercise Physiology
- Exercise Science
- Pre-Physical Therapy
- Sport Management

It conducts professional development and post-graduate programs and offers graduate programs leading to the degrees of:

- Master of Science in Education and Allied Professions (along with Educational Specialist)
- Doctor of Philosophy in Educational Leadership
- Doctor of Physical Therapy

These programs are designed to prepare school administrators, school counselors, school psychologists, and teachers for both public and private schools nationwide, as well as preparing physical therapists for practice in a clinical setting.

School of Engineering

The School of Engineering includes the departments of:

- Chemical and Materials Engineering
- Civil and Environmental Engineering and Engineering Mechanics
- Electrical and Computer Engineering
- Mechanical and Aerospace Engineering
- Engineering Technology

The School offers four-year curricula leading to the degrees of:

- Bachelor of Chemical Engineering
- Bachelor of Civil Engineering
- Bachelor of Electrical Engineering
- Bachelor of Mechanical Engineering
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Engineering Technology with specialties in:
 - Electronic and Computer Engineering Technology
 - Industrial Engineering Technology
 - Manufacturing Engineering Technology
 - Mechanical Engineering Technology

The School offers graduate programs leading to the degrees of:

- Master of Science in Engineering
- 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 Management
- Master of Science in Engineering Mechanics
- Master of Science in Management Science
- Master of Science in Materials Engineering
- Master of Science in Mechanical Engineering
- Master of Science in Renewable and Clean Energy
- Doctor of Engineering
- Doctor of Philosophy in Engineering
- Doctor of Philosophy in Electro-Optics

School of Law

The University of Dayton School of Law offers the Juris Doctor and two joint degree programs: Juris-Doctor-Master of Business Administration and Juris Doctor-Master of Science in Education and Allied Professions (Educational Administration).

The Graduate School

Programs leading to advanced degrees are offered through the Schools of Business, Education, Engineering and Law, and through the College of Arts and Sciences.

Doctoral programs are offered in:

- Biology
- Theology
- Aerospace Engineering
- Electrical Engineering
- Materials Engineering

- Mechanical Engineering
- Electro-Optics
- Educational Leadership

Both Ph.D. and D.E. (i.e., Doctor of Engineering) degrees are offered through the School of Engineering. A Doctor of Physical Therapy program is offered through the School of Education and Allied Professions.

The College of Arts and Sciences offers master's programs in:

- Biology
- Chemistry
- Communication
- Computer Science
- English
- Applied Mathematics
- Financial Mathematics
- Mathematics Education (in collaboration with the Department of Teacher Education)
- Pastoral Ministry
- Psychology
- Public Administration
- Theological Studies

A concentration in Music Education is offered through and in collaboration with the School of Education and Allied Professions. Individual interdisciplinary studies and several post-baccalaureate certificate programs are also available.

The School of Business Administration offers a Master's of Business Administration with concentrations in:

- Accounting
- Business Intelligence
- Entrepreneurship
- Finance
- International Business
- Management Information Systems
- Operations Management
- Marketing
- Technology-Enhanced Business/e-Commerce

A combined program offering a B.S. in Accounting and an MBA is available. The J.D./MBA joint degree program is also offered to students meeting the admission requirements of both the Law School and the School of Business Administration. In addition, the Post-MBA Certificate Program offers the opportunity for MBA graduates to earn a graduate-level professional certificate in an approved concentration field. A post-baccalaureate certificate in Cyber-Security Management is also available.

The School of Education and Allied Professions offers a Master of Science in Education (MSE) degree, with programs in:

- Teacher Education
- Educational Leadership
- Counselor Education
- Exercise Science

The School also offers an Educational Specialist degree in Educational Leadership and School Psychology, as well as a graduate licensure program.

The School of Engineering offers the Master of Science degree in:

- Aerospace Engineering
- Chemical Engineering
- Civil Engineering
- Electrical Engineering
- Electro-Optics
- Engineering
- Engineering Management
- Engineering Mechanics
- Materials Engineering
- Management Science

The School of Law offers the Master of Laws (LL.M.), the Master in the Study of Law (M.S.L.) and the Juris Doctor (J.D.) degrees.

Academic Calendar Year

The University of Dayton operates under an early semester, split third-term calendar. The academic year begins with the fifteen-week fall term, which ends before Christmas. The spring term, also fifteen weeks, begins in January and ends early in May. The third, or 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 spring 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 degree requirements. The University issues diplomas at the end of each term and holds ceremonies in May and December. Students who must earn their own money can have extra time for employment in spring and summer; or they may enroll for the third term and work during the fall or the spring term, when the employment market is not crowded with other college students.

Academic Calendar 2012-2013

Subject to change

FALL 2012

Date	Description
Mon, Aug 6	Degrees conferred-- no ceremony
TBD	New Faculty Orientation
Sat-Tue, Aug 18-21	New Student Orientation
Tue, Aug 21	New Student Convocation
Tue, Aug 21	Last day to complete registration
Wed, Aug 22	Classes begin at 8:00 a.m.
Tue, Aug 28	Last day for late registration, change of grading options and schedules
Mon, Sep 3	Labor Day-- no classes
Tue, Sep 11	Last day to change Second Session and full Summer Term grades
Wed, Sep 12	Last day to drop classes without record
Wed, Oct 3	Mid-Term Break begins after last class
Mon, Oct 8	Classes resume at 8:00 a.m.
Mon, Oct 15	Last day for Graduate and Doctoral students to apply for December 2012 graduation
Wed, Oct 17	First-Year students' midterm progress grades due by 4:00 p.m.

Fri-Sun, Oct 19-21	Family Weekend
Thu, Nov 1	Last day for Undergraduate students to apply for May 2013 graduation
Mon, Nov 5	Last day to drop classes with a record of W
Tue, Nov 20	Thanksgiving recess begins after last class
Sat, Nov 24	Saturday classes meet
Mon, Nov 26	Classes resume at 8:00 a.m.
Thu, Dec 6	Last day of classes
Fri, Dec 7	Feast of the Immaculate Conception/ Christmas on Campus-- no classes
Sat, Dec 8	Study Day
Sun, Dec 9	Study Day
Mon-Fri, Dec 10-14	Exams-- Fall Term ends after final examinations
Sat, Dec 15	Diploma Exercises at 9:45 a.m.
Tue, Dec 18	Grades due by 9 a.m. Deficiency slips due in Deans' offices
Thu, Dec 20	Grades posted
Tue, Jan 22	Last day to change Fall Term grades

CHRISTMAS BREAK

Date	Description
Sun, Dec 16	Christmas Break begins
Sun, Jan 13	Christmas Break ends

SPRING 2013

Date	Description
Fri, Jan 11	Spring New Student Orientation
Fri, Jan 11	Last day to complete registration
Mon, Jan 14	Classes begin at 8:00 a.m.
Fri, Jan 18	Last day for late registration, change of grading options and schedules
Mon, Jan 21	Martin Luther King, Jr. Day-- no classes
Tue, Jan 22	Last day to change Fall Term grades
Fri, Feb 1	Last day for Graduate and Doctoral students to apply to apply for May 2013 graduation
Mon, Feb 4	Last day to drop classes without record
Wed, Feb 27	Mid-Term Break begins after last class
Mon, Mar 4	Classes resume at 8:00 a.m.
Wed, Mar 13	First-Year students' midterm progress grades due by 4:00 p.m.
Fri, Mar 15	Last day for Undergraduate students to apply for August 2013 graduation
Wed, Mar 27	East recess begins after last class
Mon, Apr 1	Easter Monday-- no day classes -- classes resume at 4:30 p.m.
Mon, Apr 1	Last day for Undergraduate students to apply for December 2013 graduation
Wed, Apr 3	Last day to drop classes with record of W
Wed, Apr 17	Bro. Joseph W. Stander Symposium- Alternate Day of Learning
Fri, April 26	Last day of classes
Sat, Apr 27	Study Day
Sun, Apr 28	Study Day

Mon-Fri, April 29-May 3	Exams-- Spring Term ends after final examinations
Sat, May 4	Doctoral/Graduate Commencement Exercises at TBD
Sun, May 5	Undergraduate Commencement Exercises at 9:45 a.m.
Tue, May 7	Grades due by 9:00 a.m. Deficiency slips due in Deans' offices
Thu, May 9	Grades posted
Mon, Jun 10	Last day to change Spring Term grades

SUMMER 2013-- FIRST SESSION

Date	Description
Fri, May 10	Last day to complete registration
Sat, May 13	Classes begin at 8:00 a.m.
Tue, May 14	Last day for Summer Term- First Session registration, change of grading options and schedules
Thu, May 16	Last day for late full Summer Term registration, change of grading options and schedules
Wed, May 22	Last day to drop without record form First Session classes
Mon, May 27	Memorial Day -- no classes
Mon, Jun 10	Last day to drop with record of W from First Session classes
Mon, Jun 10	Last day to change Spring Term grades
Fri-Sat, Jun 21-22	Exams-- full Summer Term classes do not meet First Session ends after final examinations
Tue, Jun 25	Grades due by 9:00 a.m. Deficiency slips due in Deans' offices
Thu, Jun 27	Grades posted
Mon, Jul 1	Last day for Graduate and Doctoral students to apply for August 2013 graduation
Wed, Jul 3	Last day to drop without record from full Summer Term classes
Tue, Jul 30	Last day to change First Session grades

SUMMER 2013-- SECOND SESSION

Date	Description
Fri, Jun 21	Last day to complete registration
Sat, Jun 22	Saturday classes begin
Mon, Jun 24	Second Session classes begin
Tue, Jun 25	Last day for late Summer Term- Second Session registration, change of grading options and schedules
Mon, Jul 1	Last day for Graduate and Doctoral students to apply for August 2013 graduation
Wed, Jul 3	Last day to drop without record from Second Session and full Summer Term classes
Thu, Jul 4	Independence Day-- no classes
Mon, Jul 15	Last day to drop with record of W from Second Session and full Summer Term classes
Tue, Jul 30	Last day to change First Session grades
Fri-Sat, Aug 2-3	Exams-- Second Session and full Summer Term end after final examinations
Mon, Aug 5	Degrees conferred-- no ceremony
Tue, Aug 6	Grades due by 9:00 a.m. Deficiency slips due in Dean's offices
Thu, Aug 8	Grades posted

Tue, Sep 10	Last day to change Second Session and full Summer Term grades
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Academic Calendar 2013-2014

FALL 2013

Date	Description
Mon, Aug 5	Degrees conferred--no ceremony
TBD	New Faculty Orientation
Sat-Tue, Aug 17-20	New Student Orientation
TBD	Upperclass students move into UD Housing
TBD	New Student Convocation
Tue, Aug 20	Last day to complete registration
Wed, Aug 21	Classes begin at 8:00 a.m.
Tue, Aug 27	Last day for late registration, change of grading options and schedules
Mon, Sep 2	Labor Day-- no classes
Tue, Sep 10	Last day to change Second Session and full Summer Term grades
Wed, Sep 11	Last day to drop classes without record
Wed, Oct 9	Mid-Term Break begins after last class
Mon, Oct 14	Classes resume at 8:00 a.m.
Tue, Oct 15	Last day for Graduate and Doctoral students to apply for December 2013 graduation
Wed, Oct 16	First-Year students' midterm progress grades due by 4:00 p.m.
TBD	Family Weekend
Fri, Nov 1	Last day for Undergraduate students to apply for May 2014 graduation
Mon, Nov 4	Last day to drop classes with record of W
Tue, Nov 26	Thanksgiving recess begins after last class
Sat, Nov 30	Saturday classes meet
Mon, Dec 2	Classes resume at 8:00 a.m.
Thu, Dec 5	Last day of classes
Fri, Dec 6	Feast of the Immaculate Conception/Christmas on Campus-- no classes
Sat, Dec 7	Study Day
Sun, Dec 8	Study Day
Mon-Fri, Dec 9-13	Exams-- Fall Term ends after final examinations
Sat, Dec 14	Diploma Exercises at 9:45 a.m.
Tue, Dec 17	Grades due by 9:00 a.m. Deficiency slips due in Deans' offices
Thu, Dec 19	Grades posted
Tue, Jan 21	Last day to change Fall Term Grades

CHRISTMAS BREAK

Date	Description
Sun, Dec 15	Christmas Break begins
Sun, Jan 12	Christmas Break ends

SPRING 2014

Date	Description
Fri, Jan 10	Last day to complete registration

Mon, Jan 13	Classes begin at 8:00 a.m.
Fri, Jan 17	Last day for late registration, change of grading options and schedules
Mon, Jan 20	Martin Luther King, Jr. Day -- no classes
Tue, Jan 21	Last day to change Fall Term grades
Sat, Feb 1	Last day for Graduate and Doctoral students to apply for May 2014 graduation
Mon, Feb 3	Last day to drop classes without record
Wed, Mar 5	Mid-Term Break begins after last class
Mon, Mar 10	Classes resume at 8:00 a.m.
Wed, Mar 12	First-Year students' midterm progress grades due by 4:00 a.m.
Sat, Mar 15	Last day for Undergraduate students to apply for August 2014 graduation
Tue, Apr 1	Last day for Undergraduate students to apply for December 2014 graduation
Wed, Apr 2	Last day to drop classes with record of W
TBD	Bro. Joseph W. Stander Symposium-Alternate Day of Learning
Wed, Apr 16	Easter Recess begins after last class
Mon, Apr 21	East Monday-- no day classes-- classes resume at 4:30 p.m.
Fri, Apr 25	Last day of classes
Sat, Apr 26	Study Day
Sun, Apr 27	Study Day
Mon-Fri, Apr 28-May 2	Exams-- Spring Term ends after final examinations
Sat, May 3	Doctoral/Graduate Commencement Exercises- Time TBD
Sun, May 4	Undergraduate Commencement Exercises at 9:45 a.m.
Tue, May 6	Grades due by 9:00 a.m. Deficiency slips due in Deans' offices
Thu, May 8	Grades posted
Mon, Jun 9	Last day to change Spring Term grades

SUMMER 2014-- FIRST SESSION

Date	Description
Fri, May 9	Last day to complete registration
Sat, May 10	Saturday classes begin
Mon, May 12	Classes begin at 8:00 a.m.
Tue, May 13	Last day for late Summer Term-First Session registration, change of grading options and schedules
Thu, May 15	Last day for late full Summer Term registration, change of grading options and schedules
Wed, May 21	Last day to drop without record from First Session classes
Mon, May 26	Memorial Day-- no classes
Mon, Jun 9	Last day to drop with record of W from First Session classes
Mon, Jun 9	Last day to change Spring Term grades
Fri-Sat, Jun 20-21	Exams-- full Summer Term classes do not meet First Session ends after final examinations
Tue, Jun 24	Grades due by 9:00 a.m. Deficiency slips due in Deans' offices

Thu, Jun 26	Grades posted
Tue, Jul 1	Last day for Graduate and Doctoral students to apply for August 2014 graduation
Wed, Jul 2	Last day to drop without record from full Summer Term classes
Tue, Jul 29	Last day to change First Session grades

SUMMER 2014-- SECOND SESSION

Date	Description
Fri, Jun 20	Last day to complete registration
Sat, Jun 21	Saturday classes begin
Mon, Jun 23	Second Session classes begin
Tue, Jun 24	Last day for late Summer Term-- Second Session registration, change of grading options and schedules
Tue, Jul 1	Last day for Graduate and Doctoral students to apply for August 2014 graduation
Wed, Jul 2	Last day to drop without record from Second Session and full Summer Term classes
Fri, Jul 4	Independence Day-- no classes
Mon, Jul 14	Last day to drop with record of W from Second Session and full Summer Term classes
Tue, Jul 29	Last day to change First Session grades
Fri-Sat, Aug 1-2	Exams--Second Session and full Summer Term end after final examinations
Mon, Aug 4	Degrees conferred-- no ceremony
Tue, Aug 5	Grades due by 9:00 a.m. Deficiency slips due in Deans' offices
Thu, Aug 7	Grades posted
Tue, Sep 9	Last day to change Second Session and full Summer Term grades

Libraries

The University Libraries are comprised of:

- Roesch Library
- The Marian Library
- The University Archives and Special Collections
- The International Marian Research Institute

Roesch Library houses books, journals, videos, DVDs, CDs, government documents, and microforms for both graduate and undergraduate students. Roesch Library is open 114 hours a week throughout much of the academic year and 24 hours per day during finals. Reference assistance is provided in a variety of forms including in person, email, IM, telephone, and private consultations. Roesch Library subscribes to over 280 databases on a variety of subjects and provides access to more than 69,000 journals in print and electronic formats. Its book (print and electronic) and microform collections include over 1.4 million volumes.

The Libraries also provide comfortable study areas, photocopiers, and individual and group study rooms. Roesch Library has 20 computer workstations located on the first floor and 37 computer workstations located on the second floor. All workstations provide access to the campus network, OhioLINK resources, and the Internet. These computers run Microsoft Office applications, SPSS, and audio and video editing software. Group Project Space, also located on the second floor, has ten workstations equipped with double monitors that allow for group collaboration. All floors have data ports and wireless network access

that allow students to access campus and information networks through notebook computers.

The Libraries are members of OhioLINK, a cooperative venture of university and college libraries and the Ohio Board of Regents. OhioLINK partners have created a common information network providing rapid access to and delivery of over 49 million items available at college and university libraries across the state. All of the libraries affiliated with OhioLINK provide on-site borrowing privileges to students and faculty associated with the University. Access to the Libraries' Web page, databases, and online catalog is available at <http://www.udayton.edu/libraries/>.

The Marian Library (seventh floor of the Roesch Library) is recognized as the world's largest collection of published materials on the Virgin Mary. Its comprehensive collection embraces the works treating the Virgin Mary as found in Scripture, tradition, doctrine, history, art, popular culture, spirituality, and devotion. The multi-language collection includes over 95,000 books (6,000 printed before 1800), 200 periodicals, a clipping file of over 60,000 items, a Marian stamp collection, a Christmas creche collection, statues, medals, postcards, and works of art.

Publications include:

- Marian Studies (papers given at the annual meeting of the Mariological Society of America)
- Marian Library Studies (original research on Marian topics)
- The twice-yearly Marian Library Newsletter

United with the Marian Library is the International Marian Research Institute (IMRI), affiliated with the Pontifical Theological Faculty Marianum in Rome. IMRI offers courses in Marian studies as well as pontifical academic degrees (Licentiate and doctorate) in theology with specialization in Mariology. The Marian Library's collections can be accessed via the University Libraries' online catalog. Hours, an explanatory video, and information on current art exhibits can be found on the Mary Page at <http://campus.udayton.edu/mary/>.

The University of Dayton School of Law Library is located in Joseph E. Keller Hall. Its collection contains over 190,000 volumes and over 676,000 physical units of microforms. The open-stack arrangement of the Law Library permits easy access to all materials. For additional information see <http://community.udayton.edu/law/library/>.

The Brother Louis J. Faerber, S.M., Curriculum Materials Center (CMC) houses the SOEAP's specialized education collections and is located in Chaminade Hall. Its collection includes:

- Professional education books and journals
- Children and young adult literature
- Elementary and secondary textbooks
- Standardized assessments
- Teaching aids (games & manipulatives)
- DVD's
- CD's
- Videocassettes
- Audiocassettes
- LP records
- Charts
- Material kits
- Other resources

The CMC also houses research projects, theses, and dissertations completed for the SOEAP's respective graduate programs. A copier, four

networked computer workstations, the Ellison Press, Accu-Cut Machine, and an assortment of letter and shape dies are available for student use. Additional information is available at www.udayton.edu/education/cmci/index.php.

Off-Campus Academic Centers

The University of Dayton maintains an off-campus center for graduate study in Education & Allied Professions (Columbus). All programs and courses are closely supervised by the dean of Education & Allied Professions and the dean of the Graduate School. Most of these courses are taught by the faculty member teaching the same course on the main campus.

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. All credited courses, whenever offered or in whatever form, conform to the same standards and are governed by the same policies and regulations prevailing during the regular day sessions.

As part of a comprehensive strategy for adult education through Graduate, Professional and Continuing Education, Special Programs and Continuing Education 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 Student and Scholar Services, located in the Center for International Programs, serves students, faculty, staff, and visiting scholars from other countries who are studying or working at the University.

To foster interdisciplinary efforts, the Office of the Provost can administer courses designated UDI (University of Dayton Interdisciplinary) to accommodate interschool offerings and experimental programs.

Southwestern Ohio Council for Higher Education (SOCHE)

Students at the University of Dayton may register for courses for credit at Southwestern Ohio Council for Higher Education institutions (see below for a complete list) at the University of Dayton's rate per credit hour. Students will pay any applicable lab or related fees at the host institution. This policy applies only if the course is not available at the University of Dayton, space in the course is available, and pertains only to regular sessions of the academic year. The student also is required to have advisor's permission, must satisfy all course prerequisites, and must meet the host institution's admissions requirements. For more information go to www.soche.org. (<http://www.soche.org>)

The consortium of 22 colleges and universities was established to promote inter-institutional cooperation and community service. SOCHE holds regular conferences for faculty and staff, serves as a clearinghouse for the exchange of information, and promotes projects of educational research and experimentation. Many cooperation programs exist in:

- Teaching
- Research
- Publishing
- College finance and administration
- Other areas

Consortium member schools include:

- Air Force Institute of Technology
- Antioch College
- Antioch University Midwest
- Cedarville University
- Central Michigan University
- Central State University
- Clark State Community College
- Edison State Community College
- Kettering College of Medical Arts
- The Kettering Foundation
- Miami-Jacobs College
- Miami University-Middletown
- Miami University Regionals
- Sinclair Community College
- Southern State Community College
- United Theological Seminary
- Union Institute & University
- University of Dayton
- Urbana University
- Wilberforce University
- Wilmington College
- Wittenberg University
- Wright State University

Student Life and Services

At the University of Dayton, you're not alone. And not just because you'll make friends at every turn, but because our faculty, staff and community are eager to help you along your path. To guide you, advise you and even help you land a job after graduation.

As a Catholic, Marianist institution, our educational philosophy addresses the needs of the whole person: mind, body and spirit. And you'll find a plethora of offices are here to support you every step of the way.

Affirmative Action Office

As an integral part of the Office of Legal Affairs, the Office of Compliance and Affirmative Action, in St. Mary's Hall, Room 400, provides services to all employees. The Affirmative Action Officer/Staff Attorney is the University's compliance officer for Affirmative Action/Equal Employment Opportunity (AA/EEO), Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendment of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, Section 402 of the Vietnam Era Veterans Readjustment Assistance Act of 1974, and the Age Discrimination Act of 1975.

Campus Ministry

Faith formation and reflective religious dialogue play important roles in the education and development of the whole person at the University of Dayton. As a primary agent in faith formation at UD, Campus Ministry, inspired by the University's Marianist tradition, forms persons and communities in a lived faith, expressed in worship, in challenging and compassionate relationships, and in commitment to justice and service.

With thirty staff persons and a wide variety of programs, UD has one of the largest and most active campus ministry programs anywhere.

Informed by the Roman Catholic Tradition, the vast majority of our programs appeal to students from different Christian backgrounds and those of other faiths. A full-time protestant campus minister serves as a part of the campus ministry team. Campus Ministry also connects students from other faith traditions to their respective faith communities off campus. A number of independent, religiously based student organizations exist on campus. Together, these provide a range of options and opportunities for students to be a part of a faith community during their time at UD.

Our primary activities for students are outlined below.

Residence Life Ministry

Each residential area has campus ministers who actively engage students in faith based activities. Student leaders guide participation in activities such as faith sharing groups, bible studies, retreats, Mass, service and social opportunities, and other prayer experiences. In these and other ways, campus ministry is able to accompany, encourage and support students in areas of leadership, personal growth, and spiritual development.

Center for Social Concern

Campus Ministry's Center for Social Concern is committed to faith-based social justice education, including direct service to the poor and marginalized, work on behalf of social justice and changing unjust structures in society that oppress and marginalize human beings. The Center for Social Concern provide regular BreakOut Trips, Summer Immersion Trips, and the Summer Appalachia Program, offer opportunities for service and justice education in domestic and international settings. Guest speakers and a number of other activities also contribute to these goals. At the heart of it all is a wide array of opportunities to reflect on the service and justice work in the context of faith.

Retreats and Faith Communities

Over twenty retreats are offered each year for UD students. The retreats vary in size, style, theme, and focus to provide opportunities for faith development in many ways. There are quiet relaxing guided retreats, wilderness retreats, retreats specifically for first-year students and graduate students, large community focused retreats, interdenominational retreats, and more that foster faith development through activities, discussion, and prayer. Most retreats are led by student teams who prepare through weekly meetings.

Students also join small Christian communities called PORCH. These student led groups meet regularly and focus in unique ways including faith sharing, scripture study, and theological reflection.

Campus Ministry's Program for Christian Leadership offers Callings, a pre-orientation experience for incoming first year students focused on fostering faith, vocation, and leadership for new UD students as well as PORCH communities, retreat and leadership experiences.

Liturgies and Prayer

Students, faculty, and staff are active in the liturgical life of the University as lectors, Eucharistic ministers, music ministers, Mass coordinators, and hospitality ministers at both daily and Sunday celebrations of the Eucharist. The sacrament of Reconciliation and Eucharistic adoration are scheduled regularly, and during the seasons of Advent and Lent, sung weekly Vespers are offered along with communal Reconciliation services. An interdenominational Christian worship service is held every Sunday

during the academic year. Other opportunities for worship are available in the local community.

Campus Recreation

The Department of Campus Recreation is located on the "M" level of the RecPlex. The RecPlex, which opened in January 2006, houses a state of the art recreation facility. Full time undergraduate students, as part of their basic university fee, are eligible to use the RecPlex with their UD student ID. The facility may be used by graduate students who purchase a RecPlex Membership. Highlights of the building include:

- Main Gym with four full sized wood court basketball courts and three racquetball courts, one of which can be converted for squash.
- MAC Gym with two rubberized courts surrounded by a professional grade dasher board system adequately sized to play a variety of sports including tennis, indoor soccer, basketball, volleyball, and floor hockey.
- Aquatic Center with a 25 yard eight lane lap pool, four foot deep vortex leisure pool, diving well, and an eight-person spa.
- Fitness Studios A, B, and C which are used for a variety of instructional and group fitness classes.
- 10,000 sq. ft. Fitness Floor is home to 80 cardio machines and 70 strength training stations.
- Wellness Assessment Lab from which services such as athletic training, massage, and personal training consultation are offered.
- Four lane 1/8 of a mile rubberized jogging track.

Campus Recreation is excited to feature a new 5+ acre outdoor facility due to the installation of an infill turf surface. This new resource matches the quality of the RecPlex and provides year round access and a consistent surface for sports programming.

Campus Recreation offers many programs and facilities for students, including:

- Intramural Sports
- Sport Clubs
- Aquatics
- Fitness Programs
- Climbing Wall
- Strength and Cardio Equipment

Campus Recreation provides a variety of intramural activities in which anyone can find exercise surrounded by a spirit of fun and competition which is uniquely enhanced by our Marianist values. Activities include:

- Softball
- Flag Football
- Indoor and Outdoor Soccer
- Volleyball
- Basketball
- Dodge-ball
- Bowling
- Racquetball
- Golf meet
- Wallyball
- Floor Hockey

All students are invited to participate; ability is not important, just the desire to play. Please contact us at udintramurals@udayton.edu.

Another popular feature of the Department of Campus Recreation is the Sports Club Program. Currently, there are 36 recognized sports clubs on campus. The Sports Club Program offers students the opportunity to participate in a highly organized activity, while at the same time learning and developing new skills. Anyone interested in joining a sport club or starting a new one is encouraged to come in and speak with the Assistant Director of Sport Clubs.

Schedules concerning open recreation hours and scheduled events may be secured from the Campus Recreation Office. For more information please visit <http://campus.udayton.edu/~recsport/> or call 229-2731.

Career Services

The University of Dayton Career Services is a team of dedicated, caring professionals committed to providing excellent career related-resources, programs, services, and opportunities that build confidence and job search skills. We serve as a connecting point between students, faculty, alumni, and employers in an increasingly diverse and globally influenced job market. We are a leader in career planning and preparation, balancing the latest technology with personal guidance in the Marianist tradition.

Career advisors are available to discuss:

- Major selection
- Career direction
- Job search strategies
- Resume critique
- Networking
- Graduate school strategies
- Interview tips

Practice interviews with a career advisor can be digitally recorded and evaluated upon request to prepare the student for actual interviews by company representatives. All students, including first year students, are encouraged to utilize the services available. Appointments may be made by calling (937) 229-2045.

The Hire a Flyer Network is available from the Career Services web site for students to access job listings, post resumes, and register for events such as workshops, career fairs, and on-campus interviews with employers. Students may also access the Alumni Career Network through Hire a Flyer.

Career Fairs are scheduled Fall and Spring semesters for all majors. These events provide an opportunity for employers, students, and alumni to meet and discuss job opportunities. Approximately 150 companies attend looking for internship, co-op, and full-time employees.

The on-campus recruiting program is open to all students and alumni. On-campus recruiting is held October-April each year.

In addition, Career Services offers other venues for students to interact with employers as well as mini-courses, workshops, and presentations on a wide variety of job search and career related topics.

Additional information is available online at <http://careers.udayton.edu>.

Center for International Programs

The Center for International Programs provides leadership, coordination, strategic planning, and administrative support for the internationalization of campus. In cooperation with other University departments and Dayton area organizations, the CIP operates programs and provides services

which enhance intercultural education at the University of Dayton. The CIP is part of Academic Affairs and Learning Initiatives, under the Office of the Provost. Our areas include:

Education Abroad

University study abroad programs including the CIP's Summer Study Abroad Programs are managed through the Office of Education Abroad. Additional resources are available through partner institutions and affiliate programs for semester and year-long study. The CIP works closely with other areas on campus, such as the Center for Social Concern and academic departments, to assist all students going abroad. Faculty and staff may also find support in developing and promoting educational trips abroad.

Exchanges and Partnerships

The University's international exchanges and partnerships are managed through the CIP. UD's partnerships with international universities and institutions benefit our students, faculty and staff through education abroad programs, semester and year-long exchange programs, research collaborations, and more.

International Student and Scholar Services

International Student and Scholar Services provides students and exchange visitors with immigration advising, workshops, orientation, academic and non-academic advising, as well as social and extracurricular activities. Services include support of international faculty and research scholars and their dependents. The ISSS staff works collaboratively with other departments and organizations to advance the University's commitment to building a global community.

Intensive English Program

The University's English as a Second Language program develops students' English skills in preparation for an undergraduate or graduate program or the work place. Course offerings include grammar, reading and writing, listening and speaking, TOEFL preparation, and pronunciation.

International Learning and Living Community (ILLC)

Upperclass undergraduate American and international students may select to live in an upperclass international community, located in an on-campus apartment building. Residents of the ILLC live together in four-person apartments and participate in activities that encourage intercultural dialogue and relationship building between students from a variety of cultural backgrounds.

World Exchange

The World Exchange (WEx) is a lounge and conference/work area located in Alumni Hall which fosters international interaction and partnership between internationally oriented student clubs, faculty, and staff. All members of the campus community are encouraged to utilize this space for meetings and other international exchanges.

Additionally, the Center for International Programs communicates with students, faculty, staff, and the surrounding community to promote international activities on campus and in the area.

Counseling Center

The main purpose of the Counseling Center is to assist students in self-development, including personal adjustment, career planning, and social skills building. All students in need of objective insights or merely "a listening ear" are encouraged to make use of the Center's services. No student's concern is too minor to explore. This is usually accomplished through one-to-one and group counseling, although there

are opportunities for workshops on certain topics, consultation, and outreach programming for student, faculty, and staff groups. The Center also provides career and personality testing services.

Because counseling often involves sensitive personal matters, discussions between counselors and students are strictly confidential. An exception occurs when students' problems become life threatening. The University and the student may enter into a contract to establish conditions regarding required treatment/assessment, if there is imminent danger. The student may decide to use the services offered by the University or to receive treatment elsewhere. In the latter case, periodic review by the University is required to confirm that contract conditions are met. For the welfare of the student, problems warranting treatment more intensive than the University can offer may require temporary medical withdrawal from the University. The student may be readmitted to the University upon acceptable completion of contract conditions. In life threatening circumstances, the University assumes the position that the parents or guardians of the student generally should be notified, and it will initiate such notification if the student has not done so within an appropriate time, refuses to do so, or is unable to do so. Other exceptions to confidentiality include a) receiving a court order, and b) when evidence suggests abuse or endangerment to a person under the age of 18 or over 60.

A one-time counseling fee charged to all matriculating undergraduate students, Law School students, and Graduate Assistants covers the cost of services by the Counseling Center while they are enrolled at the University. Non-Graduate Assistants, graduate students, and nonmatriculated undergraduate students pay charges on a fee-for-service basis. The International Association of Counseling Services, Inc, accredits the Center.

Dining Services

The University of Dayton Dining Services operates two full-service a la carte student dining facilities located in Kennedy Union, and Marycrest Complex, and two restaurants. Passports and The Grainary, located in the V.W. Kettering Residence Hall. The Emporium, a mini grocery store with a full service deli, is located in the Marianist Residence Hall, and Stuart's Landing, a convenience store, is located in Stuart Hall Complex. Dining Services also operates The Galley, a pretzel/ ice cream/ gourmet coffee shop located in Kennedy Union, and The Chill, a juice bar with healthy snack options, located in The RecPlex. All students living in Marycrest, Stuart, Founders, Marianist, and Virginia Kettering Residence Halls are required to purchase a meal plan. Meal plan options are as follows:

- Limited 15 and Limited 21 Plans- These structured meal plans have spending allowance associated with them during specific meal periods. If you don't spend the entire allowance for that meal, you lost it. These plans start with lunch the day before the first day of classes.

Note: Only one block of funds may be used during each meal period. For example, two blocks may not be used during the lunch meal period on the same day.

- The Silver, Gold and Platinum Plans- These are debit style meal plans and provide complete flexibility, with no specific meal periods and now spending allowances.

Note: There are no refunds on debit plan balances, however, 50% of balances remaining at the end of each semester (after any bonus dollars are deducted) will roll over to the next semester up to a maximum of \$300.

All students living in residence halls must have one of the following:

- Limited 15 Plan (15 blocks per week) \$2,035.00
- Limited 21 Plan (3 blocks per day, 7 days) \$2,180.00
- The Silver Plan (debit account) \$1,950.00
- The Gold Plan (debit account) \$2,210.00
- The Platinum Plan (debit account) \$2,360.00

When a student does not choose a meal plan the default plan is the Silver Plan.

Non-resident students may purchase a Neighborhood meal plan (debit account).

For more information on meal plans, please visit <http://dining.udayton.edu>.

FlyerCard

The FlyerCard is the official photo identification card at the University of Dayton. Your FlyerCard must be presented for purchases using your FlyerCard account(s), admission to the RecPlex, library services, and building access.

Your FlyerCard can be used as a form of payment for food, textbooks, supplies, laundry, printing, and other essential services. It is safe, fast, and convenient to use. You can view your transactions and the balance of your accounts by choosing the "My Account" link at <https://flyerexpress.udayton.edu/>.

To get your FlyerCard, stop by the Campus Card Services office located in room 102 of the Powerhouse. The first FlyerCard received is issued at no charge. All students must be registered for classes before receiving their card. Visit the FlyerCard website <http://FlyerCard.udayton.edu/> for a detailed view of the FlyerCard program.

Flyer Express

Flyer Express is a declining-balance prepaid account accessed with your FlyerCard. It is the convenient way to pay for products and services on and off campus. Your Flyer Express account eliminates the need to carry cash and saves you the hassle of searching for correct change. Flyer Express has you covered with whatever you need, 24 hours a day, 365 days a year. It is safe, fast, and convenient to use. The money in your Flyer Express account is carried over from one semester to the next and from year to year.

The Card Services office offers you multiple options to deposit funds into your account.

- Online at <https://flyerexpress.udayton.edu/AddFlyer.aspx>
- Phone: (937) 229-2456 or 1-800-259-8864 (option 4)
- In person at the Campus Card Services office in the Powerhouse or the Bursar's office in St. Mary's Hall
- At kiosks located in all Dining Services locations and the Roesch Library.

Flyer Express is accepted at:

- All Dining Service locations
- Art Street Cafe
- UD Bookstore
- Residence Hall laundry
- Campus Copy Center

- Selected vending areas
- The Hangar
- The Galley
- Stuart's Landing
- Campus Computer Store
- Roesch Library
- Post Office
- The Chill
- KU Box Office
- The Blend
- The Blend Express
- Selected off campus businesses.

Flyer Express is used to pay for printing in the Library and many computer labs. Visit the FlyerCard website <http://FlyerCard.udayton.edu/> for a current listing of off campus vendors that accept Flyer Express.

Health Center

Medical care is available at the Health Center to all full-time and part-time undergraduate, graduate, and law students. During the academic year, the Health Center is open from 8:30 a.m. to 5:30 p.m. on weekdays, except University holidays. A physician is available for consultation every weekday morning and afternoon throughout the year, except University holidays. Summer hours are 8:30 a.m. to 4:30 p.m. with limited physician hours. Students should call the Health Center to schedule an appointment at 93131 or (937) 229-3131. In case of emergency, call Public Safety, (937) 229-2121.

Pre-admission physical examinations are not required, but students with chronic health problems are advised to have their physicians send records or recommendations to the medical director. Every student born after 1955 is required to show evidence of immunity to measles, mumps, and rubella. All students are required to fill out a tuberculosis screening. Students living in on-campus housing also have specific requirements for meningitis and hepatitis B vaccines, specified by Ohio law. A link to the Health Requirements form is located on the Health Center website at <http://www.udayton.edu/studev/healthcenter/index.php#5>.

Undergraduate and law students pay a Basic University Fee, which covers the cost of services at the Health Center. Graduate and IEP students, who do not pay this fee, are charged for services received at the Health Center. The charge for a physician visit ranges from \$45 to \$75, depending on the length of the visit and the type of services provided. Charges are made for all students for medicines dispensed, allergy injections, laboratory tests, and x-ray examinations.

All charges incurred at the Student Health Center are reported to the Bursar to be entered on the student's account with the University. Inquiries regarding bills or University-sponsored insurance should be made at the Health Center between 9:00 a.m. and 3:00 p.m. weekdays. Itemized statements can be provided upon patient request. These are not automatic and the Health Center does not bill outside insurance companies directly, however students should bring a copy of their health insurance/pharmacy cards to each visit.

Full-time graduate and law students (6 hours or more) and undergraduates students are eligible for University-sponsored health and accident insurance. For information about this program, visit the Health Center, or call (937) 229-3131.

International Student and Scholar Services Office

The International Student and Scholar Services Office provides students and exchange visitors with immigration advising, workshops, orientation, academic and non-academic advising, as well as social and extracurricular activities. ISSS extends its services and support to international faculty and research scholars and their dependents. The ISSS works collaboratively with other departments and organizations to advance the University's commitment to building a global community.

ISSS also presents Bridges, the international student orientation, every August, January, and May. All international students new to the University of Dayton must attend. During Bridges, ISSS assigns immigration check-in times to students. Completing immigration check-in is vital to maintaining F-1/J-1 status. All new undergraduate international students are also required to attend the University's New Student Orientation, for all new undergraduate students.

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).

Public Safety

The Department of Public Safety seeks to provide a safe and secure environment for the entire University of Dayton community, which includes the students, faculty, staff, and visitors. The department provides police, parking, and emergency medical services to the U.D. campus community. The Student Cadet program is also operated by Public Safety. Public Safety offices are located on the ground floor of College Park Center at 1529 Brown St.

Police

Police operations include enforcement of laws and campus regulations, criminal investigation, crime prevention, and providing for the physical security of University of Dayton property and interests. The department has primary jurisdiction for law enforcement and criminal investigation on all University of Dayton owned or controlled property, and all public property within the defined campus boundaries according to the mutual aid agreement with the City of Dayton Police Department. Police officers are all graduates of the Basic Police Academy and are sworn law enforcement officers, the same as their municipal counterparts. All full time police officers are required to maintain certification to provide emergency medical services to the campus community.

Emergency assistance is available 24 hours per day, seven days a week. Call 911 in the event of an emergency, or 229-2121 for all other assistance. (Non UD Network Phones will call the City of Dayton Police & Fire Departments when dialing 911.)

Parking Services

Parking Services is responsible for management of the University's more than 5,500 parking spaces located in over 50 parking lots, and with enforcement of parking regulations. Lots are patrolled daily by Parking

Services Representatives, who issue citations to violators. The following information applies to student parking.

- Campus parking facilities are extremely limited. We recommend you determine parking availability before bringing a vehicle to campus, as on street parking is also severely restricted in the vicinity of campus.
- All vehicles parked on University of Dayton property must have a valid parking permit displayed, except during open parking hours.
- First-Year residential students will NOT be permitted to bring vehicles to campus.
- Graduate/law students and graduate assistants will be sold student parking permits.
- Commuting students will be sold permits for Lot S1.
- Students living in landlord housing within one mile of campus will be sold resident student permits.
- Resident student parking priority will be given to upper class students with the highest priority being given to students with disabilities, internships, co-op, or senior education majors.
- Information concerning permit sales will be disseminated to students annually.
- All students are required to apply online through the parking website at www.udayton.edu/~safety/parking.
- Evening students are sold N (night) permits, which are valid in Lot B at 4:15 p.m., Lots A, C, P, and S1 at 4:00 p.m. and anytime during weekends in any campus parking lot except those marked with a double letter. N (night) permits will be honored in Lot S1 anytime during the summer sessions.
- Students may contact Parking Services at (937) 229-2128, M-F 8:00 a.m.-4:30 p.m. or at parking@notes.udayton.edu.

Rescue Squad

The Department of Public Safety also provides around the clock emergency medical services, primarily through the support of the University of Dayton Student Volunteer Rescue Squad. The Student Volunteer Rescue Squad is comprised of full-time undergraduate students who receive their training and equipment from the Department of Public Safety. All UD Student Rescue Squad members are nationally registered EMT-Bs and volunteer their time to serve the community.

Student Cadet Program

The Student Cadet Program consists of part-time student employees who operate the Student Escort Service through the Department of Public Safety. The Student Escort Service is a program that provides free transportation for students within the campus community with a focus on crime prevention.

Residence Life Residence Coordinator

The Department of Residence Life seeks to intentionally engage students in the integration of a strong liberal arts education with their development as citizens and lifelong learners. The department offers graduate assistantships, as residence coordinators, in a variety of residential areas to help accomplish this effort.

A student must be accepted into a graduate program to be eligible for a residence coordinator position. For more information, please call 937-229-3321. Remuneration includes stipend, room, board, tuition remission, and a health insurance option. Submit applications and resumes to:

Department of Residence Life
206 Gosiger Hall
Dayton, Ohio 45469-0965

Residential Living

The University of Dayton maintains a limited number of diverse housing units for graduate students. There are approximately 64 spaces for first-year law students in University housing. Housing needs of upper-class law and graduate students also may be accommodated on a space-available basis. Graduate and law students interested in University housing should contact Residence Life at 937-229-3317 upon their acceptance.

Students are advised to coordinate their housing arrangements as early as possible. If University housing is not available, information can be provided regarding private housing in the Dayton area.

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 also provides useful information on such subjects as University services, student organizations, and resource numbers.

The entire Student Handbook is available at the website: <http://www.udayton.edu/~studev/studenthandbook>.

All Student Handbook information provided on the website may be printed from personal computers and printers.

The "University of Dayton Student Standards of Behavior" section of the the Student Handbook is printed in booklet form and distributed to all residents of UD owned housing facilities. The handbook is also available at the Kennedy Union Information Desk for students living in other residences.

Changes in disciplinary policies and procedures made during an academic year will be announced to the student population via campus e-mail. Informing students of policy and procedure changes via campus e-mail is considered official notification. The website version of the Student Handbook will be updated upon implementation of said change.

Student Life and Kennedy Union

A variety of cultural, educational, social, and recreational activities are presented in the Union regularly to enrich and enhance academic life and foster a spirit of community. In addition, this office provides support, direction, and programming opportunities for students and officially recognized student organizations. Activities in the union include game shows, trivia contests, movie nights, concerts, theatrical productions, lectures, dance ensembles, and recitals by students and faculty members. Meeting rooms, a ballroom, Boll Theatre, and University vans are available for use and can be reserved by calling 229-3333 (Kennedy Union Room 241). Information about student organizations can also be found at go.udayton.edu/slku or by calling 937-229-3333 (Kennedy Union Room 241).

The John F. Kennedy Memorial Union, centrally located on the campus, offers comfortable surroundings and a variety of services for the University community. Lounges provide space for discussion, studying, and socializing. The Hangar games room on the ground-floor includes bowling lanes, pool tables, lounge space, a cafe, and video games. The ground-floor food court includes a full-service deli, pizza, southwest

cuisine, daily specials, grill favorites, and desserts. Automatic teller machines, display cases, and vending machines are housed in the Union, as are student offices for the Campus Activities Board, Christmas on Campus, Daytonian Yearbook, Flyer News, Flyer TV, Orpheus literary magazine, Student Government Association, and a lounge for commuter students. Also in the union are the Information Center, Box Office, KU Dining Services, Catering Services, and the travel agency.

Student Life and Kennedy Union is responsible for registering all student organization-sponsored events, granting recognition to all student organizations, providing assistance for organization advisers, publicity approval, programming the Flyer TV information channel, and coordinating campus-wide events. The office works directly with commuter students, Student Government Association, IFC, NPC, NPHC, Flyer News, Flyer Radio, Daytonian Yearbook, Orpheus, Campus Activities Board, the Charity Concert Committee, Christmas on Campus, and all recognized student organizations.

Women's Center

The Women's Center at the University of Dayton (937-229-5390) is an educational space which serves to enhance the climate for women and men on campus. Located on the second floor of Alumni Hall, the Center, which includes a Resource Center, gallery space, and several reservable rooms, advances the full and active participation of women students, staff and faculty who learn and work at the University of Dayton, while promoting campus and community conversations on the role of women in society and the world. The Center accomplishes this mission by facilitating and coordinating programs and initiatives which: promote the physical and psychological well being of women through education, support services and referral; provide an ongoing assessment of the campus climate for women; promote the active and full participation of UD women through service, education, mentoring, networking, and advocacy; inculcate leadership skills; address gender-related topics; provide information to the campus community on women's issues; provide a place to build a community of scholarship to advance research on women and gender; create a welcoming and safe space for persons of different racial, social, gender, religious, and cultural backgrounds; call women and men of all faiths to explore and incorporate faith-based living into their everyday lives. Connected, distinctive, and community-building, the UD Women's Center strives to promote equality, understanding, and mutual respect and to foster a strong educational community in which women and men are supported, challenged, and prepared to learn, lead, and serve. For more information on the UD Women's Center, visit <http://womenscenter.udayton.edu>.

Admission

Choosing which college to attend is a huge endeavor, and it all begins with the application process.

Learn all about ours so your next big decision can be an informed one.

Admission-Graduate

Pursuing an advanced graduate or professional degree is a significant commitment. You want to make sure the program matches your academic and career goals and that the campus is a good fit. If you can see yourself tackling graduate work at the University of Dayton, we invite you to search deeper. All it takes to apply is a simple click.

All 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.

The application for admission to graduate work, available on-line at <http://gradadmission.udayton.edu/application>, 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 chairs.

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

1. **Regular status**-the student has met satisfactorily all the general requirements of the College or School and the specific requirements of the department in which the program is offered.
2. **Conditional status**-the student must fulfill some prerequisite imposed by the school or department before admission to regular status, or the student's preparation cannot yet be determined.
3. **Non-degree status**-the student belonging to either of these categories:
 - the student will not be officially enrolled in a graduate program leading toward a degree
 - the student fulfills all the requirements and is taking courses for credit but is not seeking a degree.
4. **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.

Financial Information

The University of Dayton is one of the most affordable private, Catholic schools in the country and, among comparable universities, it is an excellent value. Our graduates possess the independence, skill sets, knowledge and values preparing them for success in an ever-changing world.

Financial Information-Graduate

The first thing you'll discover is how affordable a top graduate education can be. Our programs are competitively priced, and our reputation for quality and academic excellence is nationally known.

Assistantships and Fellowships

A limited number of graduate assistantships are available in the College of Arts and Sciences and the Schools of Business, Education & Allied Professions, and Engineering. These carry a stipend plus tuition remission for courses required in that degree. Graduate summer fellowships for research and creative activities during the third term 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 chair or director of the desired graduate program.

Cancellations and Refunds

If registration is cancelled before the first day of classes, full tuition refunds will be made with the exception of the admission deposit. Housing refunds will be made in accordance with the terms of the "Student Housing Contract".

Cancellations will be allowed only after the completion of proper drop/add procedures. Students who do not attend classes and do not officially complete withdrawal procedures during the cancellation period will be responsible for the full amount of the applicable tuition and fees.

Detailed housing cancellation information can be found at the Residential Services website at <http://housing.udayton.edu>

During the four-week cancellation period for the first and second terms, tuition and housing credits will be given according to the following schedule:

- During first week of classes 80%
- During second week of classes 60%
- During third week of classes 40%
- During fourth week of classes 25%
- During or after fifth week of classes 0%

(The 1st week starts on the first day of a term; the 2nd week begins 7 days later, etc.)

Lab fees, Engineering surcharge and special course fees are 100% refundable for the first week of class during Fall and Spring term. Therefore, they are refundable on the same schedule as tuition.

During the two-week cancellation period for each six-week session of the split third term, tuition and housing credits will be given according to the following schedule:

- During first week of classes 65%
- During second week of classes 30%
- During or after third week of classes 0%

Cancellations for a full third term course have a four-week cancellation period and will be on the same schedule as cancellations for the first and second terms.

Financial adjustments for tuition are based on the date the drop (withdrawal) form is finalized in registration.

Financial adjustments for housing (please refer to your housing contract) are based on the date of checkout from housing, if applicable.

In a summer term, lab fees, Engineering surcharge and special course fees are 100% refundable through the first three days of the term. Therefore, they are refundable on the same schedule as tuition.

Special rules may apply for students who withdraw and who received Title IV funds. Please contact the Office of Financial Aid if additional information is needed.

After classes have begun, the University fee for student activities is not refundable. All tuition refund requests and appeals must be in writing and directed to the attention of David J. Necessary-Director of Student Accounts/Bursar.

Students suspended/dismissed from the University or from University residence facilities as a result of disciplinary action are not eligible for any refund of tuition and fees or room and board charges under the

University's Cancellation and Refund policy. Exceptions to this position will be made to comply with refund requirements of federal financial aid programs.

General Policy

The tuition and fee charges of the University are set at the minimum permissible for financially responsible operation, and in general these charges are less than the actual costs incurred. Gifts and grants received through the generosity of industry, friends, and alumni help to bridge the difference between income and costs. The trustees of the University reserve the right to change the regulations concerning the adjustment of tuition and fees at any time the need arises and to make whatever changes in the curricula they may deem advisable.

Tuition, fees, room and board may be paid in full before the term begins or in accordance with payment terms for the fall and spring semesters. Late registration fees are assessed when scheduling and registration are completed after the start of the term.

All checks should be made payable to the UNIVERSITY OF DAYTON. The student's name and student identification number should be shown on the face of each check to insure proper credit.

An assessment of \$25.00 + 1% of the check amount will be made for payment of tuition and fees by a bad check or for any other returned check from any area at the University. This assessment is made each time a check is dishonored.

Registration for a new term, transcripts of credit, and honors of graduation may be permitted only for students whose financial University records are clear.

Tuition and Fees

Undergraduate per semester hour	\$957.00
Graduate per semester hour (Arts & Sciences and Engineering)	\$729.00
Graduate per semester hour (SBA/ MBA)	\$793.00
Doctoral per semester hour (including Engineering)	\$829.00
Doctoral per semester hour (Religious Studies)	\$624.00
Religious Studies per semester hour (Fall and Winter)	\$550.00
Religious Studies per semester hour (Summer 2010 only)	\$349.00
MPA per semester hour	\$511.00
English (Teaching track only) per semester hour	\$511.00
Engineering Management/ Management Science per semester hour	\$729.00
School of Education and Allied Professions (SOEAP)	
On and Off campus per semester hour	\$499.00
Educational Specialist per semester hour	\$625.00

Doctoral per semester hour (Education majors only)	\$675.00
Undergraduate credit for Education Licensure Programs per semester hour	\$601.00
Student Teaching per semester hour	\$212.00
Online courses for full-time Catholic Educators and Credit/No credit workshops per semester hour	\$250.00
Doctor of Physical Therapy (DPT) tuition	\$8850.00
DPT Rec Plex fee (one fall semester charge per year)	\$565.00

Miscellaneous Fees

Application Fee (international students only)	\$50.00
Credit by Examination per semester hour	\$35.00
Late registration fee per week (maximum \$75.00)	\$25.00
Lab fees per clock hour (maximum \$325.00)	\$65.00
University Fee	\$25.00
Graduation Fee (includes Doctoral)	\$90.00

Audit Rates

Undergraduate per semester hour	\$479.00
Graduate per semester hour (Arts & Sciences and Engineering)	\$365.00
Graduate per semester hour (SBA/ MBA)	\$397.00
Doctoral per semester hour (including Engineering)	\$415.00
Doctoral per semester hour (Religious Studies)	\$312.00
Religious Studies per semester hour (Fall and Winter)	\$275.00
Religious Studies per semester hour (Summer 2010 only)	\$175.00
MPA per semester hour	\$256.00
English (Teaching track only) per semester hour	\$256.00
SOEAP On and Off campus per semester hour	\$250.00
SOEAP Educational Specialist per semester hour	\$313.00
SOEAP Doctoral per semester hour	\$338.00
SOEAP Undergraduate credit for Education Licensure Programs per semester hour	\$301.00

Special fees are charged where applicable. Students receiving authorizations paying a portion of their tuition must pay the balance plus any additional fees.

An assessment of \$25.00 plus 1% of the amount of the check will be made for payment of tuition and fees by a bad check. Cancellation of the student's registration may result until proper payment is made of tuition, fees, and special assessments.

Subject to change. The University reserves the right to make changes in its tuition and fees for any or all graduate courses at any time. Current information should be obtained from course composites, by contacting the department in which the course is offered, the Office for Graduate Applications & Records, or the Registrar's Office.

Tuition Remission for UD Full-time Employees

Full-time benefit-eligible employees, when admitted in accordance with University of Dayton admission standards, are eligible for tuition remission benefits. Eligible employees receive 100% remission for both graduate and undergraduate classes for themselves. Any fees associated with a specific class or degree program are the responsibility of the employee.

Academic Information

In this section, you can locate specifics on various academic areas/units.

Academic Information-Graduate

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 and certificates 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 Computer Science
- Master of Financial Mathematics
- Master of Laws
- Master of Mathematics Education
- Master of Public Administration
- Master of Science
- Master of Science in Aerospace Engineering
- Master of Science in Applied Mathematics
- Master of Science in Chemical Engineering
- Master of Science in Civil Engineering
- Master of Science in Education and Allied Professions
- 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 Engineering Mechanics
- Master of Science in Management Science
- Master of Science in Materials Engineering
- Master of Science in Mechanical Engineering
- Master of Science in Renewable and Clean Energy
- Master in the Study of Law
- Educational Specialist
- Juris Doctor
- Doctor of Engineering
- Doctor of Philosophy in Biology
- Doctor of Philosophy in Educational Leadership
- Doctor of Philosophy in Electro-Optics
- Doctor of Philosophy in Engineering
- Doctor of Philosophy in Theology
- Doctor of Physical Therapy

The University of Dayton also awards graduate-level certificates in the following areas:

- Computational Finance
- Early Childhood Leadership
- Financial Risk Management
- Geographic Information Systems
- Literacy Specialist
- Pastoral Care
- Pastoral Counseling for Enhancement
- Six Sigma
- Statistical Finance
- Systems Engineering

Other certificates may be issued by individual academic units or departments.

Academic Honor Code

I. Introduction

As a Marianist, Catholic university committed to the education of the whole person, The University of Dayton expects all members of the academic community to strive for excellence in scholarship and in character. As stated in the University's Student Handbook, "The University of Dayton expects its faculty and administration to be instrumental in creating an environment in which its students can develop personal integrity."

To uphold this tradition, the University community has established an academic honor code for all of its students, except Law students who are governed by The University of Dayton School of Law Honor Code. Students are expected to be aware of and abide by the honor codes.

II. The Honor Pledge

[The University of Dayton Academic Honor Code: A Commitment to Academic Integrity](#)

I understand that as a student of the University of Dayton, I am a member of our academic and social community, I recognize the importance of my education and the value of experiencing life in such an integrated community, I believe that the value of my education and degree is

critically dependent upon the academic integrity of the University community, and so

In order to maintain our academic integrity, I pledge to:

- Complete all assignments and examinations according to the guidelines provided to me by my instructors,*

- Avoid plagiarism and any other form of misrepresenting someone else's work as my own,

- Adhere to the Standards of Conduct as outlined in the Academic Honor Code.

In doing this, I hold myself and my community to a higher standard of excellence, and set an example for my peers to follow. Instructors shall make known, within the course syllabus, the expectations for completing assignments and examinations at the beginning of each semester. Instructors shall discuss these expectations with students in a manner appropriate for each course.

* The term instructor may refer to any faculty or staff member

III. Standards of Conduct

Regardless of motive, student conduct that is academically dishonest, evidences lack of academic integrity or trustworthiness, or unfairly impinges upon the intellectual rights and privileges of others is prohibited. A non-exhaustive list of prohibited conduct includes:

A. Cheating on Exams and Other Assignments

Cheating on examinations consists of willfully copying or attempting to consult a notebook, textbook, or any other source of information not authorized by the instructor; willfully aiding, receiving aid, or attempting to aid or receive aid from another student during an examination; obtaining or attempting to obtain copies of any part of an examination (without permission of the instructor) before it is given; having another person take the exam; or any act which violates or attempts to violate the stated conditions of an examination. Cheating on an assignment consists of willfully copying or attempting to copy all or part of another student's assignment or having someone else complete the assignment when class assignments are such that students are expected to complete the assignment on their own. It is the responsibility of the student to consult with the instructor concerning what constitutes permissible collaboration and what materials are allowed to be consulted.

B. Committing Plagiarism and Using False Citations

Plagiarism consists of quoting or copying directly from any source of material without appropriately citing the source and identifying the quoted material; knowingly citing an incorrect or fabricated source; or using ideas (i.e. material other than information that is common knowledge) from any source of material without citing the source and identifying the borrowed material. Students are responsible for educating themselves as to the proper mode of attributing credit in any course or field. Instructors may use various methods to assess the originality of students' work, such as plagiarism detection software.

C. Submitting Work for Multiple Purposes

Students are not permitted to submit their own or other's work (in identical or similar form) for multiple purposes without the prior and explicit approval in writing of all instructors to whom the work will be submitted. This includes work first produced in connection with classes at the University of Dayton as well as other institutions attended by the student or at places of employment.

D. Submitting False Data or Deceptive Information

The submission of false data is a form of academic fraud. False data is that which has been fabricated, altered, or contrived in such a way as to be deliberately misleading or to fit expected results. Deception is defined as any dishonest attempt to avoid taking examinations or submitting assignments at the scheduled times by means such as a forged medical certification of absence. Deception also includes falsifying class attendance records or failing to reveal that someone falsified your attendance. Extenuating circumstances such as a personal illness, death in the family, etc. must be negotiated with the instructor.

E. Falsifying Academic Documentation and Grade Alteration

Any attempt to forge or alter academic documentation (including transcripts, letters of recommendation, certificates of enrollment or good standing, and registration forms) concerning oneself or others also constitutes academic fraud. Grade alteration consists of an act which dishonestly modifies a grade obtained for a class assignment, examination, or for the course itself.

F. Abuse of Library Privileges and Shared Electronic Media

All attempts to deprive others of equal access to any library materials constitute a violation of academic integrity. This includes the sequestering of library materials for the use of an individual or group; a willful or repeated failure to respond to recall notices; and the removal or attempt to remove library materials from any University library without authorization. Defacing, theft, or destruction of books, articles or any other library materials that serve to deprive others of equal access to these materials also constitute a violation of academic integrity. Malicious actions that deprive others of equal access to shared electronic media used for academic purposes constitute a violation of the Honor Code. This includes efforts that result in the damage or sabotage of campus computer systems.

G. Encouragement or Tolerance of Academic Dishonesty

The quality of campus and community life is dependent upon the commitment of each member of the University to a shared set of behavioral standards and values. Adhering to the Academic Honor Code is not limited to direct actions, but also includes any behavior that supports, encourages, or tolerates academic dishonesty.

IV. Student Status with Respect to the Academic Honor Code

A. All University of Dayton students, except for Law students who are governed by The University of Dayton School of Law Honor Code, are subject to the Standards of Conduct and procedures of the Academic Honor Code

B. Normally, the maximum penalty for a single proven case of academic dishonesty is an F in the course. No provision can then be made for the student to receive a W. Under some circumstances, such as repeated offenses, theft, intimidation, or breaking and entering, additional penalties may be imposed by the University. These penalties may include dismissal from the major, dismissal from the school or college, removal from the University Honors Program, or dismissal from the University.

C. All honor code violations, as determined by the instructor after consultation with the student, require that the chair of the department or program director in which the incident occurred be notified of the violation by the instructor. If a student accepts the instructor's accusation and/or penalty, the case will be considered resolved and no further action shall be required. The instructor shall send an Academic Dishonesty Incident Report form to the dean(s) of the student's academic unit(s) – possible double major. If a student does not admit the violation or accept the proposed penalty, the student may contact the chair or program director in which the incident occurred and initiate an appeal process as outlined

in Section V. If the appeal is decided in favor of the student, no report will be placed in the student's file. If during the appeal process the student is found responsible, the report will be placed in the dean(s)' offices of the student's academic unit(s) – possible double major. If the student transfers between academic units, all reports will be transferred to the new dean's office.

D. If a possible violation is reported after the grade for a course has been submitted, the case will be adjudicated only if the Office of the Provost determines that the alleged offense is of sufficient gravity to warrant consideration. Only matters that could reasonably result in sanctions reflected in a student's permanent record will ordinarily meet the "sufficient gravity" test in this context. The Office of the Provost shall decide on the process of adjudication

E. If a student with a possible violation withdraws, transfers, or is, for any reason, not currently enrolled at the University the University may maintain a continuing interest in, and complete the adjudication of the matter, if, in the judgment of the Office of the Provost, the matter is of sufficient gravity to warrant resolution. The Office of the Provost shall have the discretion to determine whether the adjudication will occur before or after the student's re-enrollment, and the process of adjudication.

F. A student may not graduate with an unresolved Academic Honor Code violation which, in the judgment of the Office of the Provost, is of sufficient gravity to warrant resolution. Certification for the degree will be withheld pending a final resolution of the Academic Honor Code matter. The Office of the Provost shall decide on the process of adjudication

G. If a violation is reported after a student has graduated, transferred, or otherwise terminated his or her enrollment at the University, the case will be adjudicated only if the Office of the Provost determines that the case is of sufficient gravity to warrant consideration. The Office of the Provost shall decide on the process of adjudication. In a case involving a student who has already received a degree, sanctions up to and including the revocation of a degree or certificate are possible. The Office of the Provost has the final authority to revise and implement any sanctions.

V. Appeal Procedure

A student who believes an accusation of academic honor code violation or penalty is not valid may appeal in the sequential manner listed below. If the student does not appeal the decision of the instructor, or accepts the accusation and penalty at any time during the appeal process, the Academic Dishonesty Incident Report form shall be sent to the student's dean(s) by the instructor.

A. If no resolution occurs in the private conversation with the instructor, the student may appeal to the department chair or program director in which the incident occurred. The student must submit a written account, including a detailed explanation of their actions, along with any circumstances concerning the incident. This appeal must be made within ten business days after meeting with the instructor. The chair may use reasonable means, including meeting with the instructor and student, to reach a determination on the accusation and/or penalty within thirty business days.

B. If no resolution occurs with the department chair or program director, the student has ten business days to file a written appeal to a review committee formed by the department chair or program director in which the incident occurred. The review committee shall be composed of at least two tenured faculty and one student. The review committee will first select a chair, and then meet with the student and instructor involved on separate occasions and gather any additional evidence or information related to this appeal. The student has the right to see and hear the

evidence, to question any witnesses against the student, and to present evidence and witnesses on the student's behalf. Both the student and the instructor must cooperate with the review committee. The review committee shall make known its recommendations and the reasons for its recommendations in writing to the department chair or program director, the student, and the instructor within thirty business days.

C. If the student or faculty member disagrees with the review committee's decision, either may then make an appeal to the dean of the unit in which the incident occurred. The dean must make known his or her decision, and reason(s), in writing to the student, the instructor, chair or program director, and department review committee within thirty business days.

D. A final appeal may be made to the Provost within ten business days after the dean's decision. The Provost must make known his or her decision, and reason(s), in writing to the student, the faculty member, chair or program director, dean, and review committee within thirty business calendar days. The final authority rests with the Provost.

Academic Dishonesty Incident Report (catalog.udayton.edu/generalinformation/academicinformation/graduate/academicdishonesty/Academic_Dishonesty_Incident_Report.pdf)

Academic Standards

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

A - Excellent: for each semester hour, 4.0 quality points are allowed

A- - For each semester hour 3.6667 quality points are allowed.

B+ - For each semester hour, 3.3333 quality points are allowed.

B - Good: for each semester hour, 3.0 quality points are allowed.

B- - For each semester hour, 2.6667 quality points are allowed.

C - Passing: for each semester hour, 2.0 quality points are allowed.

F - Failed: 0 quality points are assigned.

CR - Passed: Credit is awarded, but no corresponding quality points are given. This is used for all thesis and dissertation credits and for other special courses that do not affect the 3.0 cumulative quality point average needed to be in good standing.

I - Incomplete: To be used when a course has otherwise terminated but the student, for an acceptable reason, has not completed all the work for the course. The "I" has 0 quality points per hour and does not affect the cumulative quality point average. An "I" in a graduate course must be removed within one calendar year from the date listed on the grade report, or it will be changed to an "F" on the student's permanent record and the quality-point average adjusted accordingly. The time limit may be extended under exceptional circumstances, with the approval of the dean, if application for the extension is made within the one year period noted.

K - Credit: This mark is used only for credits accepted as transfer credit from other institutions. No quality points are allowed.

IP - In Progress: This designation is used in lieu of a grade for thesis/dissertation credits or other courses which have not terminated at the end of a semester. Upon completion of the thesis/dissertation all "IP" designations will be changed to "CR" in the student's permanent record. For other courses, appropriate letter grades will replace "IP" designations after the course is completed and the quality-point average will be adjusted accordingly.

N- No grade was reported by the instructor.

W - Withdrawal: Any withdrawal or change of course must be processed by an official Drop-Add Form through the Registration office, 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 academic division in which the student is registered. No quality points are allowed.

Academic Standing: A graduate student's academic standing is determined according to the cumulative quality-point average at the end of each term. In addition:

a) To be in good academic standing, a graduate student must maintain a cumulative quality-point average of at least 3.0 at all times. A cumulative quality-point average of at least 3.0 is also required for graduation.

b) Thesis and dissertation credits may only be assigned "IP" and "CR" grades and do not count toward the minimum quality-point average of 3.0.

c) A cumulative quality-point average below 3.0 will result in the student being placed on academic probation.

d) A graduate student on academic probation must complete a written academic recovery contract with his or her graduate program director which shall specify goals, expectations and a timeline for achieving good academic standing. This contract must specify the duration of the probationary period, which may not be shorter than one academic semester nor longer than one calendar year, and must be approved by the student's academic dean, or designee.

e) Students whose academic performance has seriously impaired their ability to succeed at the University of Dayton may be subject to academic dismissal by his or her academic dean, who authorizes the dismissal and notifies the student of his or her status. Graduate students who may be dismissed include:

1. those who fail to achieve good standing at the end of an agreed upon period of academic probation;
2. those who receive one or more grades of "F"; and,
3. those who have accumulated six or more semester hours of "C" grades, regardless of the cumulative quality-point average.

f) The Registrar will post *Academic Dismissal* on the permanent record of any student dismissed.

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.

Appeal for Change of Grade

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

Application

There are no application fees for domestic students. International students applying for admission are strongly encouraged to apply online; however, a paper application may be requested from the Office of Graduate Admission Processing if they are unable to complete an online application. For international students, there is a \$50 (U.S.) fee for submitted applications, and the application cannot be processed until the fee is received.

Official transcripts must be submitted directly from the registrars of all previously attended colleges or universities to the Office of Graduate Admission Processing. 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 the applicant's academic qualifications for the proposed field of study and returned to the Office of Graduate Admission Processing.

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.

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 Administration
- GRE: required by the Departments of Biology, Communication, Physical Therapy, Psychology, and Public Administration. The GRE is also required for the Ph.D. in Educational Leadership. Applicants to the School of Education and Allied Professions with a GPA below 2.75 are required to submit GRE or MAT test scores

All applicants for graduate assistantships should include a statement, not to exceed 1,000 words, describing academic preparation, vocational objectives, and particular interests in their field of study. Application deadlines vary by program and applications should be submitted directly to the department.

Bachelor's Plus Master's Programs

Bachelor's-Plus-Master's Programs

Approved Bachelor's-Plus-Master's (BPM) degree programs typically allow qualified students at the University of Dayton to earn both a B.S./B.A. and an M.S./M.A./MBA degree in an accelerated fashion, often enabling them to earn a master's degree with only twelve additional months of study subsequent to completing their baccalaureate degree. This is achieved in part through careful program coordination, and in many cases by allowing BPM undergraduates to take up to 6 credit hours of graduate coursework to simultaneously satisfy both undergraduate and graduate program requirements. While BPM programs are often referred to as "5-Year" programs, completing both degrees may in some cases require more than five years of study. The total period of study will be

influenced by several factors including whether or not a student changes undergraduate majors, participates in a co-op program, drops and re-takes multiple courses, or pursues a thesis option master's degree.

Interested undergraduates are encouraged to consult with their Department Chair or Dean to learn more about BPM programs that may be available to them.

Admission to the BPM Degree Program

Admission to a BPM program will typically occur during the first semester of the junior year. However, a student may be admitted anytime subsequent to completion of 60 semester hours of undergraduate coursework and prior to being awarded the baccalaureate degree. Admission to a BPM program requires a minimum cumulative undergraduate grade-point-average (GPA) of 3.00. Continued enrollment in the BPM program requires maintenance of an undergraduate cumulative GPA of at least 3.00 and, when applicable, a graduate GPA of at least 3.00 as well. Individual programs may require additional or more stringent criteria according to their needs (e.g., higher minimum GPA's, standards for performance within the undergraduate or graduate program, or the completion of specific coursework).

Admission to the Master's Degree Program

Subsequent to admission to a BPM program, students must also apply for admission to the master's program through the Office of Admission. This application must be completed prior to enrollment in more than six hours of coursework intended for credit at the graduate level.

Following review of the graduate program application, students who satisfy all standards for continued enrollment in the BPM program and who also meet all additional admission requirements that are normally associated with the intended master's program (e.g., satisfactory performance on the Graduate Record Exam), will be conditionally admitted to the graduate program. While conditional admission does not guarantee ultimate admission to the master's program, admission on regular status will typically be granted upon conferral of the baccalaureate degree, provided that all requirements for admission to the master's program have been satisfied.

Transcript Considerations

Joint-degree graduate course hours will be credited to both the undergraduate and graduate degree program requirements. Transcription of graduate only degree credit will, however, be contingent upon matriculation into the graduate degree program. If a conditionally admitted student does not achieve regular admission to the graduate program, any graduate work already completed will be noted on the undergraduate transcript only.

Joint-degree graduate course hours will be shown only on the undergraduate portion of a BPM student's transcript and are included only in undergraduate quality point-average calculations. As a result, the graduate portion of a BPM student's transcript will show up to 6 credit hours fewer than would be otherwise shown and the final graduate cumulative quality-point average will be calculated based upon a correspondingly fewer number of graduate credit hours. The following notation will also be included at the beginning of the graduate portion of a BPM student's transcript:

**"[Specific number] semester hours
of graduate program requirements
were satisfied as an undergraduate student."**

Criteria for Serving On and Chairing Master's Thesis and Doctoral Advisory Committees

Composition of Master's Thesis Committee

Graduate faculty status is a prerequisite to chairing a master's thesis committee. A master's thesis committee must consist of a minimum of three members, at least two of whom must be members of the graduate faculty.

Composition of Doctoral Advisory Committee

Graduate faculty status is prerequisite to chairing a doctoral advisory committee. Additional criteria for chairing dissertation committees may be prescribed by the appropriate academic division. A doctoral advisory committee must consist of a minimum of four members, at least three of whom must be members of the graduate faculty. One of the members must be an external member whose primary appointment is outside the candidate's program or department, or outside the University. The external member must be familiar with the standards of doctoral research and should be in a collateral field supportive of the student's dissertation topic. It is strongly recommended that this member have graduate faculty status, if from another graduate program.

The composition of the doctoral advisory committee is recommended by the chair of the relevant department/program, requires concurrence by the dean (or designate) of the academic division, and approval by the dean of the Graduate School.

Graduate Certificate Programs

Graduate certificates may be awarded to recognize academic accomplishment in a cluster of related graduate courses on a topic, theme, or area as defined by the appropriate faculty. These certificates serve as the student's record of coherent academic accomplishment and, thus, will also be noted on the student's official academic transcript. They are neither academic degree programs nor professional credentialing programs.

Graduate certificate programs typically consist of 3 to 6 graduate courses (9 to 18 credit hours). Specific requirements and sequences leading to these certificates are described in sections of this Bulletin for the respective College or School, as are the specific curricula, courses, and requirements of the divisions and departments offering them.

Types of Certificates

There are three general types of graduate-level certificates:

1. Free-standing certificates recognize the successful completion of a focused set of course work independent of a graduate degree program.
2. Certificates awarded concurrently with an associated master's or doctoral degree which indicate that a specific and elective sequence of course work has been followed.
3. Certificates that recognize the successful completion of additional course work and which reflect academic accomplishment beyond the normal requirements for a degree.

Admission Requirements

Students seeking graduate certificates must apply to and be accepted for admission into either the specific certificate program or an associated degree program. Students who are admitted into a degree program and

who wish to concurrently pursue a graduate certificate should notify the certificate program director in writing before half of the required hours for the certificate are completed.

Transfer Credit

Transfer hours are not acceptable for free-standing certificate programs except in those instances where the certificate program is cross-institutional and the transfer policy is clearly articulated between the governing institutions. Transfer credit may be accepted toward certificates associated with concurrent degree programs in accordance with the transfer policies that govern those degree programs.

Subsequent Degree Programs

Students enrolled in free-standing certificate programs may usually apply their certificate course work toward an eventual degree. Exceptions should be noted in the certificate program proposal and communicated clearly to students upon admission into the certificate program. Students desiring to apply their certificate credits toward an eventual degree must also apply to and be accepted for admission into that degree program when the decision is made to pursue the degree program.

Graduate Retake Policy

Graduate Retake Policy. University policy does not limit the number of courses that may be retaken by graduate students, nor does it limit the number of times any particular course may be attempted. Academic units are nevertheless free to impose specific restrictions according to their needs. All retaken courses, including the original attempt, will be shown on the student's transcript. With permission, however, graduate students may retake a single course, one time, and have the lowest grade excluded from the calculation of their cumulative quality-point average.

To exclude a grade of C or F from their cumulative quality-point average, matriculated graduate students may retake at most one graduate level course of no more than four semester credit hours. For students who pursue more than one graduate degree at the University of Dayton (e.g., a master's degree followed by a doctoral degree, or multiple masters degrees), at most one graduate level course per graduate degree program may be retaken for purposes of grade exclusion according to this policy. In all cases, the course(s) in question must have been taken at the University of Dayton and must be retaken at the University of Dayton.

Courses may be retaken for the purpose of grade exclusion only once and only with the prior written permission of the student's graduate Program Director or Department Chair. In the event that the Chair/Director was the student's original instructor, permission to retake a course for the purpose of grade exclusion may be sought from the student's academic Dean, or Dean's designee.

When permission to retake a course is granted according to this policy, the lowest grade for that course will be excluded from cumulative quality point average calculations. Note that, in the event that the grade received on the approved retake attempt is not better than the original grade(s), the grade for the approved retake attempt shall be excluded from the cumulative quality-point average calculation. While all attempts at the course, including corresponding grades, will be shown on the student's graduate transcript, the excluded grade will be annotated with an "E" (i.e., Grade Excluded). For all other retaken courses, the grades for all attempts will be shown and included in the calculation of the cumulative quality-point average.

Students must demonstrate that a course retaken for the purpose of grade exclusion contains essentially the same material as the original course in which a grade of C or F was earned. In all cases, retake requests must be approved prior to enrollment in order for the grade exclusion policy to apply. Moreover, within 30 days of completing the retaken course, the student's Department Chair or Program Director must communicate with the Registrar's office to initiate the grade exclusion designation and subsequent recalculation of the student's cumulative quality-point average.

Special Provisions:

1) One course taken in pursuit of the Master in the Study of Law (M.S.L.) degree may be retaken according to this policy. All courses leading to the Juris Doctor (J.D.) and Master of Laws (LL.M) degrees are, however, excluded from this policy.

2) Also excluded from this policy are all graduate courses taken by undergraduate students for undergraduate credit (i.e., graduate courses taken to satisfy one or more undergraduate program requirements which are also included in the calculation of undergraduate term and cumulative quality-point averages). This exclusion applies to, but is not limited to, students enrolled in approved Bachelor's Plus Master's (BPM) degree programs.

3) Students enrolled in the joint Accounting plus MBA 150-Hour Program may, according to this policy, retake one graduate level course taken for graduate credit (i.e., a graduate course taken to satisfy a graduate program requirement which is also included in the calculation of graduate term and cumulative quality-point averages).

International Graduate Student Admission

International students can visit <http://gradadmission.udayton.edu> for information and to submit an on-line application.

International students should apply by March 1 if enrolling for the fall term and by July 1 if enrolling for the winter term. Permanent residents and Asylees/Refugees may complete the same on-line application.

Applicants with international credits seeking admission to graduate programs at the University must have completed a minimum of sixteen years of education, including the earned equivalent of a four-year bachelor's degree from a regionally accredited institution. Applicants must also present evidence of outstanding success in the chosen field of study.

Program-specific admission requirements are listed on the graduate admission website at: <http://gradadmission.udayton.edu>

International students who wish to attend the University of Dayton while on a student visa should apply for admission to an appropriate master's or doctoral degree program; admission to a free-standing certificate program alone is generally not sufficient for the issuance of a student visa.

In general, all international applicants are required to provide the following items:

1. A submitted on-line application completed at the following URL: <http://gradadmission.udayton.edu>
2. A complete official academic record of all previous schooling. This record must include dates of attendance, all subjects studied, grades earned and marks achieved on all examinations. Documents

must be sent directly from the institutions attended to the University of Dayton. These credentials must be accompanied by a certified English translation.

3. Three letters of recommendation, preferably from professors at the undergraduate school(s) attended. Letters should be original, on official stationery, and include complete contact information.
4. A personal vita or statement including work experience, research study or experience, and professional development objectives.
5. Official scores from the Test of English as a Foreign Language (TOEFL). A minimum score of 550 on the paper-based test (PBT), or 80 on the internet-based test (IBT) is required for full admission. An applicant who is academically qualified but who has submitted a score of 500-527 (PBT) or 70 or below (IBT) may be conditionally admitted to the University with the agreement that he or she will attend, full-time, UD's Intensive English Program (IEP). An applicant with a TOEFL score between 530-547 (PBT) or 71-79 (IBT) may be admitted with the condition that he or she will attend the IEP part-time and register for a part-time academic load. Upon successful completion of the IEP and achievement of an institutional TOEFL score of 550 or the equivalent, full admission will be granted. In lieu of the TOEFL, an applicant may submit official International English Language Testing System (IELTS) scores. A minimum Band 6.5 score is required for full admission. An applicant who submits a score of 6.0 may be conditionally admitted and attend the IEP part-time. Applicants with scores below 6.0 will be required to attend our IEP program full-time.
6. Master of Business Administration (MBA) applicants must furnish official scores from the Graduate Management Admission Test (GMAT). Most departments in the Schools of Education and Allied Professions, and Arts and Sciences require official test scores from the Graduate Record Examination (GRE). The School of Engineering does not require the GRE. However, applicants are welcome to submit an official score along with other supporting documents.
7. Evidence of financial support to cover all tuition and living costs in the United States. An original bank statement, with account number and cash balance, indicating sufficient liquid funds for the first year's expenses. A letter from the sponsor indicating the extent of financial support to be provided for each year of study. The approval of currency exchange and export of funds (if applicable) must be obtained. Government-sponsored students should send a letter from the government indicating support and billing information.

Requests for hard copy information and a paper application for graduate study should be made to:

Graduate Admission Processing
300 College Park
Dayton, OH 45469-1301
phone 937-229-4351, fax 937-229-4729.

A \$30 non-refundable application fee will be charged for processing all paper applications.

Master's and Doctoral Degree Requirements

The College of Arts and Sciences and the Schools of Business Administration, Education & Allied Professions, Engineering, and Law offer programs variously distributed in time, leading to the master's and doctoral degrees. Specific requirements and sequences leading to these degrees are described in sections of this Bulletin for the

respective College or School, as are the specific curricula, courses, and requirements of the divisions and departments offering them.

Residence Requirement

Residence requirements for graduate degree programs may be set by the divisions and departments offering them. Consult the program for details.

Transfer Credits

Graduate work may be transferred from other accredited institutions to the University of Dayton on recommendation of the student's department chair or graduate program director, and with approval of the student's academic dean and the Graduate School. Only those hours in which the student has achieved a B grade or better will be considered for transfer; no credit will be given for hours graded B- or less. 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 student's graduate program at the University of Dayton. Thesis and dissertation credits are not eligible for transfer.

Except at the doctoral level, a maximum of six semester hours of graduate work may be transferred into a graduate degree program. At the doctoral level, the maximum number of hours eligible for transfer may be extended to one-fourth of the total hours required for the degree, provided that the coursework in the area of specialization is subject to examination prior to admission to candidacy.

For the purpose of computing equivalent transfer credit on either a course-by-course or total hours basis, the number of quarter hours completed at another institution should be multiplied by two-thirds.

Exceptions to this policy, which include articulation agreements made with other universities, may be made with the approval of the Dean of the Graduate School upon the recommendation of the student's department chair or graduate program director.

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, the work done shall be of the grade of B or higher 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 on a 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 chair 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 be approved by at least three members of the department, including the faculty advisor and the chair or director.

The Manual for the Preparation of Graduate Theses and Dissertations is available at <http://gradschool.udayton.edu/initiative/guidelines.pdf>

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.

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 coursework for credit and of all students who wish to audit courses.

All students must be admitted into a graduate degree, specialist, or certificate program before they will be permitted to register for more than six hours of graded graduate course work. Although individuals may enroll for up to six semester hours of graduate credit before being admitted into a specific program of study, the written approval of the proper dean or the designated director 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 chair for permission to resume study at least four weeks prior to the first day of the term.

All students should consult the registration information published by the Office of the Registrar for each term well in advance of registration 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.

Second Master's Degree

In some cases, a student who either possesses a master's degree from the University of Dayton or who is currently studying toward one wishes to obtain an additional master's degree in a related field. In such cases, up to six semester hours from the first degree may be applied toward the requirements of the second, i.e., at most six semester hours may be shared between the two degrees. The determination of which, if any, hours may be applied toward the requirements of the second degree will be made by the chair, or director of the second degree program, in consultation with the student's advisor in the second program.

Time Limit

All requirements for a free-standing graduate certificate must be satisfied within four calendar years from the time of matriculation.

All requirements for a certificate associated with a concurrent degree program must be satisfied within the time limit associated with that degree.

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 nine calendar years from the time of matriculation.

For legitimate and substantial reasons, requests to extend the time to complete masters and doctoral degrees may be considered.

Such requests must be formally submitted to the Office of Graduate, Professional & Continuing Education for review. Ordinarily, such requests must be made prior to expiration of the normal time to complete degree requirements. Except in very unusual cases, only one such request for an extension will be considered for any student.

In addition to articulating circumstances that have prevented completion of degree requirements within the time periods specified above, and the reason(s) for requesting the extension, the request must also include a detailed plan for degree completion, including a schedule of the remaining coursework to be taken and other specific milestones to be met. Moreover, the plan for completion must describe how the plan ensures that the student's knowledge in his or her academic field can be considered up-to-date and current. Students are cautioned that in some cases this may include a requirement to re-take some or all of their previously taken coursework."

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. For more information on "Other Charges," visit Section IV, Financial Information. A complimentary transcript certificate will be given to each graduate when the official diploma is issued. For more information please visit: <http://www.registrar.udayton.edu>.

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:
 - Approval must be obtained from the director of the appropriate graduate program.
2. Graduate courses to count toward the graduate degree:
 - Approval must be obtained from the director of the appropriate graduate program.
 - Unless the student has been accepted into a combined baccalaureate/master's degree program, the student must be within 15 semester hours of completing the semester-hour requirements for graduation in the undergraduate program.
 - Credit obtained for the graduate courses may not be counted toward both the bachelor's degree and any future master's degree unless the student has been admitted to a combined Bachelors + Masters program.

- The undergraduate student whose status is less than full-time or 3/4-time must pay the graduate tuition rates to register in graduate courses for graduate credit.

Veterans

All departments at the University have been approved by the State Approving Agency for Veterans' Training. Please contact the Veteran's Certifying Official to inquire as to whether your major is listed among those approved by the State Approving Agency. The Veterans' Affairs office is located in Albert Emanuel Hall, first floor, and will assist in processing the necessary forms for educational benefits. A student who is receiving V.A. benefits and decides to change majors is required to complete and sign a V.A. Change of Program Form, which can be obtained through the University's Veterans' Affairs office. Failure to follow this procedure may result in cancellation of benefits by the V.A. For the conditions for good academic standing, visit Academic Standing in Section V, Academic Regulations. If a veteran on probation fails to acquire the required cumulative grade point average at the end of the veteran's next full-time term, the benefits from the V.A. cease.

Libraries and Research Services

The University Libraries are comprised of Roesch Library, the Marian Library, the University Archives and Special Collections, and the International Marian Research Institute. Roesch Library houses books, journals, videos, DVDs, CDs, government documents, and microforms for both graduate and undergraduate students. Roesch Library is open 114 hours a week throughout much of the academic year and 24 hours per day during finals. Reference assistance is provided in a variety of forms including in person, email, IM, telephone, and private consultations. Roesch Library subscribes to over 280 databases on a variety of subjects and provides access to more than 69,000 journals in print and electronic formats. The Libraries also provide comfortable study areas, photocopiers, and individual and group study rooms. Roesch Library has 20 computer workstations located on the first floor and 37 computer workstations located on the second floor. All workstations provide access to the campus network, OhioLINK resources, and the Internet. These computers run Microsoft Office applications between SPSS and audio and video editing software and are available the entire time the library is open. Group Project Space, also located on the second floor, has ten workstations equipped with double monitors that allow for group collaboration. All floors have data ports and wireless network access that allow students to access campus and information networks through notebook computers. The Libraries are members of OhioLINK, a cooperative venture of university and college libraries and the Ohio Board of Regents. OhioLINK partners have created a common information network providing rapid access to and delivery of over 49 million items available at college and university libraries across the state. All of the libraries affiliated with OhioLINK provide on-site borrowing privileges to students and faculty associated with the University. Access to the Libraries' Web page, databases, and online catalog is available at <http://www.udayton.edu/libraries/>.

The Marian Library (seventh floor of the Roesch Library) is recognized as the world's largest collection of published materials on the Virgin Mary. Its comprehensive collection embraces the works treating the Virgin Mary as found in Scripture, tradition, doctrine, history, art, popular culture, spirituality, and devotion. The multi-language collection includes over 95,000 books (6,000 printed before 1800), 200 periodicals, a clipping file of over 60,000 items, a Marian stamp collection, a Christmas creche

collection, statues, medals, postcards, and works of art. Publications include Marian Studies (papers given at the annual meeting of the Mariological Society of America), Marian Library Studies (original research on Marian topics), and the twice-yearly Marian Library Newsletter. United with the Marian Library is the International Marian Research Institute (IMRI), affiliated with the Pontifical Theological Faculty Marianum in Rome. IMRI offers courses in Marian studies as well as pontifical academic degrees (Licentiate and doctorate) in theology with specialization in Mariology. The Marian Library's collections can be accessed via the University Libraries' online catalog. Hours, an explanatory video, and information on current art exhibits can be found on the Mary Page at <http://campus.udayton.edu/mary/>.

The University of Dayton School of Law Library is located in Joseph E. Keller Hall. Its collection contains over 190,000 volumes and over 676,000 physical units of microforms. The open-stack arrangement of the Law Library permits easy access to all materials. For additional information see <http://community.udayton.edu/law/library/>.

The Brother Louis J. Faerber, S.M., Curriculum Materials Center (CMC) houses the SOEAP's specialized education collections and is located in Chaminade Hall. Its collection includes professional education books and journals, children and young adult literature, elementary and secondary textbooks, standardized assessments, teaching aids (games & manipulatives), DVD's, CD's, videocassettes, audiocassettes, LP records, charts, material kits, and other resources. The CMC also houses research projects, theses, and dissertations completed for the SOEAP's respective graduate programs. A copier, four networked computer workstations, the Ellison Press, Accu-Cut Machine, and an assortment of letter and shape dies are available for student use. Additional information is available at www.udayton.edu/education/cmc/index.php.

Interdisciplinary, Experimental and Special Areas

Please select a subsection using the menu to the right.

Interdisciplinary and Joint Studies-Graduate

For information regarding Interdisciplinary and Joint Studies, Contact the Program Director or the Graduate School.

Individual Interdisciplinary Programs

The University of Dayton offers individual interdisciplinary graduate programs designed by the student in cooperation with an advisor and representatives from the selected programs. Applicants must have an undergraduate degree with a general cumulative point average of 2.8 or above, and submit a formal written request for an individually designed interdisciplinary program to her/his faculty advisor and graduate committee.

The interdisciplinary program does not take the place of an established graduate program. Rather, it is a specific program drawn 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. 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.

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 chair of the departments involved.

A program of study must be at least 30 semester hours: 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 30 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

Juris Doctor/Master of Business Administration Program

Juris Doctor/Master of Business Administration Program
937-229-3555

MBA Program
937-229-3733

The University of Dayton offers a unique dual degree program for students interested in both law and business. The joint JD/MBA program allows the student to apply six hours of approved elective credit earned in the MBA Program to the Law Program and six hours of approved elective credit earned in the Law Program to the MBA Program. The dual program results in the elimination of a total of 12 semester hours that are normally required if the degrees were pursued individually, thus fulfilling both degrees at a much faster pace. Students may begin either program first, but the first year Law student is required to take Law courses exclusively during the first two semesters of Law studies.

Students applying for admission to the joint degree program must meet the admission requirements of both the Law School and the MBA Program. Applications for admission should be submitted to each school, along with other records and data required by each school. The applicant should indicate on each application that application is for the JD/MBA program. Applicants should contact the Directors of both programs for information and admission applications. Upon admission to both programs, the student will be enrolled in the JD and MBA programs simultaneously.

Upon admission to the joint degree program, the student will be assigned an advisor from both the Law School and the MBA Program. Each

student is required to meet with the respective program advisors to plan his/her program. Continuous liaison must be maintained throughout the joint degree program.

Communication (CAI) Interdisciplinary Program

James D. Robinson, Director of Graduate Studies

The Communication interdisciplinary study program leads to the Master of Arts. It requires 24 semester hours of study in communication, and 12 semester hours of study in one of several designated interdisciplinary areas. The designated areas are psychology, English, business, and political science. Upon completion of the coursework, students must pass a written and oral comprehensive exam. Visit the Academic Information section of this website for program details.

Electro-Optics (EOP)

Joseph W. Haus, Program Director

The programs of study for the Master of Science and Doctor of Philosophy in Electro-Optics are administered by the School of Engineering with the cooperative support of the College of Arts and Sciences. This interdisciplinary activity is coordinated by the Electro-Optics Program with active participation of the Electrical Engineering and Physics departments and the University of Dayton Research Institute. State-of-the-art graduate electro-optics courses have been designed to prepare electrical engineers and physicists for careers in the emerging electro-optics field. Facilities at the University include 25 laboratories used for electro-optics research. There is also close research cooperation with the Air Force Research Laboratory. Visit the Academic Information section of this website for program details.

International Marian Research Institute (IMRI)

Johann G. Roten, S. M., Program Director

To facilitate and encourage Marian Studies in the United States and abroad, the International Marian Research Institute (IMRI) was founded in 1975 at the University of Dayton in affiliation with the Roman Pontifical Theological Faculty Marianum. Housed in the Marian Library, IMRI offers annual graduate-level summer schools on a three-year cycle to promote the programs of Marian Studies established by the Marianum. World-renowned theologians often join the faculty as guest instructors or lecturers.

Through IMRI, students can work toward a Pontifical Licentiate of Sacred Theology (S.T.L.) or Doctorate of Sacred Theology (S.T.D.)-each with specialization in Mariology-a certificate in Marian Studies, or a master's degree in religious studies with specialization in Mariology from the University's Department of Religious Studies, offered in a joint program. Course offerings include studies in Mariology, Christology, ecclesiology, spirituality, and theological anthropology.

Recognized as one of the world's leading centers for Mariological studies, the International Marian Research Institute also is committed to scholarly Marian research and the promotion of Marian art.

Admission is approved by the director of IMRI and an advisory council.

Teacher Education (EDT) Interdisciplinary Program

Kathryn Kinnucan-Welsch, Chair, Department of Teacher Education

The Department of Teacher Education in the School of Education and Allied Professions offers an opportunity for students to develop an individually designed program that includes coursework in education as well as a discipline or field outside of education. Students develop a plan through a selection of offerings in teacher education and other departments. Visit the Academic Information section of this website for program details.

For more information on any of these programs, visit the Academic Information section of this website, or consult with the program director or chair of the department.

Directories

Please select a subsection using the menu to the right.

Faculty

PAST PRESIDENT

Fitz, Raymond L., S.M. (1969), Engineering Management and Systems, Ferree Professor in Social Justice - B.E.E., University of Dayton, 1964; M.S., Polytechnic Institute of Brooklyn, 1967; Ph.D., 1970.

DEANS EMERITI

Garten, Rev. Edward D. (1985), Library - B.S., Concord College, 1968; M.A., M.Div., in consortium, Pontifical College Josephinum, Ohio State University, and Methodist Theological School in Ohio, 1972; M.L.S., Kent State University, 1974; Ph.D., University of Toledo, 1977.

Gould, Sam (1985), Management and Marketing - B.S., Ohio State University, 1965; M.B.A., University of Colorado, 1970; Ph.D., Michigan State University, 1975.

Joseph, Ellis A. (1961), Education - A.B., University of Notre Dame, 1955; M.A., 1956; Ph.D., 1962; L.H.D. (Honorary), College of Mt. St. Joseph, 1989.

Morman, Paul J. (1990), History - B.A., University of Dayton, 1965; M.A., Bowling Green State University, 1966; Ph.D., Pennsylvania State University, 1973; M.S., State University of New York at Binghamton, 1984.

Sargent, Gordon A. (1985), Mechanical and Aerospace Engineering - B.S., Imperial College of Science and Technology, University of London, 1960; Ph.D., 1964.

PROFESSORS EMERITI

Ahern, David W. (1977), Political Science - B.A., Southern Connecticut State College, 1970; M.A., University of Maryland, 1972; Ph.D., 1976.

Allik, Judith P. (1976), Psychology - B.A., Wellesley College, 1958; M.S., University of Pittsburgh, 1974; Ph.D., 1978.

Amsden, Robert T. (1978), Management Information Systems, Operations Management, and Decision Sciences - B.A., University of New Hampshire, 1960; M.S., Rutgers University, 1964; Ph.D., 1969.

Anderson, Gordon S. (1969), Teacher Education - B.A., Bethany College, 1953; M.S., State University of New York, 1959; Ed.D., Case Western Reserve University, 1969.

Anderson, Rev. William P. (1968), Religious Studies - A.B., Bloomfield College, 1961; B.D., Princeton Theological Seminary, 1964; Th.D., 1968.

Artz, Theodora S. (1974), Law Library - B.Ed., University of Toledo, 1962; M.A.L.S., 1974.

August, Eugene R. (1966), English - B.A., Rutgers University, 1958; M.A., University of Connecticut, 1960; Ph.D., University of Pittsburgh, 1965.

Back, Stanley J. (1959), Mathematics - B.S., University of Dayton, 1957; M.S., Purdue University, 1959.

Berger, Robert N. (1964), Management and Marketing - B.S., University of Dayton, 1960; M.A., Ohio University, 1963; J.D., Chase School of Law, 1970.

Benedum, Richard P. (1973), Music - B.A., Concordia Teachers College, 1966; D.M.A., University of Oregon, 1972.

Biers, David W. (1976), Psychology, Associate Professor - B.A., Lafayette College, 1966; M.S., Northwestern University, 1968; Ph.D., 1970.

Blatt, Stephen J. (1971), Communication - B.A., Morehead State University, 1964; M.A., Ohio University, 1967; Ph.D., 1969.

Bogner, Fred K. (1969), Civil and Environmental Engineering and Engineering Mechanics - B.S.C.E., Case Institute of Technology, 1961; M.S.E.M., 1964; Ph.D., 1967.

Bohlen, George A. (1980), Management Information Systems and Decision Sciences - 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.

Buby, Rev. Bertrand A., S.M. (1967), Religious Studies - B.A., University of Dayton, 1955; S.T.L., Pontifical Biblicum Institute, 1964; S.S.L., University of Fribourg, 1966; S.T.D., Pontifical University of the Marianum, 1980.

Buckley, David M. (1968), Library - B.A., Miami University, 1966; M.A.L.S., Western Michigan University, 1968; M.A., University of Dayton, 1975.

Burns, Rev. Norbert C., S.M. (1959), Religious Studies - B.A., University of Dayton, 1945; S.T.L., University of Fribourg, 1954; S.T.D., The Angelicum, 1955.

Butter, Eliot J. (1971), Psychology - B.A., Brooklyn College, 1965; M.A., 1969; Ph.D., University of Massachusetts, 1971.

Casey, Anthony L. (1969), Management Information Systems and Decision Sciences - M.Ed., Wright State University, 1973; M.S., University of Dayton, 1972.

Chiodo, Andria J. (1968), Languages, Assistant Professor - B.A., University of Oregon, 1966; M.A., 1968.

Chuang, Henry N. (1965), Mechanical and Aerospace Engineering - B.S., National Taiwan University, 1958; M.S., University of Maryland, 1962; Ph.D., Carnegie Institute of Technology, 1966; Reg. Prof. Engr.

Clark, Willard C., Jr. (1963), Accounting - B.S., University of Dayton, 1959; M.B.A., Miami University, 1960; C.P.A., Ohio, 1962.

Conard, Robert C. (1967), Languages - B.B.A., University of Cincinnati, 1956; M.A., 1962; Ph.D., 1969.

DaPolito, Frank J. (1970), Psychology - B.A., Bowling Green State University, 1959; Ph.D., Indiana University, 1966.

Dickinson, Kelvin H. (1979), Law - B.A., Western Michigan University, 1965; LL.B., Harvard University, 1968.

Doepker, Philip E. (1984), Mechanical and Aerospace Engineering, Professor - B.M.E., University of Dayton, 1967; M.S.M.E., Ohio State University, 1968; Reg. Prof. Engr.

Drees, Doris A. (1956), Health and Sport Science - B.S., University of Dayton, 1956; M.A., Ohio State University, 1959; Ph.D., University of Iowa, 1968.

Eastep, Franklin E. (1980), Mechanical and Aerospace Engineering - B.S., Ohio State University, 1958; M.S., Air Force Institute of Technology, 1963; Ph.D., Stanford University, 1968.

Ebeling, Charles E. (1988), Engineering Management and Systems - B.S., University of Pittsburgh, 1965; M.S., Air Force Institute of Technology, 1969; Ph.D., Ohio State University, 1973; Reg. Prof. Engr.

Eid, Leroy V. (1961), History - B.S.Ed., University of Dayton, 1953; M.A., St. John's University, 1958; Ph.D., 1961; M.A., University of Toronto, 1968.

Eimermacher, John P. (1986), Mechanical and Aerospace Engineering - M.E., University of Cincinnati, 1963; M.S.M.E., 1967; Ph.D., 1973; Reg. Prof. Engr.

Eley, Marion J. (1961), Accounting - B.S., University of Dayton, 1959; M.B.A., Xavier University, 1964; C.P.A., Ohio, 1966.

Evans, James H. (1981), Counselor Education and Human Services - B.A., Ohio Wesleyan University, 1961; M.A., Kent State University, 1964; Ed.D., Indiana University, 1971.

Evers, Anthony J. (1966), Electrical Engineering - B.E.E., University of Dayton, 1953; M.S.E.E., University of Notre Dame, 1955; Reg. Prof. Engr.

Eveslage, Sylvester L. (1948), Chemistry - B.S., University of Notre Dame, 1944; M.S., 1945; Ph.D., 1953.

Farren, Joseph M. (1966), Engineering Technology - B.S., Bluffton College, 1959; B.E.E., University of Dayton, 1961; M.S., 1966; M.B.A., 1977; Reg. Prof. Engr.

Fioriti, Andrew A. (1965), Accounting - B.S., University of Scranton, 1956; M.B.A., University of Detroit, 1958; C.P.A., New Jersey, 1964.

Fogel, Norman J. (1971), Political Science - B.S., Millersville State College, 1960; M.A., University of Delaware, 1968; Ph.D., Ohio State University, 1975.

Fost, Roberta S. (1969), History - B.A., University of California, 1964; M.A., University of Chicago, 1966; Ph.D., 1974.

Fraker, John R. (1975), Engineering Management and Systems - B.S., University of Tennessee, 1956; M.S., 1965; Ph.D., Clemson University, 1971; Reg. Prof. Engr.

Fratini, Albert V. (1967), Chemistry - B.S., University of Rhode Island, 1960; Ph.D., Yale University, 1966.

Frericks, Donald J. (1978), Educational Leadership - B.S., University of Dayton, 1956; M.A., Miami University, 1958; Ph.D., Ohio State University, 1970.

Friedland, Eric L. (1968), Religious Studies - B.A., Boston University, 1960; M.A., Brandeis University, 1962; Ph.D., 1967.

Friel, J. William (1963), Mathematics - B.S., Loras College, 1959; M.A., Duquesne University, 1962.

Frye, Helen B. (1967), Teacher Education - B.A., Ohio Wesleyan University, 1944; M.Ed., Wittenberg University, 1962; Ph.D., Ohio State University, 1967.

Fuchs, Gordon E. (1967), Teacher Education - B.S., University of Wisconsin, 1958; M.S., 1961; Ph.D., Ohio State University, 1974.

Gantner, Thomas E. (1966), Mathematics - B.S., University of Dayton, 1962; M.S., Purdue University, 1964; Ph.D., 1966.

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; Ohio, 1976.

Geiger, Donald R., S.M. (1964), Biology - B.S., University of Dayton, 1955; M.S., Ohio State University, 1960; Ph.D., 1963.

Geiger, John D. (1970), Teacher Education - B.A., Marquette University, 1966; Ph.D., 1972.

George, Norman (1962), Law - Ohio State University, 1950; M.B.A., University of Pittsburgh, 1954; Ph.D., Ohio State University, 1962; J.D., Salmon Chase College, 1967.

Gilvary, Patrick S. (1955), Communication - B.S., University of Dayton, 1950; M.A., Xavier University, 1963; Ph.D., Ohio State University, 1975.

Graham, Thomas P. (1964), Physics - B.S., Providence College, 1956; Ph.D., Iowa State University, 1967.

Gross, David I. (1981), Chemical Technology - B.Ch.E., Georgia Institute of Technology, 1959; M.S., Air Force Institute of Technology, 1965; Reg. Prof. Engr.

Hanneman, Douglas A. (1956), Engineering Technology - B.E.E., University of Dayton, 1956; Reg. Prof. Engr.

Harwood, Philip J. (1966), Communication - B.S., Butler University, 1960; M.S., 1961; Ph.D., Ohio University, 1972.

Hater, Robert J. (1981), Religious Studies - B.A., Athenaeum of Ohio, 1957; M.A., 1959; Ph.D., St. John's University, 1967.

Hecht, Norman L. (1974), Materials Engineering - B.S., Alfred University, 1960; M.S., 1968; Ph.D., 1972.

Henninger, Francis J. (1965), English - B.A., St. John's University, 1956; A.M., University of Notre Dame, 1958; M.A., University of Pennsylvania, 1962; Ph.D., 1965.

Hoffer, Jeffrey A. (1995), Management Information Systems, Operations Management, and Decision Sciences, Sherman-Standard Register Professor of Data Management - B.A., Miami University, 1969; M.S., Cornell University, 1972; Ph.D., 1975.

Hopfengardner, Jerrold (1978), Educational Administration - B.A., University of Dayton, 1959; M.Ed., Miami University, 1961; Ph.D., Ohio State University, 1970.

- Inscho, Frederick R. (1976), Political Science, Associate Professor - A.B., University of Detroit, 1968; M.A., State University of New York at Buffalo, 1972; Ph.D., 1976.
- Karns, Margaret (1976), Political Science - B.A., Dennison University, 1965; M.S., University of Michigan, 1966; Ph.D., 1975.
- Kee, Richard J. (1985), Electrical and Computer Engineering - B.S., University of Tampa, 1971; M.S.E.E., Air Force Institute of Technology, 1976; D.E., University of Dayton, 1989; Reg. Prof. Engr.
- Kepes, Joseph J. (1962), Physics - B.S., Case Institute of Technology, 1953; Ph.D., University of Notre Dame, 1958.
- Kerns, Gerald E. (1967), Political Science - B.A., University of Wichita, 1961; Ph.D., Indiana University, 1969.
- Kester, Jack E. (1966), Computer Science - B.S., University of Dayton, 1952; M.S., Ohio State University, 1958.
- Knachel, Howard C. (1972), Chemistry - B.S., University of Dayton, 1963; M.S., Ohio State University, 1969; Ph.D., 1971.
- Korte, John R. (1973), Psychology - A.B., University of California, 1967; M.S., Purdue University, 1970; Ph.D., 1973.
- Kreiss, Robert A. (1989), Law - B.A., Reed College, 1963; M.A., University of Oregon, 1965; Ph.D., 1968; J.D., Stanford University, 1977.
- Kubach, Reinhold W. (1958), Electrical Engineering - B.E.E., Staatliche Ingenieurschule, Esslingen, 1947; M.S.E., University of Dayton, 1966.
- Kunkel, Joseph C. (1964), Philosophy - A.B., Loyola University, Chicago, 1958; A.M., 1962; Ph.D., St. Bonaventure University, 1968.
- Kuntz, Kenneth J. (1969), Psychology - B.A., Washington University, 1956; M.A., University of Cincinnati, 1963.
- Labadie, Patricia B. (1959), English - B.A., University of Washington, 1946; M.A., Miami University, 1961; Ph.D., University of Cincinnati, 1974.
- Lain, Laurence B. (1976), Communication, Professor - B.S., Indiana State University, 1969; M.A.E., Ball State University, 1973; Ph.D., Ohio State University, 1984.
- Lang, Joseph E. (1981), Computer Science - A.B., Thomas More College, 1964; M.S., University of Illinois, 1965; Ph.D., 1970; M.S., Wright State University, 1988.
- Lapitan, Antonio E. (1969), Political Science - A.B., University of the Philippines, 1954; M.A., Lehigh University, 1957; Ph.D., University of Oregon, 1968.
- Laufersweiler, Joseph D. (1963), Biology - B.S., University of Notre Dame, 1952; M.S., Ohio State University, 1954; Ph.D., 1960.
- Lee, David R. (1982), Management and Marketing - B.S., U.S. Air Force Academy, 1962; M.S.I.E., Purdue University, 1966; Ph.D., 1972; Reg. Prof. Engr.
- Leonard, Mary T. (1956), Health and Sport Science - A.B., Radcliffe College, 1948; M.S., MacMurray College, 1951; Ed.D., Boston University, 1960.
- Lestingi, Joseph (1992), Mechanical and Aerospace Engineering - B.C.E., Manhattan College, 1957; M.S., Virginia Polytechnic Institute, 1959; D.Eng., Yale University, 1966.
- Lewis, William F. (1980), Management and Marketing, Associate Professor - B.A., Spring Arbor College, 1967; M.B.A., Michigan State University, 1969; Ph.D., University of Cincinnati, 1976.
- Lu, Christopher C. (1976), Chemical and Materials Engineering - B.S., Chen-Kung University, 1960; M.S., University of Missouri, 1966; Ph.D., University of Texas, 1972
- Martin, Herbert W. (1970), English - B.A., University of Toledo, 1964; M.A., State University of New York at Buffalo, 1967; M.I., Middlebury College, 1972; D.A., Carnegie-Mellon University, 1979.
- Martin, Judith G., S.S.J. (1980), Religious Studies, Associate Professor - B.A., Medaille College, 1969; M.A., Union Theological Seminary, 1972; M.A., McMaster University, 1975; Ph.D., 1983.

McCloskey, John W. (1965), Mathematics - B.S., University of Dayton, 1960; M.S., Michigan State University, 1962; Ph.D., 1965.

Means, Michael H. (1963), English - B.A., University of Wisconsin-Whitewater, 1955; M.A., Ohio State University, 1957; Ph.D., University of Florida, 1963.

Merenski, J. Paul (1976), Management and Marketing - B.S., Wright State University, 1971; M.B.A., 1972; Ph.D., University of Cincinnati, 1982.

Minardi, John E. (1964), Mechanical and Aerospace Engineering - B.M.E., University of Dayton, 1955; M.S.M.E., University of Southern California, 1957; Ph.D., University of Cincinnati, 1973.

Miner, George K. (1976), Physics - A.B., Thomas More College, 1958; M.S., University of Notre Dame, 1960; Ph.D., University of Cincinnati, 1965.

Montavon, Robert E. (1966), Library - B.A., St. Charles College, 1955; M.A., Catholic University of America, 1962; M.S.L.S., 1965.

Morlan, Don B. (1977), Communication - B.S., Indiana State University, 1962; M.S., 1965; Ph.D., Purdue University, 1969.

Moroney, William F. (1990), Psychology - B.A., Cathedral College, 1964; M.A., St. John's University, 1967; Ph.D., 1968.

Mott, Robert L. (1966), Engineering Technology - B.M.E., General Motors Institute, 1963; M.S.M.E., Purdue University, 1965; Reg. Prof. Engr.

Murphy, Lorraine M. (1953), English - B.A., Augustana College, 1946; M.A., Miami University, 1962.

O'Meara, Maureen F. (1986), Languages - B.A., Trinity College, 1971; Ph.D., Cornell University, 1976.

Palermo, Patrick F. (1971), History, Professor - B.A., Fordham College, 1966; M.A., State University of New York at Stony Brook, 1967; Ph.D., 1974.

Palumbo, Suzanne D. (1965), English - B.A., Northwestern University, 1957; M.A., University of Dayton, 1965.

Patrouch, Joseph F. (1964), English - A.B., University of Cincinnati, 1958; M.A., 1960; Ph.D., University of Wisconsin, 1965.

Patyk, Josef (1963), Political Science - Certificate, School of Public Administration, Poland, 1935; LL.M., Jagiellonski University, 1945; Ph.D., University of Colorado, 1965.

Quinn, John F. (1970), Philosophy - B.A., Gonzaga University, 1965; M.A., 1966; Ph.L., Mount St. Michael's College, 1966; M.A., University of Washington, 1968; J.D., University of Dayton, 1982.

Ramsey, James M., (1964), Biology - B.S., Wilmington College, 1948; M.S., Miami University, 1951.

Rapp, John E. (1972), Economics and Finance - B.A., University of Missouri, 1959; M.A., 1960; Ph.D., 1964.

Ray, Alden E. (1961), Mechanical and Aerospace Engineering - B.A., Southern Illinois University, 1953; Ph.D., Iowa State University, 1959.

Rice, Bernard J. (1960), Mathematics - B.S., St. Louis University, 1955; M.S., Ohio State University, 1961.

Ritter, Charles J. (1967), Geology - B.S., University of Dayton, 1959; M.S., Massachusetts Institute of Technology, 1962; Ph.D., University of Michigan, 1971.

Roberts, Carole L. (1968), Health and Sport Science - B.S.Ed., Ohio State University, 1964; M.A., 1968.

Roehm, Harper A. (1992), Accounting - B.A., DePauw University, 1957; M.B.A., Indiana University, 1963; D.B.A., Florida State University, 1972.

Rogers, Dana B. (1982), Electrical and Computer Engineering - B.S.E.E., Arizona State University, 1962; M.S.E.E., Air Force Institute of Technology, 1969; Ph.D., University of Dayton, 1978.

Romaguera, Enrique (1969), Languages - B.A., University of Dayton, 1965; M.A., Ohio University, 1966.

- Rosenzweig, Kenneth Y. (1981), Accounting - B.A., University of Texas, 1965; M.B.A., University of Houston, 1968; Ph.D., Michigan State University, 1977.
- Rueth, Thomas W. (1987), Counselor Education and Human Services - B.S., University of Dayton, 1963; M.A., 1969; Ph.D., Loyola University, Chicago, 1973.
- Ryckman, Seymour J. (1959), Civil and Environmental Engineering and Engineering Mechanics - B.S., Michigan State University, 1939; M.S., University of Missouri, 1942; Reg. Prof. Engr.
- Sandness, Marilyn I. (1974), Music - B.M., Eastman School of Music, 1958; M.M., New England Conservatory of Music, 1960; Reg. Music Therapist. Music Therapist, Board Certified.
- Scarpino, Frank A. (1987), Electrical and Computer Engineering - B.S.E.E., University of Cincinnati, 1963; M.S.E.E., 1970; Ph.D., University of Dayton, 1987.
- Schauer, John J. (1968), Mechanical and Aerospace Engineering, Professor - B.S., University of Dayton, 1958; M.S., University of Dayton, 1959; Ph.D., University of Dayton, 1964.
- Schenk, Joseph A. (1980), Management and Marketing, Associate Professor - B.B.A., University of Kentucky, 1970; M.B.A., Kent State University, 1972; D.B.A., 1976.
- Schleppi, Carroll M. (1984), Mathematics - B.S., Chestnut Hill College, 1963; M.S., Ohio State University, 1965.
- Schleppi, John R. (1963), Health and Sport Science - B.S., Ohio State University, 1961; M.A., 1963; Ph.D., 1972.
- Sekely, William S. (1976), Management and Marketing, Associate Professor - B.S., Allegheny College, 1966; M.S., Case Western Reserve University, 1970; Ph.D., Kent State University, 1975.
- Shaughnessy, Gerald J. (1967), Mathematics, Associate Professor - B.S., University of Dayton, 1963; M.S., Florida State University, 1964.
- Shaw, Carol M. (1968), Engineering Technology - B.S., Ohio University, 1963; M.S.Ed., University of Dayton, 1968; M.S., 1973.
- Siciliano, Carol J. (1964), Health and Sport Science - B.S.Ed., Bowling Green State University, 1959; M.A.Ed., Western Reserve University, 1962.
- Simon, Marvin D. (1987), Engineering Technology - B.S.M.E., University of Cincinnati, 1956; M.B.A., University of Dayton, 1978.
- Singer, Sanford S. (1972), Chemistry - B.S., Brooklyn College, 1962; M.S., University of Michigan, 1964; Ph.D., 1967.
- Snide, James A. (1974), Chemical and Materials Engineering - B.S., Ohio University, 1959; M.S., Air Force Institute of Technology, 1965; Ph.D., Ohio State University, 1975.
- Staub, Albert E. (1956), Engineering Technology - A.B., University of Missouri, 1951; M.A., Miami University, 1963.
- Steinlage, Ralph C. (1966), Mathematics - B.S., University of Dayton, 1962; M.S., Ohio State University, 1963; Ph.D., 1966.
- Stockum, Eleanore K. (1957), English - B.A., College of St. Teresa, 1950; M.A., Marquette University, 1953.
- Strange, Jerry D. (1958), Engineering Technology - B.S., Otterbein College, 1958; M.S., Xavier University, 1964.
- Sudzina, Mary R. (1988), Teacher Education - B.S., Virginia Commonwealth University, 1970; M.A., Villanova University, 1974; Ph.D., Temple University, 1987.
- Sultan, Allen (1978), Law - A.B., Syracuse University, 1952; J.D., Columbia University, 1958; A.M., University of Chicago, 1961; LL.M., New York University, 1965.
- Taylor, Amie L. (1981), Counselor Education and Human Services - B.S., Central State University, 1957; M.Ed., Miami University, 1970; M.S.Ed., University of Dayton, 1985; Ph.D., Miami University, 1985.
- Taylor, Bruce M. (1967), History - B.A., Dartmouth College, 1957; M.A., Columbia University, 1962; Ph.D., Fordham University, 1973.

Thiele, Gary A. (1979), Electrical and Computer Engineering - B.S.E.E., Purdue University, 1977; M.S., Ohio State University, 1964; Ph.D., 1968; Reg. Prof. Engr.; Fellow IEEE, 1982.

Tiller, Kathleen (1983), Library - B.S., University of Wisconsin, 1971; B.A., University of Wisconsin-Milwaukee, 1981; M.L.S., 1983; M.A., University of Dayton, 1990.

Tsui, Susan L., (1965), Library - B.A., National Taiwan University, 1961; M.S.L.S., University of Illinois, 1954.

Turner, Dennis J. (1974), Law - B.A., Georgetown University, 1967; J.D., 1970.

Ulrich, Lawrence P. (1964), Philosophy - B.A., Catholic University of America, 1961; M.A., 1962; M.Ed., Xavier University, 1964; Ph.D., University of Toronto, 1972; M.S., University of Dayton, 1985.

Vines, Alice G. (1969), History - B.A., B.S.Ed., University of Cincinnati, 1960; M.A., 1961; Ph.D., 1975.

Vlahos, George E. (1978), Management Information Systems and Decision Sciences - B.S., University of Illinois, 1964; M.S., Southern Illinois University, 1967; Ph.D., University of Northern Colorado, 1974.

Walker, Mary Ann (1970), Library - B.S.Ed., Kent State University, 1966; M.L.S., 1968; M.B.A., University of Dayton, 1981.

Weaver, Roberta (1969), Teacher Education - B.S., Ohio State University, 1960; M.S.Ed., University of Cincinnati, 1966; Ed.D., 1982.

Weiler, John E. (1967), Economics and Finance - B.A., University of Cincinnati, 1960; M.A., 1961; Ph.D., 1973.

Wernersbach, Geraldine S. (1979), Law Library - B.M., Duquesne University, 1949; M.A.L.S., Kent State University, 1959.

Whitney, James M. (1989), Civil and Environmental Engineering and Engineering Mechanics - B.A., Illinois College, 1959; B.S.T.E., Georgia Institute of Technology, 1959; M.S.T.E., 1961; M.S., Ohio State University, 1964; Ph.D., 1968.

Williamson, Tommy L. (1981), Electrical and Computer Engineering - B.S.E.E., Ohio University, 1962; M.S.E.E., Ohio State University, 1965; Ph.D., 1975.

Winger, Bernard J. (1966), Economics and Finance - B.S., Xavier University, 1959; M.A., University of Cincinnati, 1960; C.P.A., Ohio, 1965.

Winslow, Leon E. (1981), Computer Science - B.S., Marquette University, 1956; M.S., 1960; Ph.D., Duke University, 1965.

Wolff, Florence I. (1969), Communication - B.S., Temple University, 1941; M.Ed., Duquesne University, 1967; Ph.D., University of Pittsburgh, 1969.

Wurst, John C., (1957), Mechanical and Aerospace Engineering - B.M.E., University of Dayton, 1957; M.S., 1968; Ph.D., 1971.

Youngkin, Betty R. (1991), English - B.A., High Point College, 1965; M.A., Northwestern University, 1969; Ph.D., Texas A & M University, 1989.

Zahner, Mary A. (1971), Visual Arts - B.F.A., Ohio University, 1960; M.A., 1969; Ph.D., Ohio State University, 1987.

Zembaty, Jane S. (1975), Philosophy - B.A., State University of New York at Buffalo, 1971; M.A., Georgetown University, 1975; Ph.D., 1976.

DIRECTOR OF ADMISSION EMERITUS

Achbach, Myron H. (1970), Office of Admission - B.A., University of Dayton, 1958; M.A., Western Reserve University, 1966.

REGISTRAR EMERITUS

Palmert, Daniel F. (1977), Registrar - B.S., University of Dayton, 1950; M.B.A., 1978.

DISTINGUISHED SERVICE PROFESSORS

Alexander, Roberta S. (1969), History - B.A., University of California, 1964; M.A., University of Chicago, 1966; Ph.D., 1974

- Bohlen, George A. (1980), Management Information Systems and Decision Sciences - 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.
- Drees, Doris A. (1956), Health and Sport Science - B.S., University of Dayton, 1956; M.A., Ohio State University, 1959; Ph.D., University of Iowa, 1968.
- Geiger, John O. (1970), Teacher Education - B.A., Marquette University, 1966; Ph.D., 1972.
- George, Norman (1962), Law - Ohio State University, 1950; M.B.A., University of Pittsburgh, 1954; Ph.D., Ohio State University, 1962; J.D., Salmon Chase College, 1967.
- Joseph, Ellis A. (1961), Education - A.B., University of Notre Dame, 1955; M.A., 1956; Ph.D., 1962; L.H.D. (Honorary), College of Mt. St. Joseph, 1989.
- Kohmescher, Rev. Matthew F., S.M. (1951), Religious Studies - A.B., University of Dayton, 1942; S.T.D., University of Fribourg, 1950; M.A., Western Reserve University, 1956.
- Noland, George B. (1955), Biology - B.S., University of Detroit, 1950; M.S., 1952; Ph.D., Michigan State University, 1955.
- O'Hare, J. Michael (1966), Physics - 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, Professor - B.A., Fordham College, 1966; M.A., State University of New York at Stony Brook, 1967; Ph.D., 1974.
- Peterson, Richard E. (1957), Mathematics - B.A., Hiram College, 1955; M.S., Purdue University, 1957.
- Springer, George H. (1946), Geology - A.B., Brown University, 1938; S.M., 1940.
- DISTINGUISHED TEACHING PROFESSOR**
- Burns, Rev. Norbert C., S.M. (1959), Religious Studies - B.A., University of Dayton, 1945; S.T.L., University of Fribourg, 1954; S.T.D., The Angelicum, 1955.
- RANKED FACULTY AND INSTRUCTIONAL STAFF**
- Aaron, Philip T., S.M. (1979), Campus Ministry, Administrative - B.S., University of Dayton, 1954; M.S., St. Louis University, 1964; Ph.D., Case Western Reserve University, 1973.
- Abueida, Atif A. (2000), Mathematics, Associate Professor - B.S., United Arab Emirates University, 1987; M.S., East Tennessee State University, 1995; Ph.D., Auburn University, 2000.
- Adams, Nicole (2007), English, Lecturer - B.A., Miami University, 1988; M.A., Wright State University, 1992.
- Adams, Shauna M. (1993), Teacher Education, Associate Professor - B.S., University of Dayton, 1979; M.S., 1986; Ed.D., University of Cincinnati, 1996.
- Agnew, Christopher (2006), History, Associate Professor - B.A., Linfield College, 1998; M.A., University of Washington, 2000.
- Ahoujja, Mohamed (2001), Physics, Associate Professor - B.A., Kenyon College, 1990; M.S., University of Cincinnati, 1993; Ph.D., 1996.
- Al-Akkad, Riad S. (1986), Civil and Environmental Engineering and Engineering Mechanics, Administrative - B.C.E., University of Dayton, 1980; M.S.C.E., 1981.
- Almazan-Holscher, Erin E. (2004) Visual Arts, Associate Professor - B.F.A., Minnesota State University, 2000; M.F.A., Rochester Institute of Technology, 2003.
- Altman, Aaron (2002), Mechanical and Aerospace Engineering, Associate Professor - B.S.E., Tulane University, 1990; M.S.E., University of Texas at Austin, 1994; Ph.D., Cranfield University, 2001.

Ambrosius, Joshua D. (2012), Political Science, Assistant Professor – B.A., York College of Pennsylvania, 2007; M.A., The Johns Hopkins University, 2007; Ph.D., University of Louisville, 2010.

Amin, Julius A. (1989), History, Professor - B.A., University of Cameroon, 1979; M.A., West Texas State University, 1983; Ph.D., Texas Tech University, 1988.

Anderson, Darrell F. (1974), Communication, Associate Professor - B.A., University of Dayton, 1969; M.F.A., Ohio State University, 1991.

Anderson, Gina L. (2002), Institute for Technology-Enhanced Learning, Clinical Faculty - B.S., University of Dayton, 1998; M.S., 2002.

Anderson, Maureen (2004), Law Library, Associate Professor - B.B.B., Marymount University, 1990; L.L.M., Pace University School of Law, 1995; J.D., Thomas M. Cooley Law School, 1994; M.L.S., Kent State University, 2001.

Angel, Mary A. (1988), Communication, Lecturer - B.A., University of Cincinnati, 1977; M.A., 1979; Ph.D., University of Dayton, 2006.

Anloague, Philip A. (2006), Health and Sport Science, Associate Professor - B.A., Cleveland State University, 1994; M.P.T., Andrews University, 1996; D.H.Sc., University of St. Augustine, 2004.

Apolito, Timothy (1998), Sociology, Anthropology, and Social Work, Coordinator, Community Relations - B.A., University of Dayton, 1967; M.Ed., Xavier University, 1969.

Archambeault, Deborah (2009), Accounting, Assistant Professor - B.B.A., Siena College, 1989; M.S., University of Albany, 1994; Ph.D., University of Alabama, 2000.

Arndt, Kelly (2007), Counselor Education and Human Services, Assistant Professor - B.Ed., University of Toledo, 1987; M.Ed., Bowling Green State University, 1992; Ph.D., University of Toledo, 2006.

Arnold, Jacqueline (2012), Teacher Education, Clinical Faculty – B.S., University of Dayton, 1993; M.S., University of Dayton, 1997; Ph.D., The Ohio State University, 2006.

Asari, Ramani Vijayan (2012), Engineering Technology, Lecturer – B.Sc., University of Kerala, India, 1981; M.Tech., Indian Institute of Technology, Madras, Chennai, India, 1989.

Asari, Vijayan K. (2010), Electrical and Computer Engineering, Professor, Endowed Chair in Wide Area Surveillance - B.S., University of Kerala, 1978; M.T., Indian Institute of Technology, 1984; Ph.D., 1994.

Avila-John, Karin (1993), Intensive English Program, Administrative - B.A., Instituto Nacional Superior del Profesorado Joaquin v Gongalez, 1979; M.A., Southern Illinois University, 1982.

Baldwin, Joni (2005), Teacher Education, Associate Professor - B.A., University of Kentucky, 1978; M.A., St. Joseph College, 1986; Ed.D., University of South Dakota, 2004.

Ballal, Dilip R. (1990), Mechanical and Aerospace Engineering, Professor, Hans von Ohain Professor in Mechanical and Aerospace Engineering - B.Sc. (Eng.), Maulana Azad College of Technology, 1967; M.Sc., Cranfield Institute of Technology, 1968; Ph.D., 1972.

Balster, Eric J. (2008), Electrical and Computer Engineering, Assistant Professor - B.S., University of Dayton, 1998; M.S., 2000; Ph.D., Ohio State University, 2004.

Banerjee, Partha P. (2000), Electrical and Computer Engineering, Professor - B.Tech., Indian Institute of Technology, Kharagpur, India, 1979; M.S., University of Iowa, 1980; Ph.D., 1983.

Bardine, Bryan A. (2001), English, Associate Professor - B.A., University of Dayton, 1990; M.A., 1993; Ph.D., Kent State University, 2001.

Barnes, Michael H. (1968), Religious Studies, Professor - A.B., St. Louis University, 1961; Ph.L., 1962; Ph.D., Marquette University, 1976.

Barrios, Joaquin (2009), Health and Sport Science, Orthopedic Coordinator - B.S., Creighton University, 2000; Ph.D., Duke University, 2003; Ph.D., University of Delaware, 2008.

Bartley, Karen (2005), History, Lecturer - B.A., University of Akron, 1990; M.A., Kent State University, 1993; Ph.D., 1999.

- Bauer, Jack J. (2006), Psychology, Associate Professor - B.A., College of the Holy Cross, 1989; Ph.D., Catholic University of America, 1999.
- Becker, Paul J. (2002), Sociology, Anthropology, and Social Work, Associate Professor - B.S., Indiana State University, 1987; M.S., 1989; Ph.D., Bowling Green State University, 1996.
- Bednarek, Janet R. (1992), History, Associate Professor - B.A., Creighton University, 1981; M.A., 1983; Ph.D., University of Pittsburgh, 1987.
- Benbow, Mark E. (2008), Biology, Assistant Professor - B.S., University of Dayton, 1994; Ph.D., 1999.
- Benin, Vladimir A. (2001), Chemistry, Associate Professor - B.S., University of Sofia, 1990; M.S., Vanderbilt University, 1993; Ph.D., 1995.
- Benjamin, John A. (2000), Music, Artist-in-Residence - B.S., B.M., University of Akron, 1985; M.M., University of Cincinnati, 1987.
- Bennett, Jana (2008), Religious Studies, Associate Professor - B.A., Colorado College, 1998; Ph.D., Duke University, 2005.
- Benson, Paul H. (1985), Philosophy, Professor - B.A., St. Olaf College, 1979; Ph.D., Princeton University, 1984.
- Beran, Donna L. (2012), Communication, Lecturer – B.A., Eastern Kentucky University; M.A., University of Cincinnati.
- Berger, Simon (2012), Accounting, Lecturer – Vordiplom, University of Augsburg, 2003; M.B.A., University of Dayton, 2005; Diplom-Kaufmann, University of Augsburg, 2006
- Berney, Rex L. (1978), Physics, Professor - B.S., University of Missouri, 1971; M.S., 1973; Ph.D., 1978.
- Berry, Melissa A. (2000), Psychology, Visiting Assistant Professor - B.S., Indiana University, 1991; M.A., University of Cincinnati, 1994; Ph.D., 1998.
- Bernstein, Elana R. (2011), Counselor Education and Human Services, Clinical Faculty – B.A., University of Michigan, 2003; M.S., University of Wisconsin, 2006; Ph.D., University of Wisconsin, 2010.
- Bickford, Deborah J. (1988), Management and Marketing, Professor - B.A., State University of New York, Cortland, 1974; M.S.B.A., University of Massachusetts, 1976; Ph.D., 1980.
- Biddle, James R. (1990), Teacher Education, Associate Professor - B.A., Bob Jones University, 1968; M.Ed., University of Cincinnati, 1970; Ph.D., Ohio State University, 1973.
- Bigelow, Kimberly E. (2009), Mechanical and Aerospace Engineering, Assistant Professor - B.S., Michigan State University, 2003; M.S., Ohio State University, 2005; Ph.D., 2008.
- Bilgin, Omer (2009), Civil Engineering, Assistant Professor - B.S., Middle East Technical University, 1991; M.S., Oklahoma State University, 1995; Ph.D., Cornell University, 1999.
- Billman, Brett N. (2011), Communication, Lecturer – B.A., University of Northern Iowa, 2002; M.A., University of Northern Iowa, 2004; Ph.D., Bowling Green State University, 2010.
- Bilocerkowycz, Jaro M. (1985), Political Science, Associate Professor - B.A., Eastern Illinois University, 1973; M.A., University of Washington, 1975; Ph.D., 1983.
- Biswas, Ann E. (2008), English, Lecturer - B.A., Wright State University, 1990; M.A., University of Dayton, 1994.
- Blust, Rebecca P. (1998), Engineering Technology, Associate Professor - B.T., University of Dayton, 1987; M.B.A., Wright State University, 1997; M.S.M.S., University of Dayton, 2004.
- Bobrowski, Paul M. (2012), Management Information Systems, Operations Management and Decision Sciences, Professor – B.S., United States Air Force Academy, 1972; M.S., Purdue University, 1976 ;Ph.D. Indiana University, 1985.
- Boehnlein, James M. (1992), English, Associate Professor - B.A., University of Dayton, 1973; M.S.Ed., 1978; M.A., 1988; Ph.D., Miami University, 1992.

Bogard, Treavor L. (2011), Teacher Education, Assistant Professor – B.S., McMurry University, 1997; M.A., University of Texas, 2005; Ph.D., University of Texas, 2010.

Borbonus, Dorian (2006), History, Assistant Professor - M.A., University of Pennsylvania, 2003; Ph.D., 2006.

Bourgeois, Jason P. (2012), Marian Library, Assistant Professor – B.A., Aquinas College, 1993; M.A., Marquette University, 1995; Ph.D., Marquette University, 2001; M.S., University of Illinois-Urbana-Champaign, Anticipated May 2012.

Bowman, Connie L. (1997), Teacher Education, Associate Professor - B.A., Capital University, 1975; M.Ed., University of Cincinnati, 1981; Ph.D., Ohio State University, 1995.

Brady, Thomas J. (1981), Accounting, Associate Professor - B.S., New York University, 1966; M.B.A., Adelphi University, 1968; Ph.D., St. Louis University, 1981.

Brahler, C. Jayne (2000), Health and Sport Science, Associate Professor - B.S., Montana State University, 1980; M.S., Washington State University, 1993; Ph.D., 1998.

Branick, Vincent P. (1979), Religious Studies, 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., 1969; D.Phil., 1971; S.S.B., Pontifical Biblical Institute, 1972; S.S.L., 1973; S.S.D., 1975; M.B.A., University of Dayton, 1983.

Brecha, Robert J. (1993), Physics, Professor - B.S., Wright State University, 1983; Ph.D., University of Texas at Austin, 1990.

Brenner, Susan W. (1988), Law, Professor - B.A., Southwestern Oklahoma State University, 1968; M.A., Kent State University, 1971; J.D., Indiana University, 1981.

Bresnahan, Aili W. (2012), Philosophy, Lecturer – B.A., Columbia University, 1990; M.A., Temple University, 2010.

Browning, Charles E. (1976), Materials Engineering, Professor - B.S., West Virginia University, 1966; M.S., Wright State University, 1970; Ph.D., University of Dayton, 1976.

Buckley, James P. (1993), Computer Science, Associate Professor - B.A., State University of New York at Oswego, 1981; M.E., Tulane University, 1990; Ph.D., 1994.

Budabin, Alexandra C. (2011), Political Science, Assistant Professor – B.A., Harvard University, 2000; M.A., New York University, 2003; Ph.D., The New School for Social Research, 2011.

Bunta, Silviu (2007), Religious Studies, Assistant Professor - B.A., University of Sibiu, 1997; M.A., University of Oradea, 1998; Ph.D., Marquette University, 2005.

Burkhardt, Thomas E. (1992), Vice President for Finance and Administrative Services, Administrative - B.S., University of Dayton, 1970.

Burky, Albert J. (1973), Biology, Professor - B.A., Hartwick College, 1964; Ph.D., Syracuse University, 1969.

Burnside, Christopher (2009), English, Lecturer - B.A., Kent State University, 2001.

Burrows, Ron J. (1981), Accounting, Associate Professor - B.S., Northern Illinois University, 1965; M.S., 1968; Ph.D., Pennsylvania State University, 1980.

Busch, Arthur (2006), Mathematics, Associate Professor - B.A., University of Washington, 1997; Ph.D., University of Colorado, 2006.

Cadegan, Una M. (1987), History, Associate Professor - B.A., University of Dayton, 1982; A.M., University of Pennsylvania, 1983; Ph.D., 1987.

Caporale, Tony (2007), Economics and Finance, Professor - B.A., New York University, 1986; M.A., 1988; Ph.D., George Mason University, 1992.

Carlson, Marybeth (1993), History, Associate Professor - B.A., University of Maryland, 1979; M.A., University of Wisconsin, 1986; Ph.D., 1992.

- Carrillo, Albino (2003), English, Associate Professor - B.A., University of New Mexico, 1986; M.F.A., Arizona State University, 1993.
- Carter, Michael (2006), History, Associate Professor - B.A., University of Southern California, 1999; M.A., 2003; Ph.D., 2006.
- Casola, Linda (2009), English, Lecturer - B.A., University of Dayton, 2004; M.A., 2007.
- Cassiman, Shawn A. (2007), Sociology, Anthropology, and Social Work, Assistant Professor - B.S., University of Wisconsin-Superior, 2002; M.S.S.W., University of Wisconsin-Madison, 2004.
- Castellano, Joseph F. (1999), Accounting, Professor - B.S., St. Louis University, 1964; M.S., 1965; Ph.D., 1971.
- Castro, Percio B. de, Jr. (1994), Languages, Professor - Law, Fluminense Federal University, Rio de Janeiro, 1984; M.A., Temple University, 1989, Ph.D., 1991.
- Chaffee, Eric C. (2007), Law, Professor - B.A., Ohio State University, 1999; J.D., University of Pennsylvania, 2002.
- Chang, Sanders S. (2010), Economics and Finance, Assistant Professor - B.A., University of California, Berkeley, 1997; M.A., Michigan State University, 2004; Ph.D., 2010.
- Chartoff, Richard P. (1984), Chemical and Materials Engineering, Professor - B.S., Case Institute of Technology, 1961; M.S., Princeton University, 1962; M.A., 1965; Ph.D., 1968.
- Chase, Donald V. (1993), Civil and Environmental Engineering and Engineering Mechanics, Visiting Professor - B.S.C.E., University of Kentucky, 1985; M.S.C.E., 1989; Ph.D., 1993.
- Chatterjee, Monish R. (2002), Electrical and Computer Engineering, Professor - B. Tech, Indian Institute of Technology, 1979; M.S.E.E., University of Iowa, 1981; Ph.D., 1985.
- Chelle, Robert F. (1999), L. William Crotty Center for Enterprise Leadership, Executive-in-Residence - B.A., Bethany College, 1970; M.B.A., University of Dayton, 1972.
- Chen, Rong-chin Carl (1977), Economics and Finance, Professor, William J. Hoben Research Scholar in International Business - B.A., National Taiwan University, 1969; M.S., Auburn University, 1973; Ph.D., University of Georgia, 1977.
- Cheney, Kristen E. (2006), Sociology, Anthropology, and Social Work, Assistant Professor - B.A., Albion College, 1994; M.A., University of California, 1998; Ph.D., 2004.
- Chenoweth, Richard K. (1983), Music, Professor & Graul Chair- B.M., Manhattan School of Music, 1970; M.M., University of Cincinnati, 1984; D.M.A., 1988.
- Cheung, Kwok Tung (2012), Philosophy Lecturer – B.B.A., Hong Kong University of Science and Technology, 1994; M.A., Hong Kong University of Science and Technology, 1998; Masters in Philosophy, Hong Kong Baptist University, 2001; Ph.D., Indiana University, Anticipated August 2012.
- Choi, Jun-Ki (2012), Mechanical and Aerospace Engineering, Assistant Professor – B.S., Hanyang University, 1997; M.S.E., University of Michigan, 1999; Ph.D., Purdue University, 2006.
- Chong, Andy C. (2011), Physics, Assistant Professor – B.S., University of Texas at Austin, 1995, 1996; M.S., Cornell University, 2007; Ph.D., Cornell University, 2008.
- Chuck, Leon (1989), Mechanical and Aerospace Engineering, Assistant Professor - B.S., University of Maryland, 1978; M.S., 1984.
- Church, Kevin M. (1990), Chemistry, Associate Professor - B.S., University of Nebraska, 1982; M.S., University of Nebraska Medical Center, 1985; Ph.D., 1988.
- Clarke, John V. (2002), Visual Arts, Associate Professor - B.F.A., University of Dayton, 1993; M.F.A., Rhode Island School of Design, 1996.

Cochran, Rebecca A. (1991), Law, Professor - B.A., Colorado College, 1974; M.A., Northwestern University, 1975; J.D., John Marshall Law School, 1984.

Collier, Trevor (2007), Economics and Finance, Assistant Professor - B.S., Centre College, 2002; M.A., Southern Methodist University, 2004; Ph.D., 2006.

Collins, Tracy L. (2012), Biology, Lecturer – B.S., The Ohio State University, 2000; M.S., University of Dayton, 2005; Ph.D., University of Dayton, 2010.

Collopy, Rachel (2005), Teacher Education, Associate Professor - B.A., Smith College, 1987; M.A., University of Michigan, 1993; Ph.D., 1999.

Comfort, Don (2008), Chemical and Materials Engineering, Assistant Professor - B.S., Case Western Reserve University, 2000; M.S., North Carolina State University, 2002; Ph.D., 2006.

Comfort, Kristen K. (2012), Chemical Engineering, Assistant Professor – B.S., University of Dayton, 2002; M.S., North Carolina State University, 2006; Ph.D., North Carolina State University, 2007.

Cook, Rebecca Ann (2002), Counseling Center, Administrative - B.S., Purdue University, 1976; M.S., Indiana University, 1990; Ph.D., University of Memphis, 2002.

Covert, Kerry (2008), Teacher Education, Assistant Professor - B.S., University of Dayton, 1997; M.S., Marygrove College, 2002; Ph.D., University of Cincinnati, 2007.

Costales, Kathleen A. (2004), Languages, Assistant Professor - B.A., Wittenberg University, 1986; M.A., Binghamton University; Ph.D., Vanderbilt University, 2004.

Courte, Dale E. (2002), Computer Science, Associate Professor - B.S., Wright State University, 1977; M.S., 1981; Ph.D., 2002.

Cox, Donna M. (1990), Music, Professor - B.A., Virginia Union University, 1979; M.M., Washington University, 1982; Ph.D., 1986.

Cox, Jeannette (2006), Law, Professor - B.A., Hanover College, 2001; J.D., Notre Dame Law School, 2005.

Craver, Bruce A. (1978), Physics, Associate Professor - B.S., Purdue University, 1969; M.S., 1971; Ph.D., 1976.

Crist, Maria Perez (1989), Law, Professor of Lawyering Skills - B.A., Northwestern University, 1978; J.D., University of Michigan, 1981.

Crosson, Garry (2007), Chemistry, Assistant Professor - B.A., Morgan State University, 1998; Ph.D., Pennsylvania State University, 2005.

Crosson, Kenya (2007), Civil and Environmental Engineering and Engineering Mechanics, Assistant Professor - B.A., Pennsylvania State University, 1998; M.A., 2000; Ph.D., 2005.

Crum, Roger J. (1991), Visual Arts, Professor - B.A., University of Michigan, 1985; M.A., 1986; Ph.D., University of Pittsburgh, 1992.

Crutcher, Robert J. (2001), Psychology, Associate Professor - A.B., University of California, Berkeley, 1974; M.A., University of Colorado at Boulder, 1989; Ph.D., 1992.

Curran, Daniel J. (2002), Office of the President, Administrative and Professor - B.S., Saint Joseph's University, 1973; M.A., Temple University, 1978; Ph.D., University of Delaware, 1980.

Cusella, Louis P. (1985), Communication, Professor - B.A., Kent State University, 1971; M.A., Ohio State University, 1974; Ph.D., Purdue University, 1978.

Dalton, Jennifer L. (2011), Health and Sport Science, Lecturer – B.S., The Ohio State University, 1992; M.S., University of New Haven, 1999.

Damasco, Ione (2006), Library, Associate Professor - B.A., Ohio State University, 1997; M.L.I.S., Kent State University, 2005.

Daniel-Cox, Minneta D. (2009), Music, Artist-in-Residence - B.A., Bowling Green State University, 2003; M.A., University of Michigan, 2005; D.M.A., 2008.

Daniels, Malcolm W. (1989), Electrical and Computer Engineering, Assistant Professor - B.Sc., University of Strathclyde, 1979; Ph.D., 1982.

- Daprano, Corinne M. (2001), Health and Sport Science, Associate Professor - B.A., Cleveland State University, 1985; M.Ed., 1994; Ph.D., Ohio State University, 2001.
- Darrow, David (1996), History, Associate Professor - B.A., University of Northern Iowa, 1986; M.A., University of Iowa, 1988; Ph.D., 1996.
- Dasgupta, Simanti (2009), Sociology, Anthropology, and Social Work, Assistant Professor - B.A., University of Calcutta, 1993; M.A., Delhi School of Economics, 1995; M.Phil., Delhi School of Economics, 1997; (cand.) Ph.D., New School for Social Research.
- Davidson, Edith F. (2010), Management and Marketing, Assistant Professor - B.B.A., Jackson State University, 1999; M.B.A., University of Mississippi, 2001; Ph.D., University of Tennessee, 2007.
- Davies, Susan (2006), Counselor Education and Human Services, Assistant Professor - B.A., University of North Carolina at Chapel Hill, 1995; M.S., Miami University, 1997; Sp.E., 1999.
- Davis, Susan T. (2001), Psychology, Assistant Professor - B.A., Miami University, 1986; M.A., 1989; Ph.D., 1991.
- Davis, Thomas I. (1990), Management Information Systems, Operations Management, and Decision Sciences, Lecturer - B.S., University of Wyoming, 1964; M.S., Air Force Institute of Technology, 1970.
- Davis-Berman, Jennifer L. (1986), Sociology, Anthropology, and Social Work, Professor - B.S., Denison University, 1979; M.S.W., Ohio State University, 1982; Ph.D., 1985.
- DeAloia, Leah (2005), English, Lecturer - B.A., Miami University, 1969; M.A., 1976; Ph.D., University of Michigan, 1981.
- Deep, Ronald (1989), Engineering Management and Systems, Associate Professor - B.S., U.S. Air Force Academy, 1960; M.S.E., Purdue University, 1970; Ph.D., Florida State University, 1976; Reg. Prof. Engr.
- DeHart, Rachel (2008), Library, Lecturer and University Archivist - B.A., Miami University, 2005; M.A., Wright State University, 2008.
- De Luca, Barbara M. (1975), Educational Leadership, Associate Professor - B.S., University of Dayton, 1971; M.Ed., Miami University, 1975; Ph.D., Ohio State University, 1984.
- DeMarco, Jr. George M. (1997), Health and Sport Science, Associate Professor - B.S., Bridgewater State College, 1978; M.S., Ithaca College, 1992; Ed.D., University of Georgia, 1998.
- Demmitt, Alan (1996), Counselor Education and Human Services, Associate Professor - B.Th., Atlanta Bible College, 1982; M.A., Northeast Louisiana University, 1991; Ph.D., Iowa State University, 1994.
- DesAutels, Peggy J. (2001), Philosophy, Professor - B.A., Principia College, 1977; M.S., Washington University, 1988; M.A., 1993; Ph.D., 1995.
- Detrio, John A. (1988), Electro-Optics, Associate Professor - B.S., Spring Hill College, 1959; M.S., University of Alabama, 1961.
- Diaz, Marian K. (2012), Religious Studies, Lecturer – B.A., University of Notre Dame, 1991; M.A., Catholic Theological Union, 1996; D. Min., Barry University, 2003
- Diaz, Miguel H. (2012), Religious Studies, Professor & University Professor of Faith and Culture – M.A., University of Notre Dame, 1992; Ph.D., University of Notre Dame, 2000.
- Dickey, Irene J. (1992), Management and Marketing, Lecturer - B.S., University of Dayton, 1982; M.B.A., Wright State University, 1987.
- Diestelkamp, Wiebke S. (1998), Mathematics, Associate Professor - M.S., University of Wisconsin-Milwaukee, 1992; Ph.D., 1998.
- Dixon, Lee (2009), Psychology, Assistant Professor - B.A., Western Kentucky University, 2000; M.A., 2002.
- Dodd, Gloria F. (2011), Roesch Library, International Marian Research Institute, Lecturer – B.A., Christendom College, 1987; M.Div., Dominican House of Studies, 1990; S.T.L., Dominican House of Studies, 1993; D.S.T., International Marian Research Institute, 2011.

Doench, Meredith (2010), English, Lecturer - B.S., Ball State University, 1998; M.A., University of Dayton, 2003; Ph.D., Texas Tech University, 2007.

Dolph, David (2005), Educational Leadership, Clinical Faculty - B.S., University of Dayton, 1970; M.S., Xavier University, 1973; Ph.D., University of Dayton, 1994.

Donahoe-Fillmore, Betsy K. (2006), Health and Sport Science, Associate Professor - B.S., Ohio State University, 1988; M.S., University of Indianapolis, 1992; Ph.D., Union Institute and University, 2002.

Donaldson, Steven L. (2006), Civil and Environmental Engineering and Engineering Mechanics, Assistant Professor - B.S., Purdue University, 1981; M.S., University of Dayton, 1987; Ph.D., Stanford University, 1993.

Donnelly, Patrick G. (1979), Sociology, Anthropology, and Social Work, Professor - B.S., St. Joseph's College, 1974; M.A., University of Delaware, 1977; Ph.D., 1981.

Dorf, Samuel N. (2010), Music, Assistant Professor - B.A., Boston University, 2002; B.M., 2002; M.A., Tufts University, 2004; Ph.D., Northwestern University, 2009.

Doty, John H. (2008), Engineering Management and Systems, Associate Professor - B.S., Clarkson University, 1980; B.S., Air Force Institute of Technology, 1984; M.S., 1995; Ph.D., Purdue University, 1999.

Doyle, Dennis M. (1984), Religious Studies, Professor - B.A., LaSalle College, 1974; M.A., Ohio University, 1978; M.A., Catholic University of America, 1980; Ph.D., 1984.

Doyle, George R., Jr. (1982), Mechanical and Aerospace Engineering, Professor - B.S.A.E., Purdue University, 1965; M.S.A.E., 1967; Ph.D., University of Akron, 1973; Reg. Prof. Engr.

Driskell, Shannon, O.S. (2003), Mathematics, Associate Professor - B.S., Edinboro University, 1992; M.A., East Carolina University, 1997; (cand.) Ph.D., University of Virginia, 2003.

Duncan, Bradley D. (1991), Electrical and Computer Engineering and Electro-Optics, Professor - B.S.E.E., Virginia Polytechnic Institute and State University, 1986; M.S., 1988; Ph.D., 1991.

Dunlevy, Linda (1994), Communication, Assistant Professor - B.A., University of Kentucky, 1970; M.F.A., Indiana University, 1987.

Dunne, E. James (1982), Management Information Systems, Operations Management, and Decision Sciences, Professor - B.S., St. Louis University, 1962; M.S., Air Force Institute of Technology, 1964; Ph.D., University of Illinois, 1971.

Durham, James G. (1980), Law, Professor - A.B., University of California, Berkeley, 1973; J.D., University of California, Davis, 1976.

Durmusoglu, Serdar (2007), Management and Marketing, Assistant Professor - B.S., Bogazrai University, 1997; M.B.A., Purdue University, 2001.

Edmonson, Charlie P. (1993), Engineering Technology, Professor - B.S., Tennessee State University, 1964; M.S., University of Pittsburgh, 1968.

Eggemeier, F. Thomas (1986), Psychology, Professor - B.A., University of Dayton, 1967; M.A., Ohio State University, 1969; Ph.D., 1971.

Elhamri, Said (1997), Physics, Professor - B.A., Kenyon College, 1989; M.S., University of Cincinnati, 1991; Ph.D., 1995.

Elliott, Susan (2003), Law Library, Associate Professor - J.D., University of Dayton, 1987; M.L.S., Kent State University, 2002.

Eloe, Paul W. (1980), Mathematics, Professor - B.A., Vanderbilt University, 1975; M.S., University of Missouri, 1977; Ph.D., 1980.

Elsass, Michael (2008), Chemical and Materials Engineering, Assistant Professor - B.S., University of Dayton, 1992; M.S., Ohio State University, 1997; Ph.D., 2001.

Elvers, Greg C. (1990), Psychology, Associate Professor - B.S., Purdue University, 1984; B.A., 1985; M.S., 1987; Ph.D., 1989.

- Engelhardt, Elizabeth (2005), Teacher Education, Clinical Faculty - B.A., Antioch University, 1998; M.A., Pacific Oaks College, 2002.
- Engle, Marianne S. (2012), Psychology, Lecturer - B.S., University of Wisconsin, 1990; Ph.D., Indiana University, 2001.
- Enns, Harvey G. (1999), Management Information Systems, Operations Management, and Decision Sciences, Associate Professor - B.A., University of Winnipeg, 1982; B. Commerce, University of Manitoba, 1985; M.B.A., University of Minnesota, 1991; Ph.D., University of Western Ontario, 1999.
- Ensalaco, Mark (1989), Political Science, Associate Professor - B.A., State University of New York at Buffalo, 1981; M.T., Harvard University, 1984; Ph.D., State University of New York at Buffalo, 1991.
- Erdei, John E. (1983), Physics, Associate Professor - B.S., Cleveland State University, 1973; M.S., 1976; Ph.D., University of Cincinnati, 1983.
- Ervin, Jamie S. (1991), Mechanical and Aerospace Engineering, Professor - B.S.M.E., Michigan Technological University, 1984; M.S.M.E., 1986; Ph.D., University of Michigan, 1991.
- Escobar, Hector (2007), Library, Assistant Professor - B.A., University of Texas, 1998; M.S., 2000.
- Espinoza, Isabel J. (1995), Languages, Associate Professor - B.A., Pontificia Universidad Javeriana, 1979; M.Ed., State University of New York at Buffalo, 1990; Ph.D., 1995.
- Eustace, Deogratias (2005), Environmental Engineering & Engineering Mechanics, Associate Professor - B.S., University of Dar-Es-Salaam, 1992; M.S., 1997; Ph.D., Kansas State University, 2001.
- Evwaraye, Andrew O. (1995), Physics, Professor - B.S., University of Dayton, 1964; Ph.D., University of Saskatchewan, 1969.
- Eylon, Daniel (1986), Chemical and Materials Engineering, Professor - B.Sc., Israel Institute of Technology, 1966; M.Sc., 1968; D.Sc., 1972.
- Fackovec, William M., S.M. (1960), Library, Associate Professor - B.S.Ed., University of Dayton, 1949; M.S.L.S., Western Reserve University, 1959.
- Falkowski, Sean A. (2003), Engineering Technology, Associate Professor - B.S.M.E., GMI Engineering Management Institute, 1995; M.S.E.M., University of Dayton, 2002.
- Farrelly, James P. (1967), English, Professor - B.A., Providence College, 1964; M.A., University of Dayton, 1966; Ph.D., Boston University, 1974.
- Farris, Phillip (2000), Music, Artist-in-Residence - B.A., B.M., University of Washington, 1980; M.M., University of Cincinnati, 1986.
- Ferguson, Richard T. (1973), Fitz Center for Leadership in Community, Administrative - B.A., University of Dayton, 1973; M.A., Ohio State University, 1993.
- Ferguson, Susan M. (1990), Center for Catholic Education, Administrative - B.S., University of Dayton, 1975; M.S., 1982.
- Ferratt, Thomas W. (1986), Management Information Systems, Operations Management, and Decision Sciences, Professor, Sherman-Standard Register Professor of MIS - B.B.A., University of Notre Dame, 1968; M.B.A., Ohio State University, 1973; Ph.D., 1974.
- Figuroa, Daniel (2005), Languages, Lecturer - B.A., Universidad de Concepcion, 1989; M.Ed., Wright State University, 2004.
- Fischer, Marilyn R. (1992), Philosophy, Professor - B.A., Wheaton College, 1971; M.A., Boston University, 1975; Ph.D., 1978.
- Fitz, Raymond L., S.M. (1969), Engineering Management and Systems, Professor, Ferree Professor in Social Justice - B.E.E., University of Dayton, 1964; M.S., Polytechnic Institute of Brooklyn, 1967; Ph.D., 1970.
- Flach, Lawrence (1989), Chemical and Materials Engineering, Professor - B.Sc., University of Cape Town, 1980; M.Sc., 1982; Ph.D., University of Colorado, 1989.

- Flanagan, Melissa T. (1989), Student Activities, Administrative - B.S., Western Illinois University, 1986; M.A., Bowling Green State University, 1988.
- Fleischmann, Ellen L. (1998), History, Associate Professor - B.A., Wesleyan University, 1977; Ph.D., Georgetown University, 1996.
- Flockerzie, Lawrence J. (1987), History, Associate Professor - B.A., University of Massachusetts, 1976; M.A., Indiana University, 1982; Ph.D., 1987.
- Flynn, Roland R. (2001), Communication, Lecturer - B.A., University of Wisconsin-Eau Claire, 1982.
- Forbis, Jeremy S. (2008), Sociology, Anthropology, and Social Work, Assistant Professor - B.S., State University of New York at Brockport, 2001; M.A., Ohio State University, 2006; Ph.D., 2008.
- Forlani, Victor M., S.M. (1995), Management and Marketing, Lecturer - B.S., University of Dayton, 1965; B.S.Ed., 1965; M.S., Syracuse University, 1973; M.B.A., University of Pittsburgh, 1989; D.B.A., Boston University, 1995.
- Fouke, Daniel C. (1988), Philosophy, Professor - B.A., University of Iowa, 1975; M.A., University of Chicago, 1983; Ph.D., 1986.
- Frasca, Ralph R. (1972), Economics and Finance, Professor - B.A., C.W. Post College, 1967; M.A., Indiana University, 1971; Ph.D., 1975.
- Fried, Joel R. (2010), Chemical and Materials Engineering, WBI Endowed Chair in Nanomaterials – B.S., University of Dayton, 1971; M.S., University of Dayton, 1972; M.S., University of Massachusetts, 1975; Ph.D., University of Massachusetts, 1976.
- Friese, Carl F. (1992), Biology, Associate Professor - B.S., University of Connecticut, 1982; M.S., University of Rhode Island, 1984; Ph.D., Utah State University, 1991.
- Gabbe, Myrna (2005), Philosophy, Associate Professor - B.A., University of Wisconsin, 1995; Ph.D., University of Pennsylvania, 2005.
- Gallo, Gerry (2007), Health and Sport Science, Lecturer - B.S., Lake Superior State University, 2002; B.Ed., Lakehead University, 2003; M.S., University of Dayton, 2006.
- Gallagher, Colleen E. (2012), Teacher Education, Clinical Faculty – B.A., Xavier University, 2000; M.S., Georgetown University, 2005; Ph.D., Georgetown University, anticipated May 2012.
- Gannon, Loren S., Jr. (1975), History, Adjunct Professor - B.S., University of Omaha, 1963; M.A., University of Dayton, 1970.
- Gardstrom, Susan C. (1998), Music, Associate Professor - B.M., Michigan State University, 1981; M.A., Western Michigan University, 1985; Ph.D., Michigan State University, 2004.
- Gauder, Heidi (1998), Library, Associate Professor - B.A., University of Dayton, 1990; M.A., Purdue University, 1992; M.L.S., Indiana University, 1995.
- Gentner, John (2006), Management and Marketing, Lecturer - B.A., Capital University, 2003; M.B.A., University of Dayton, 2004.
- Gerla, Harry S. (1979), Law, Professor - B.A., Queens College, 1970; M.A., University of Florida, 1972; J.D., Ohio State University, 1975.
- Davies, Susan (2006), Counselor Education and Human Services, Assistant Professor - B.A., University of North Carolina at Chapel Hill, 1995; M.S., Miami University, 1997; Sp.E., 1999.
- Ghere, Richard K. (1984), Political Science, Associate Professor - B.A., Concordia College, 1968; M.A., University of Toledo, 1970; Ph.D., Wayne State University, 1975.
- Gigliero, Joan (2006), Library, Associate Professor - B.A., Ohio State University, 1974; M.A., Case Western Reserve University, 1977; M.L.S., Indiana University, 1988.
- Glenn, Terri (2007), Health and Sport Science, Clinical Faculty - B.S., Daemen College, 1980; M.S., Ohio State University, 1986; Ph.D., 1990.
- Globig, James E. (1998), Engineering Technology, Associate Professor - B.E.T., University of Dayton, 1979; M.B.A., Miami University, 1982; M.S.M.S., University of Dayton, 2003.

- Gold, Scott A. (2010), Chemical and Materials Engineering, Associate Professor & ORS Endowed Chair in Multiscale Composites – B.S., University of Kentucky, 1996; M.S., Georgia Institute of Technology, 1999; Ph.D., Arizona State University.
- Goldman, Daniel (1997), Geology, Associate Professor - B.A., State University of New York at Buffalo, 1985; M.A., 1987; Ph.D., 1993.
- Gooch, Peter G. (1986), Visual Arts, Associate Professor - B.S., B.F.A., Eastern Michigan University, 1978; M.F.A., Western Michigan University, 1984.
- Goodnight, Jackson A. (2010), Psychology, Assistant Professor - B.S., Xavier University, 2002; Ph.D., Indiana University, 2010.
- Gorman, Michael F. (2002), Management Information Systems, Operations Management, and Decision Sciences, Professor - B.S., Xavier University, 1987; M.A., Indiana University, 1990; Ph.D., 1994.
- Gorton, Robert B. (1969), Mathematics, Associate Professor - B.S., Illinois Institute of Technology, 1964; M.S., 1966; Ph.D., 1970.
- Gowda, Raghava G. (1983), Computer Science, Associate Professor - B.S.E.E., Banaras Hindu University, 1971; M.B.M., 1973; M.B.I.S., Georgia State University, 1981; Ph.D., 1988.
- Guadalupe-Layman J. (2011), Psychology, Lecturer – B.S., Swarthmore College, 1990; M.S., Ohio University, 1993; Ph.D., Ohio University, 1996.
- Gratto, Sharon Davis (2008), Music, Professor - D.M.A., Catholic University of America, 1994.
- Greene, Frederick D. (2004), Law, Professor - B.A., Columbia University, 1972; Ed.M. Harvard University 1984; J.D., Yale, 1987.
- Greenlee, Janet S. (1999), Accounting, Associate Professor - B.S., Ohio State University, 1967; M.S.W., West Virginia University, 1973; M.B.A., University of California, Los Angeles, 1978; Ph.D., University of Kentucky, 1993.
- Griffin, James F. (1985), Chemical and Materials Engineering, Adjunct Professor - B.A., Oberlin College, 1961; M.S.Ch.E., Ohio University, 1967.
- Griffin, Jeffrey L. (1990), Communication, Associate Professor - A.B., University of North Carolina, 1979; M.A., University of Texas, 1983; Ph.D., University of North Carolina, 1990.
- Gullen, Amy (2010), Library, Assistant Professor - B.A., Ohio Wesleyan University, 2005; M.S., University of Illinois, 2010.
- Gustafson, Elizabeth F. (1983), Economics and Finance, Associate Professor - B.A., Duke University, 1970; Ph.D., University of North Carolina, 1974.
- Haan, Jennifer E. (2010), English, Assistant Professor - B.A., Calvin College, 1999; M.A., Purdue University, 2001; Ph.D., 2009.
- Hagel, Thomas L. (1982), Law, Professor - B.S., University of Nebraska, 1972; J.D., 1976; LL.M., Temple University, 1982.
- Hageman, John B. (2010), Mechanical and Aerospace Engineering, Lecturer - B.S., University of Dayton, 1973.
- Hall, Scott E. (1996), Counselor Education and Human Services, Associate Professor - B.S.B.A., West Carolina University, 1986; M.Ed., Ohio University, 1991; Ph.D., Ohio State University, 1994.
- Hall, Stephen R. (2007), Management Information Systems, Operations Management, and Decision Sciences, Lecturer - B.S., Ohio State University, 1971; M.S., University of Dayton, 1976.
- Hallinan, Charles G. (1983), Law, Professor - B.A., University of Dayton, 1969; J.D., University of Toledo, 1977; LL.M., Yale University, 1983.
- Hallinan, Kevin P. (1988), Mechanical and Aerospace Engineering, Professor - B.S., University of Akron, 1982; M.S., Purdue University, 1984; Ph.D., Johns Hopkins University, 1988.
- Han, Jee Hee. (2006), Communication, Assistant Professor - B.A., Sogang University, 1997; M.A., 1999; M.A., University of Georgia, 2001; M.S., 2002; Ph.D., Purdue University, 2007.

Hanley, Thomas L. (1982), Law Library, Assistant Professor - A.B., Earlham College, 1970; J.D., Indiana University, 1973; M.S.L.S., Western Michigan University, 1975.

Hardie, Russell C. (1993), Electrical and Computer Engineering, Professor - B.E.S., Loyola College, 1988; M.E.E., University of Delaware, 1990; Ph.D., 1992.

Haritashya, Umesh (2008), Geology, Visiting Assistant Professor - Ph.D., Indian Institute of Technology, 2005.

Harmon, Tracy (2009), Management and Marketing, Assistant Professor - B.S., Florida A&M University, 1998; M.B.A., Rollins College, 2002; Ph.D., University of Florida, 2007.

Harrison, William B. (2010), Mathematics, Lecturer - B.A., Carleton College, 1974; M.S.T., University of Chicago, 1976.

Harrod, Steven (2007), Management Information Systems, Operations Management, and Decision Sciences, Assistant Professor - B.S., Trinity College, 1989; M.S., Massachusetts Institute of Technology, 1993; M.S., University of Cincinnati, 2005; Ph.D., 2007.

Hart, Patricia M. (1988), Teacher Education, Professor - B.S., University of Dayton, 1973; M.S., 1983; Ph.D., Ohio State University, 1989.

Hartley, Linda A. (1991), Music, Professor - B.M., Bowling Green State University, 1979; M.M., Kent State University, 1987; Ph.D., 1991.

Hary, Nicoletta Mattioli (1964), Library, Professor - Litt.D., Istituto Universitario Orientale, Naples, 1951; Diploma in Library Science, Vatican Library School, Rome, 1952; Ph.D., Indiana University, 1991.

Hassell Hughes, Sheila M. (1998), English, Associate Professor - B.A., University of British Columbia, 1988; M.A., University of Toronto, 1991; Ph.D., Emory University, 1997.

Haus, Joseph W. (1999), Electro-Optics, Professor - B.S., John Carroll University, 1971; M.S., 1972; Ph.D., Catholic University of America, 1974.

Heitmann, John A. (1984), History, Professor - B.S., Davidson College, 1970; M.A., Clemson University, 1974; Ph.D., Johns Hopkins University, 1983.

Henderson, Kathleen D. (1982), Ryan C. Harris Learning Teaching Center, Administrative - B.S., University of Dayton, 1986; M.S., 1993.

Henson, Jayne R. (2011), Communication, Lecturer - B.A., Ball State University, 2002; M.A., Ball State University, 2004; Ph.D., University of Missouri, 2010.

Herrelko, Janet M. (1999), Teacher Education, Associate Professor - B.A., Regis College, 1970; M.A., University of Maryland, 1971; Ed.D., University of Massachusetts/Lowell, 1996.

Hess, Jonathan A. (2008), Communication, Professor - B.S., Manchester College, 1989; M.A., Ohio University, 1991; Ph.D., University of Minnesota, 1996.

Hicks, Emily A. (2002), Library, Associate Professor - B.A., Transylvania University, 1991; M.L.S., University of Kentucky, 1993.

Higgins, Aparna W. (1984), Mathematics, Professor - B.Sc., University of Bombay, 1978; M.S., University of Notre Dame, 1980; Ph.D., 1983.

Hiller, James M. (2001), Music, Lecturer - B.M., Capital University, 1982; M.M.T., Temple University, 1994; MT-BC.

Hirakawa, Keigo (2009), Electrical and Computer Engineering, Assistant Professor - B.S.E., Princeton University, 2000; M.S., Cornell University, 2003; Ph.D., 2005; M.M., New England Conservatory of Music, 2006.

Hirunyawipada, Tanawat (2011), Management and Marketing, Assistant Professor - B.Eng., Chiang Mai University, 1993; M.B.A., National Institute of Development Administration, 1998; Ph.D., University of North Texas, 2007.

Hoffmeister, Thaddeus (2007), Law, Associate Professor - B.A., Morgan State University, 1988; LL.M., Georgetown University, 2002.

Hovey, Peter W. (2001), Mathematics, Associate Professor - B.S., University of Dayton, 1975; M.S., University of Kentucky, 1977; Ph.D., 1980.

- Howarth, Cooley R. (1976), Law, Professor - B.A., Michigan State University, 1971; J.D., University of Denver, 1976.
- Huacuja, Judith L. (2000), Visual Arts, Associate Professor - B.A., University of Houston, 1993; B.F.A., 1993; M.A., Rice University, 1995; Ph.D., University of California, Santa Barbara, 2000.
- Hudson, Natalia F. (2007), Political Science, Assistant Professor - B.A., University of Dayton, 2001; M.A., University of Connecticut, 2003; Ph.D., 2007.
- Hume, Laura H. (1989), History, Associate Professor - B.A., Western Carolina University, 1983; M.A., University of Cincinnati, 1985; Ph.D., 1993.
- Hunley, Sawyer (1999), Counselor Education and Human Services, Associate Professor - B.S., Miami University, 1976; M.S., 1986; Ed.S., 1990; Ph.D., University of Cincinnati, 1998.
- Hunn, Diana M. (1992), Teacher Education, Associate Professor - B.S., Miami University, 1972; M.Ed., 1973; Ph.D., Indiana University, 1986.
- Ilg, Timothy J. (1998), Educational Leadership, Associate Professor - B.A., Malone College, 1968; M.A., Ohio State University, 1972; Ph.D., 1982.
- Inglis, John A. (1993), Philosophy, Professor - B.A., University of St. Thomas, 1977; M.Div., University of Toronto, 1982; M.A., University of Houston, 1989; Ph.D., University of Kentucky, 1993.
- Ingram, Jefferson L. (1978), Political Science, Professor - B.S.Ed., University of Dayton, 1972; M.A., 1977; J.D., 1978.
- Islam, Muhammad (1985), Mathematics, Professor - B.S., University of Dhaka, Bangladesh, 1972; M.S., Carleton University, Ottawa, 1980; Ph.D., Southern Illinois University, 1985.
- Jackson, Kurt (2006), Health and Sport Science, Associate Professor - B.S., Loma Linda University, 1992; M.P.T., 1992; Ph.D., Union Institute and University, 2002.
- Jacobs, Mark (2009), Management Information Systems, Operations Management, and Decision Sciences, Assistant Professor - B.S., California Polytechnic State University, 1988; M.B.A., University of Minnesota, 2003; Ph.D., Michigan State University, 2008.
- Jaffe, Tracey L. (2012), History, Lecturer – B.A., Pomona College, 1994; M.A., University of Pittsburgh, 1997; Ph.D., University of Pittsburgh, 2009.
- Jain, Vinod K. (1979), Mechanical and Aerospace Engineering, Professor - B.S.M.E., University of Roorkee, India, 1964; M.S.M.E., 1970; Ph.D., Iowa State University of Science and Technology, 1980.
- James, V. Denise (2008), Philosophy, Assistant Professor - B.A., Spellman College, 1997; M.A., Emory University, 2007.
- Janney, Jay J. (2001), Management and Marketing, Associate Professor - B.A., Ball State University, 1984; M.B.A., 1986; Ph.D., University of Kentucky, 1999.
- Jenkins, Fred W. (1987), Library, Professor - B.A., University of Cincinnati, 1979; A.M., University of Illinois, 1981; Ph.D., 1985; M.S., 1986.
- Jennings, Glenna (2011), Visual Arts, Lecturer – B.A., Pepperdine University, 1995, 1995; B.F.A., Art Center College of Design, 2004; M.F.A., University of California, 2010.
- Jipson, Arthur J. (2001), Sociology, Anthropology, and Social Work, Associate Professor - B.A., University of Minnesota, 1988; M.A., Bowling Green State University, 1991; Ph.D., 1995.
- John, Barbara H. (2002), Economics and Finance, Lecturer - B.A., Dartmouth College, 1977; M.A., University of Colorado at Boulder, 1985.
- Johnson, David W. (1984), Chemistry, Associate Professor - B.S., Illinois Institute of Technology, 1979; Ph.D., 1983.
- Johnson, Kelly S. (2002), Religious Studies, Associate Professor - B.A., University of Notre Dame, 1986; M.A., 1987; Ph.D., Duke University, 2001.

- Johnson, Patricia A. (1979), Philosophy, Professor - B.A., Eckerd College, 1967; M.A., Columbia University, 1969; M.A., University of Toronto, 1974; Ph.D., 1979.
- Johnston, William (2006), Religious Studies, Associate Professor - B.A., University of Notre Dame, 1972; M.A., 1977; Ph.D., 1980.
- Jones, Jeffrey C. (2002), Visual Arts, Associate Professor - B.F.A., University of Tennessee at Chattanooga, 1998; M.F.A., University of Cincinnati, 2000.
- Jones, Robert B. (1992), Music, Assistant Professor - B.M.E., Appalachian State University, 1972; M.M., University of North Carolina, 1975; D.M.A., University of Miami, 1991.
- Kallenberg, Brad J. (2001), Religious Studies, Professor - B.S. Ed., University of Minnesota, 1981; M.A., Fuller Theological Seminary, 1992; Ph.D., 1998.
- Kanet, John J. (2002), Management Information Systems, Operations Management, and Decision Sciences, Professor, Niehaus Chair in Operations Management - B.S., Lehigh University, 1967; M.B.A., Loyola College, 1971; Ph.D., Pennsylvania State University, 1979.
- Kango-Singh, Madhuri (2009), Biology, Assistant Professor - B.S., Vikram University, 1989; M.S., Devci Ahilya University, 1991; Ph.D., 1997.
- Kashani, A. Reza (1994), Mechanical and Aerospace Engineering, Professor - B.S.M.E., Sharif University, 1977; M.S.M.E., University of Wisconsin, 1979; M.S., 1988; Ph.D., University of Wisconsin, 1989.
- Katsuyama, Ronald M. (1973), Psychology, Associate Professor - B.S., University of California, 1966; Ph.D., Vanderbilt University, 1977.
- Kavanaugh, Jeffrey L. (2003), Biology, Lecturer - B.S., University of Kansas, 1984; M.S., 1988; Ph.D., Virginia Polytechnic Institute, 1998.
- Kearns, Robert J. (1984), Biology, Professor - B.S., Washington State University, 1968; M.S., 1975; Ph.D., 1978; M.T. (ASCP), 1971.
- Kebede, Messay (1998), Philosophy, Professor - B.A., University of Grenoble, France, 1971; M.A., 1973; Ph.D., 1976.
- Keen, Virginia (2007), Mathematics, Assistant Professor - B.A., Western Michigan University, 1972; M.A., 1975; Ph.D., Michigan State University, 1994.
- Keil, R. Gerald, (1969), Chemistry, Professor - B.S., Villanova University, 1963; Ph.D., Temple University, 1967.
- Kelly, Katherine L. (2010), Library, Assistant Professor - B.S., Ohio University, 2008; M.S., Syracuse University, 2010.
- Kelly, Mary Kay (2005), Teacher Education, Associate Professor - B.A., College of St. Benedict, 1987; B.S., University of Minnesota, 1990; M.Ed., Miami University, 1996; Ph.D., 2001.
- Kenworthy, Thomas P. (2011), Management and Marketing, Assistant Professor - B.A., Memorial University, 1994; M.B.A., University of Calgary, 1998; Ph.D., University of Calgary, 2008.
- Kiewitz, Christian (2002), Management and Marketing, Associate Professor - M.A., Johannes Gutenberg Universitat, Germany, 1995; M.A., Auburn University, 1998; Ph.D., University of Alabama, 2002.
- Kimbrough, R. Alan (1969), English, Professor - B.A., Carthage College, 1965; A.M., Brown University, 1966; Ph.D., 1974.
- King, Wesley C., Jr. (1996), Management and Marketing, Professor - B.B.A., Valdosta State College, 1975; J.D., University of Georgia, 1983; Ph.D., 1988.
- Kinnucan-Welsch, Kathryn (1997), Teacher Education, Professor - B.A., University of Illinois at Urbana-Champaign, 1971; M.A., Western Michigan University, 1988; Ed.D., 1995.
- Kirschman, Keri (2005), Psychology, Associate Professor - B.A., Denison University, 1997; M.A., University of Kansas, 1999; Ph.D., 2003.
- Kissock, John K. (1995), Mechanical and Aerospace Engineering, Professor - B.S., University of Colorado, 1982; M.S., Washington University, 1989; Ph.D., Texas A&M University, 1993.

- Kizer, Tremon B. (2010), Music, Lecturer - B.A., Kansas State University, 2002; M.A., Central Missouri State University, 2010.
- Klco, Daniel L., S.M. (2001), Biology, Lecturer - B.A., Western Michigan University, 1972; M.P.S., Loyola University, Chicago, 1981; M.S. University of Dayton, 1992.
- Kloppenber, Lisa A. (2001), Law, Professor - B.A., University of Southern California, 1984; J.D., 1987.
- Kowalski, Theodore J. (2000), Educational Leadership, Professor, Kuntz Chair in Educational Leadership - B.S., Indiana State University, 1965; M.S., 1968; Ph.D., 1971.
- Kozak, Michael J. (2008), Engineering Technology, Assistant Professor - B.S., University of Akron, 1982; M.S.M.E., University of Cincinnati, 1986; Reg. Prof. Engr.
- Kozar, Rev. Joseph F., S.M. (1985), Religious Studies, Assistant Professor - B.A., University of Dayton, 1969; M.A., 1973; M.Div., University of St. Michael's College, Toronto, 1976; Ph.D., 1989.
- Koziol, Andrea M. (1993), Geology, Associate Professor - B.A., Boston University, 1983; Ph.D., University of Chicago, 1988.
- Krakovski, Rebecca J. (2000), Mathematics, Associate Professor - B.S., Allegheny College, 1986; M.S., North Carolina State University, 1995; Ph.D., 2000.
- Krane, Carissa M. (2001), Biology, Associate Professor - B.S., Marquette University, 1990; Ph.D., Washington University, 1996.
- Krieger, Michael T. (1983), Library, Professor - B.S., Central Michigan University, 1972; M.L.S., Western Michigan University, 1976.
- Krugh, Janis L. (1987), Languages, Associate Professor - B.A., Ohio Northern University, 1974; M.A., University of Toledo, 1979; Ph.D., University of Pittsburgh, 1986.
- Krummel, Miriamne A. (2002), English, Associate Professor - B.A., University of Connecticut, 1988; M.A., Hunter College, 1992; Ph.D., Lehigh University, 2002.
- Krystofik, Anthony (2006), Management and Marketing, Lecturer - B.S., University of Dayton, 1978; M.B.A., 1982.
- Kumar, Binod (2006), Mechanical and Aerospace Engineering, Professor - B.S., Banaras Hindu University, 1967; M.S., Pennsylvania State University, 1973; Ph.D., 1976.
- Kunz, Benjamin R. (2010) Psychology, Assistant Professor - B.S., University of Utah, 2001; M.S., 2007; Ph.D., 2010.
- Kurt, Layla (2012), Counselor Education, Clinical Faculty – B.S., Bowling Green State University, 1996; M. Ed., Bowling Green State University, 2002; Ph.D., University of Toledo, anticipated August 2012.
- Kwon, Suki (2004), Visual Arts, Associate Professor - B.A., Dae Gu University, 1999; M.A., University of Iowa; M.F.A., 2003.
- Lafdi, Kahlid (2001), Chemical and Materials Engineering, Professor & WBI Endowed Chair in Nanmaterials – M.S., Nancy University, 1987; Ph.D., 1989; D.Sc., 1991.
- Langhorne, Anna L. (2001), Communication, Assistant Professor - B.A., State University of New York at Buffalo, 1993; M.A., 1998; Ph.D., 2000.
- Larson, Robert K. (2001), Accounting, Professor - B.S., George Fox College, 1980; M.B.A., Portland State University, 1987; Ph.D., University of Utah, 1993.
- Lasley, Thomas J., II (1983), Teacher Education, Professor - B.S., Ohio State University, 1969; M.A., 1972; Ph.D., 1978.
- Lau, Terence J. (2002), Management and Marketing, Associate Professor - B.A., Wright State University, 1995; J.D., Syracuse University, 1998.
- Laubach, Lloyd L. (1980), Health and Sport Science, Associate Professor - B.S., Central State University, 1961; M.S., University of Oregon, 1962; Ph.D., Ohio State University, 1970.
- Laufer-Ukeles, Pamela (2006), Law, Associate Professor - B.A., Columbia University, 1996; J.D., Harvard Law School, 2001.

- Lee, C. William (1982), Chemical and Materials Engineering, Professor - B.S., National Taiwan University, 1976; M.S., University of Akron, 1979; Ph.D., Ohio State University, 1982.
- Leming, Laura M., F.M.I. (1999), Sociology, Anthropology, and Social Work, Associate Professor - B.A., St. Mary's University of San Antonio, 1979; M.A., University of Dayton, 1987; Ph.D., Boston College, 1999.
- Levering, Matthew (2009), Religious Studies, Associate Professor - B.A., University of North Carolina at Chapel Hill, 1993; M.A., Duke Divinity School, 1996; Ph.D., Boston College, 2000.
- Li, Xiaoli (2012), English, Assistant Professor – B.A., Xi'an Foreign Language University, 1992; M.A., Bowling Green State University, 2002; Ph.D., Clemson University, 2011.
- Linderman, Jon K. (2000), Health and Sport Science, Associate Professor - B.A., California State University, 1984; M.A., 1987; Ph.D., University of California, 1991.
- Liu, Ruihua (2004), Mathematics, Associate Professor - B.E., Nankai University, 1985; M.E., 1988; Ph.D. (Engineering), 1994; M.S., University of Georgia, 2001; Ph.D. (Mathematics), 2002.
- Litka, Stephanie J. (2011), Sociology, Anthropology and Social Work, Lecturer – B.A., University of Florida, 2001; M.A., University of Florida, 2004.
- Livesay, Alisa (2007), Economics and Finance, Lecturer - B.A., University of Dayton, 1992; M.A., St. Louis University, 1997.
- Lockwood, Kimberly (2006), Philosophy, Lecturer - B.A., University of Dayton, 1991; M.A., University of Cincinnati, 1995; Ph.D., 2005.
- Longazel, Jamie G. (2011), Sociology, Anthropology and Social Work, Assistant Professor – B.A., Bloomsburg University of Pennsylvania, 2005; M.A., University of Delaware, 2007; Ph.D., University of Delaware, 2011.
- Loomis, John S. (2002), Electrical and Computer Engineering, Associate Professor - B.S., Case Institute of Technology, 1966; M.S., University of Illinois, 1968; M.S., University of Arizona, 1977; Ph.D., 1980.
- Lopper, Matthew (2007), Chemistry, Assistant Professor - B.A., University of Dayton, 1998; Ph.D., University of Wisconsin, 2003.
- Mackay, Elizabeth (2010), English, Lecturer - B.S., Appalachian State University, 1996; M.A., 2001; Ph.D., Miami University, 2007.
- MacLachlan, Heather (2009), Music, Assistant Professor - B.M.A., University of Manitoba, 1995; B.E., 1995; M.A., Cornell University, 2007.
- Macleod, Alex (2009), English, Lecturer - B.A., University of Arizona, 1991; M.A., 1993; Ph.D., 2001.
- Magnuson, Phillip C. (1981), Music, Professor - B.A., Duke University, 1971; M.M., University of Massachusetts, 1974; D.M.A., University of Wisconsin, 1977.
- Mahoney, Colleen E. (2011), Roesch Library, Lecturer – B.A., University of Notre Dame, 2007; M.L.S., Simmons College, 2010.
- Majka, Linda C. (1981), Sociology, Anthropology, and Social Work, Professor - B.A., College of William and Mary, 1969; M.A., University of California, 1973; Ph.D., 1978.
- Majka, Theo J. (1983), Sociology, Anthropology, and Social Work, Professor - B.S., College of William and Mary, 1969; M.A., University of California, 1972; Ph.D., 1978.
- Mammanna, Angela (2011), Chemistry, Assistant Professor – Ph.D., Università degli Studi di Catania, 2008.
- Marcinowski, M. Gary, S.M. (1993), Visual Arts, Associate Professor - B.F.A., Boston University, 1980; M.F.A., Rhode Island School of Design, 1993.
- Marre, Katy E. (1966), English, Professor - B.A., University of Bombay, 1958; M.A., 1960; Ph.D., State University of New York at Buffalo, 1967.
- Martin, Elizabeth S. (2004), English, Lecturer - B.A., Carnegie Mellon University, 1978; M.A., University of Dayton, 1982.
- Marvin, William C. (2002), Philosophy, Lecturer - B.A., Kent State University, 1977; M.A., University of Dayton, 1991.

- Mashburn, Joe D. (1981), Mathematics, Professor - B.S., Southern Missionary College, 1976; M.A., University of California, 1978; Ph.D., 1981.
- Massucci, Rev. Joseph D. (1987), Educational Leadership, Associate Professor - M.A., Catholic University of America, 1977; Ed.S., University of Dayton, 1988; Ph.D., 1993.
- Masthay, Mark (2006), Chemistry, Associate Professor - B.A., University of California, San Diego, 1978; M.S., University of California, Riverside, 1984; Ph.D., Carnegie Mellon University, 1988.
- Mathes, Constance R. (1989), Teacher Education, Clinical Faculty - B.A., Wright State University, 1973; M.Ed., 1980.
- McCombe, John P. (2001), English, Associate Professor - B.S., University of Pittsburgh, 1987; M.A., 1996; Ph.D., Ohio State University, 2000.
- McCrate, Thomas A. (1992), Civil and Environmental Engineering and Engineering Mechanics, Adjunct Assistant Professor - B.S., University of Dayton, 1970; M.S., 1973.
- Mc Cue, Lesley A. (2012), Teacher Education, Teacher in Residence – B.A., Notre Dame College, 2004; M.Ed., Wright State University, 2009; Ph.D., University of Dayton, anticipated December 2012.
- McCutcheon, James R., III (1997), Music, Artist-in-Residence - B.S., University of Dayton, 1973; B.M., Wright State University, 1978; M.M., 1991.
- McEwan, Ryan (2008), Biology, Assistant Professor - B.S., University of Kentucky, 1999; M.S., 2002; Ph.D., Ohio University, 2006.
- McFarlin, Dean B. (1999), Management and Marketing, NCR Professor of Global Leadership Development - B.A., Marquette University, 1979; Ph.D., State University of New York at Buffalo, 1986.
- McGreal, Paul E. (2011), School of Law, Professor – B.A., Williams College, 1989; J.D., Southern Methodist University, 1992; LL.M., Yale, 1994.
- McGrew, Allen J. (1995), Geology, Associate Professor - B.A., Earlham College, 1983; M.S., Stanford University, 1987; Ph.D., University of Wyoming, 1992.
- McLeod, Alexis (2009), Philosophy, Assistant Professor - B.A., University of Maryland, 2002; M.A., University of Oklahoma, 2005; Ph.D., University of Connecticut, 2009.
- McNew, Leslie (2009), Economics and Finance, Visiting Director of the Hanley Group Derivatives Trading Center - B.A., University of Michigan, 1985; M.A., New York University, 1991.
- Meek, William (2009), Management and Marketing, Assistant Professor - B.S., Bradley University, 2003; M.B.A., 2004.
- Merithew, Caroline A. (2002), History, Associate Professor - B.A., University of Missouri, 1990; M.A., University of Illinois at Urbana-Champaign, 1994; Ph.D., 2000.
- Merriman, Harold L. (2006), Health and Sport Science, Associate Professor - B.A., Atlantic Union College, 1982; Ph.D., Loma Linda University, 1990; M.P.T., Andrews University, 1997.
- Miller, Dan E. (1978), Sociology, Anthropology, and Social Work, Professor - B.S., University of Iowa, 1970; M.A., 1972; Ph.D., 1979.
- Miller, Kurtz K. (2012), Teacher Education, Clinical Faculty – B.S., Bedrock Geology of Blackhand Gorge, 2000; M.S.T., Wright State University, 2002; M.S., Wright State University, 2004; M.Ed., Wright State University, 2008; Miller, Nancy A. (2002), Political Science, Associate Professor - B.A., Clemson University, 1995; M.A., Rice University, 2000; Ph.D., 2002.
- Miller, Sheila (2004), Law, Professor of Lawyering Skills - B.A., Miami University, 1983; J.D., University of Cincinnati, 1987.
- Miller, Tracy K. (2002), Management and Marketing, Lecturer - B.S.B.A., Ohio State University, 1985; M.L.H.R., 1986.
- Miller, Vincent (2009), Religious Studies, Professor & Gudorf Chair in Catholic Theology- M.A., University of Notre Dame, 1990; Ph.D., 1997.

Mohan, Nancy (1987), Economics and Finance, Associate Professor - B.S., Indiana University, 1975; M.B.A., Wright State University, 1977; Ph.D., University of Cincinnati, 1986.

Monk, Debra P. (1999), Residential Programs, Administrative - B.A., University of North Carolina at Charlotte, 1993; M.A., University of Dayton, 1995.

Montoya, R. Matthew (2008), Psychology, Assistant Professor - B.A., University of California, Berkeley, 1996; M.A., University of Massachusetts/Dartmouth, 1998; Ph.D., University of North Carolina at Chapel Hill, 2004.

Moon, Donald L. (1974), Electrical and Computer Engineering and Electro-Optics, Professor - B.S.E.E., West Virginia Institute of Technology, 1963; M.S.E.E., University of Toledo, 1966; Ph.D., Ohio State University, 1974.

Moore, Cecilia A. (1996), Religious Studies, Associate Professor - A.B., Sweet Briar College, 1988; M.A., University of Virginia, 1991; Ph.D., 1996.

Morgan, Thomas L. (2006), English, Associate Professor - B.A., University of Oregon, 1993; M.A., University of Buffalo, 1999; Ph.D., 2004.

Morman, Paul J. (1990), History, Professor - B.A., University of Dayton, 1965; M.A., Bowling Green State University, 1966; Ph.D., Pennsylvania State University, 1973; M.S., State University of New York at Binghamton, 1984.

Morris, Jeffrey W. (1981), Law, Professor, Samuel A. McCray Chair of Law - B.A., Providence College, 1974; J.D., Washington and Lee University, 1977.

Morris III, Willie L. (1993), Music, Associate Professor - B.M.E., East Carolina University, 1982; M.A., Stephen F. Austin State University, 1984; D.M.A., University of Missouri at Kansas City Conservatory of Music, 1996.

Morrow, Gary W. (1988), Chemistry, Professor - B.A., Ohio State University, 1984; Ph.D., 1988.

Mosher, Arthur D. (1994), Languages, Associate Professor - B.A., Wheaton College, 1971; M.A., Syracuse University, 1975; Ph.D., University of Massachusetts, 1979.

Mosser, Kurt (1992), Philosophy, Associate Professor - B.A., Southern Methodist University, 1979; M.A., University of Chicago, 1982; Ph.D., 1990.

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.

Mueller, Steven D. (1976), Counseling Center, Administrative - B.A., University of Dayton, 1974; M.A., 1976; Ed.D., University of Cincinnati, 1987.

Mueller-Hansen, Karolyn (2009), Biology, Assistant Professor - B.S., Pennsylvania State University, 1980; M.S., Drexel University, 1984; Ph.D., University of Delaware, 1990.

Mullins, Monalisa M. (1989), Teacher Education, Lecturer - B.A., St. Leo College, 1985; M.A., University of Dayton, 1987; Ph.D., 2003.

Mundew, Leslie M. (2002), Economics and Finance, Lecturer - B.S., Ohio State University, 1979; M.B.A., Harvard University, 1984.

Murray, Andrew P. (1996), Mechanical and Aerospace Engineering, Professor - B.S., Rose-Hulman Institute of Technology, 1989; M.S., University of California, Irvine, 1993; Ph.D., 1996.

Murray, Paul T. (1982), Materials Engineering, Professor - B.S., University of Cincinnati, 1974; Ph.D., University of North Carolina, 1979.

Mykytko, Edward F. (1998), Engineering Management and Systems, Professor - B.S., University of Dayton, 1976; M.S., University of Iowa, 1978; Ph.D., University of Arizona, 1983.

- Myszka, David H. (1989), Engineering Technology, Professor - B.S.M.E., State University of New York at Buffalo, 1985; M.S.M.E., 1989; M.B.A., University of Dayton, 1996; Ph.D., 2009; Reg. Prof. Engr.
- Neeley, Grant (2005), Political Science, Associate Professor - B.A., Texas A&M University, 1989; M.P.A., 1991; Ph.D., University of Tennessee, 1996.
- Nenonene, Rochonda (2007), Teacher Education, Clinical Faculty - B.S., Baldwin-Wallace College, 1992; M.A., University of Dayton, 1998; Ph.D., 2007.
- Nickell, Philip K. (2011), Biology, Lecturer – B.S., Wright State University, 2002; M.S., Wright State University, 2004; Ph.D., University of Notre Dame, 2011.
- Nielsen, Mark G. (2001), Biology, Associate Professor - B.A., Oberlin College, 1988; Ph.D., Stanford University, 1994.
- Niles, Fred (1985), Visual Arts, Professor - B.S., Edinboro State College, 1964; M.A., University of Northern Colorado, 1974; M.F.A., Syracuse University, 1987.
- Ober, Shirley J. (2000), Mathematics, Lecturer - B.S., Edinboro University of Pennsylvania, 1970; M.A., State University of New York at Buffalo, 1972.
- Oberlander, Judith (1987), Institute for Technology-Enhanced Learning, Administrative - B.A., University of Dayton, 1969; M.S., 1987; Ph.D., 2002.
- O’Gorman, John M. (1999), Library, Associate Professor - B.A., Walsh University, 1981; M.L.S., St. John’s University, 1983.
- Oh, Kyoungrae (2006), Communication, Lecturer - B.A., Sogang University, 1995; M.A., 1998; M.S., University of Georgia, 2003; ABD, Purdue University, 2008.
- Oldenski, Thomas, S.M. (1994), Educational Leadership, Associate Professor - B.A., University of Dayton, 1972; M.Ed., Boston College, 1975; M.A., Western Michigan University, 1978; Ed.S., University of Dayton, 1984; Ph.D., Miami University, 1994.
- O’Mara, Erin M. (2011), Psychology, Assistant Professor – B.A., Quinnipac Universtiy, 2003; M.A., Northern Arizona University, 2005; Ph.D., University of Tennessee, 2011.
- Ordóñez, Raúl, E. (2001), Electrical and Computer Engineering, Associate Professor - B.S., Monterrey Institute of Technology, 1994; M.S., Ohio State University, 1996; Ph.D., 1999.
- Orji, Cyril (2005), Religious Studies, Associate Professor - B.A., University of Ibadan, 1990; M.Div., Dominican House of Studies, 1994; M.Ed., North Dakota State University, 2003; Ph.D., Marquette University, 2005.
- Pair, Donald L. (1991), Geology, Professor - B.S., St. Lawrence University, 1983; M.Sc., University of Waterloo, 1986; Ph.D., Syracuse University, 1991.
- Pan, Yue (2003), Management and Marketing, Associate Professor - B.A., Tsinghua University, 1996; B.Eco., 1996; M. Eng., 1998; Ph.D., University of Georgia, 2003.
- Paslaru, Viorel (2007), Philosophy, Assistant Professor - B.A., University of Bucharest, 1996; M.A., 1998; Ph.D., University of Cincinnati, 2007.
- Pautz, Michelle (2008), Political Science, Assistant Professor - B.A., Elon University, 2003; M.A., Virginia Polytechnic Institute, 2005; Ph.D., 2008.
- Payne, Michael A. (1977), Philosophy, Associate Professor - B.A., Xavier University, 1966; M.A., Boston College, 1970; Ph.D., University of Georgia, 1972.
- Pedrotti, Leno M. (1987), Physics, Professor - B.A., Wright State University, 1981; Ph.D., University of New Mexico, 1986.
- Peeler, Deborah (1995), Engineering Management and Systems, Adjunct Professor - B.S., Purdue University, 1977; M.S., University of Cincinnati, 1979; J.D., Salmon P. Chase College of Law, 1983; Ph.D., University of Dayton, 1992; Reg. Prof. Engr.

- Peñas-Bermejo, Francisco J. (1991), Languages, Professor - B.A., Universidad Complutense, 1984; M.A., University of Georgia, 1986; Ph.D., 1991.
- Penno, Robert P. (1987), Electrical and Computer Engineering, Associate Professor - B.S.M.E., Rose-Hulman Institute of Technology, 1971; M.S.E.E., 1984; Ph.D., University of Dayton, 1987.
- Perna, Richard P. (1982), Law, Professor - B.A., Villanova University, 1971; J.D., 1975.
- Perugini, Saverio, Jr. (2004), Computer Science, Associate Professor - B.S., Villanova University, 1998; M.S., Virginia Polytechnic Institute and State University, 2001; Ph.D., 2004.
- Petrykowski, John C. (1985), Mechanical and Aerospace Engineering, Associate Professor - B.S., University of Wisconsin, 1975; M.S., University of Illinois, 1978; Ph.D., 1981.
- Phelps, Andrew W. (1996), Materials Engineering, Adjunct Professor - B.S., Pennsylvania State University, 1983; M.S., 1987; Ph.D., 1990.
- Phelps, Kyle (2002), Visual Arts, Associate Professor - B.S., Ball State University, 1996; M.F.A., University of Kentucky, 2000.
- Picca, Leslie (2005), Sociology, Anthropology, and Social Work, Associate Professor - B.A., Mary Washington College, 1997; M.A., University of Florida, 2000; Ph.D., 2004.
- Pici, Joseph R. (1965), English, Professor - B.S., University of Dayton, 1962; M.A., 1964.
- Pierce, Jason L. (2002), Political Science, Associate Professor - B.A., Southwestern University, 1994; Ph.D., University of Texas-Austin, 2002.
- Pinnell, Margaret F. (2000), Mechanical and Aerospace Engineering, Associate Professor - B.M.E., University of Dayton, 1988; M.S., 1988; Ph.D., 1995.
- Place, A. William (1994), Educational Leadership, Associate Professor - B.S., University of Dayton, 1976; M.S., 1980; Ph.D., Ohio State University, 1988.
- Poe, Danielle M. (2001), Philosophy, Associate Professor - B.A., Seattle University, 1995; M.A., Catholic University, Belgium, 1997; Ph.D., Fordham University, 2001.
- Poitras, Marc A. (1998), Economics and Finance, Associate Professor - B.A., University of Massachusetts/Dartmouth, 1989; M.A., George Mason University, 1991; Ph.D., 1995.
- Polanski, Patricia J. (1998), Counselor Education and Human Services, Associate Professor - B.A., University of Akron, 1979; M.Ed., Ohio University, 1987; Ph.D., University of North Carolina at Greensboro, 1998.
- Polzella, Donald J. (1972), Psychology, Professor - B.A., University of Rochester, 1967; M.A., Bucknell University, 1969; Ph.D., University of Michigan, 1974.
- Portier, William L. (2003), Religious Studies, Professor & Spearin Chair in Catholic Theology - B.A., Loyola University, Chicago, 1969; M.A., Washington Theological Coalition, 1972; Ph.D., University of St. Michael's College, Toronto, 1980.
- Potter, Rebecca C. (2002), English, Associate Professor - B.A., University of California, Davis, 1991; M.A., Brandeis University, 1998; Ph.D., 2001.
- Powers, Peter E. (1997), Physics, Professor - B.S., Massachusetts Institute of Technology, 1988; M.S., Cornell University, 1990; Ph.D., 1994.
- Prasad, Jayesh (1990), Management Information Systems, Operations Management, and Decision Sciences, Associate Professor - B.Tech., Indian Institute of Technology, Kharagpur, 1982; P.G.D.M., Indian Institute of Management, Calcutta, 1984; Ph.D., University of Pittsburgh, 1994.
- Qumsiyeh, Maher (2008), Mathematics, Assistant Professor - M.A., Indiana University, 1979; Ph.D., 1986.

- Raffoul, Youssef N. (1999), Mathematics, Professor - B.S., University of Dayton, 1987; M.S., 1989; M.A., Indiana University, 1991; Ph.D., Southern Illinois University at Carbondale, 1996.
- Raisch, C. Daniel (1991), Educational Leadership, Associate Professor - B.S., Wilmington College, 1961; M.A., Wittenberg University, 1966; Ph.D., Miami University, 1973.
- Randall, Vernellia R. (1990), Law, Professor - B.S., University of Texas, 1972; M.S., University of Washington, 1978; J.D., Lewis and Clark Northwestern School of Law, 1987.
- Rapela-Heidt, Mari (2009), Religious Studies, Lecturer - Ph.D., Marquette University, 2004.
- Razek, Nasser (2012), Counselor Education, Clinical Faculty – B.A., Zagazig University, 1991; Academic Master of Al Alsun, Ain Shams University, 1992; M.A., The University of Akron, 2007; Ed. D., University of Akron, Anticipated May 2012.
- Reeb, Roger N. (1993), Psychology, Professor - B.A., Westminster College, 1984; M.S., Virginia Commonwealth University, 1987; Ph.D., 1993.
- Reid, Patricia (2009), History, Assistant Professor - B.A., California State University, 1989; M.A., University of Iowa, 1995; Ph.D., 2006.
- Reilly, Tracy L. (2006), Law, Professor - B.A., Northern Illinois University, 1990; J.D., Valparaiso University School of Law, 1995.
- Reising, John M. (1995), Engineering Management and Systems, Adjunct Professor - B.S., Xavier University, 1964; M.A., Southern Illinois University, 1967; Ph.D., 1969.
- Repperger, Daniel W. (1998), Electrical and Computer Engineering, Adjunct Assistant Professor - B.S.E.E., Rensselaer Polytechnic Institute, 1967; M.S.E.E., 1968; Ph.D., Purdue University, 1973.
- Reynolds, Patrick A. (1996), Music, Associate Professor - B.M., University of Michigan, 1981; M.M., 1983; D.M.A., University of Cincinnati, 1997.
- Rice, Frances E. (1999), Library, Associate Professor - B.A., University of Dayton, 1976; M.B.A., 1987; M.L.S., Kent State University, 1996.
- Richards, Stephen B. (2000), Teacher Education, Associate Professor - B.A., University of North Carolina at Chapel Hill, 1976; M.A., East Carolina University, 1979; Ed.D., Florida Atlantic University, 1999.
- Richards, William M. (1970), Philosophy, Professor - B.A., LeMoyné College, 1966; Ph.D., Georgetown University, 1970.
- Ridenour, Carolyn R. (1990), Educational Leadership, Professor - B.A., Indiana University, 1964; M.A.T., 1967; Ed.D., University of Akron, 1980.
- Ritterhoff, Kimberly A. (2011), Health and Sport Science, Lecturer – B.S., Ohio University, 2003; M.S., Wright State University, 2011.
- Roberts, William P. (1980), Religious Studies, Professor - B.A., Fordham University, 1955; M.A., 1957; Ph.L., Loyola Seminary, 1956; S.T.L., Weston School of Theology, 1963; Ph.D., Marquette University, 1968.
- Robinson, James D. (1982), Communication, Professor - B.A., University of the Pacific, 1978; M.A., West Virginia University, 1979; Ph.D., Purdue University, 1982.
- Robinson, James N. (1997), Engineering Management and Systems, Adjunct Professor - B.S., United States Air Force Academy, 1969; M.S., Air Force Institute of Technology, 1976; Ph.D., University of Texas-Austin, 1987.
- Robinson, Jayne B. (1994), Biology, Professor - B.S., Bowling Green State University, 1978; M.S., Ohio State University, 1984; Ph.D., 1991.
- Rodgers, Linda V. (1998), Counseling Center, Administrative - B.A., Mt. Mary College, 1989; M.S., University of Wisconsin-Milwaukee, 1991; Ph.D., 1998.
- Rodriguez, Dario N. (2012), Psychology, Lecturer – B.A., University of Dayton, 2006; M.A., University of Dayton, 2008; Ph.D., John Jay College of Criminal Justice & the Graduate Center, 2012.

Roecker Phelps, Carolyn E. (1995), Psychology, Associate Professor - B.S., University of Illinois, 1984; M.S., Illinois State University, 1990; Ph.D., University of Iowa, 1994.

Rogero, Leroy H. (2008), Accounting, Lecturer - B.S., University of Dayton, 1968; M.S., 1971.

Roten, Rev. Johann G., S.M. (1987), International Marian Research Institute, Administrative - B.Ed., Ecole Normales des Instituteurs, Sion, 1963; B.A., College of St. Michel, Fribourg, 1962; S.T.L., University of Fribourg, 1969; Lic.Phil., 1972; S.T.D., Pontifical Theological Faculty Marianum in Rome, 1987.

Rowe, John J. (1977), Biology, Professor - B.S., Colorado State University, 1968; M.S., Arizona State University, 1971; Ph.D., University of Kansas Medical Center, 1975.

Rowley, James B. (1989), Teacher Education, Professor - B.S., University of Dayton, 1969; M.S., Miami University, 1974; Ph.D., Ohio State University, 1989.

Ruggiero, John G. (1995), Economics and Finance, Professor, Edmund B. O'Leary Chair in Economics - B.A., State University of New York at Cortland, 1988; M.A., Syracuse University, 1992; Ph.D., 1995.

Rush, Tobias W. (2011), Music, Assistant Professor - B.A., Adams State College, 1996; M.M., University of Northern Colorado, 1998; D.A., University of Northern Colorado, 2007.

Russo, Charles J. (1996), Educational Leadership, Joseph Panzer Professor of Education - B.A., St. John's University, 1972; M.Div., Seminary of the Immaculate Conception, 1978; J.D., St. John's University School of Law, 1983; Ed.D., St. John's University Graduate School of Education and Human Services, 1989.

Sableski, Mary (2012), Teacher Education, Clinical Faculty - B.S., University of Dayton, 1998; M.S., University of Dayton, 2001; Ph.D., The Ohio State University, 2007.

Saintignon, Paula L. (1983), Mathematics, Lecturer - B.S., Bowling Green State University, 1978; M.S., University of Dayton, 1982.

Saliba, Joseph E. (1980), Civil and Environmental Engineering and Engineering Mechanics, Professor - B.S., University of Dayton, 1979; M.S., 1980; Ph.D., 1983; Reg. Prof. Engr.

Saliba, Tony E. (1986), Chemical and Materials Engineering, Professor - B.Ch.E., University of Dayton, 1981; M.S., 1982; Ph.D., 1986.

Salih, Jusuf (2012), Religious Studies, Assistant Professor - B.A., Marmara University, 1994; M.A., Marmara University, 1997; M.A., University of Virginia, 2006; Ph.D., University of Virginia, 2011.

Salisbury, William D. (2002), Management Information Systems, Operations Management, and Decision Sciences, Assistant Professor - B.B.A., Ohio University, 1986; M.B.A., Miami University, 1988; Ph.D., University of Calgary, 1996.

Sandhu, Sarwan S. (1980), Chemical and Materials Engineering, Professor - B.Sc., Panjab University, 1961; B.S.Ch.E., 1966; M.S.E., University of New Brunswick, 1970; D.I.C., Imperial College, University of London, 1973; Ph.D., University of London, 1973.

Sandy, Michael R. (1987), Geology, Professor - B.S., Queen Mary College, University of London, 1980; Ph.D., 1984.

Santamarina, Juan C. (1997), History, Associate Professor - B.A., University of Wisconsin-Madison, 1989; Ph.D., Rutgers University, 1995.

Sanyal, Tamisra (2009), Computer Science, Lecturer - B.S., University of Calcutta, 1973; M.S., India Institute of Technology Kanpur, 1976; M.Tech., 1976; M.S., University of Rochester, 1983.

Saphire, Richard B. (1976), Law, Professor - B.A., Ohio State University, 1967; J.D., Salmon P. Chase College of Law, 1971; LL.M., Harvard University, 1975.

Sarangan, Andrew M. (2000), Electro-Optics, Professor - B.A.Sc., University of Waterloo, 1991; M.A.Sc., 1993; Ph.D., 1996.

Sathish, Samachary (1999), Materials Engineering, Adjunct Associate Professor - B.S., University of Mysore, 1974; M.S., 1976; Ph.D., 1986.

- Scantlin, Ronda M. (2002), Communication, Associate Professor - B.A., Bethany College, 1992; M.A., University of Kansas, 1995; Ph.D., University of Texas-Austin, 1999.
- Schaller, Molly A. (1989), Counselor Education and Human Services, Associate Professor - B.A., Ohio State University, 1987; M.S., Miami University, 1989; Ph.D., Ohio University, 2000.
- Schellhammer, Ulrike B. (2001), Languages, Lecturer - M.A., Rice University, 1989; Ph.D., 1993.
- Scheuermann, George (2007), Teacher Education, Clinical Faculty - B.A., Case Western Reserve University, 1974; M.A., Miami University, 1976.
- Schneider, Scott J. (2004), Engineering Technology, Associate Professor - B.S.E.E., University of Dayton, 1996; M.S., Ohio State University, 1998.
- Schramm, Christine H. (1993), Student Development, Administrative - B.A., Michigan State University, 1987; M.A., 1989.
- Schuerman, William C. (1985), History, Lecturer - B.A., University of Cincinnati, 1969; M.A., Michigan State University, 1971; Ph.D., American University, 1980.
- Schweikart, Larry E. (1985), History, Professor - B.A., Arizona State University, 1972; B.A.Ed., M.A., 1980; Ph.D., University of California, Santa Barbara, 1984.
- Searcy, E. Dale (1976), Law, Professor - B.S., General Motors Institute, 1959; J.D., Indiana University, 1963; LL.M., New York University, 1966.
- Segalewitz, Scott I. (2000), Engineering Technology, Professor - B.S.E.E., Rutgers University, 1983; M.S., New Jersey Institute of Technology, 1986; Reg. Prof. Engr.
- Seielstad, Andrea M. (1996), Law, Professor - A.B., Princeton University, 1988; J.D., University of Michigan Law School, 1991.
- Sexto, Laura Elizabeth (2012), History, Lecturer - B.A., University of California Santa Cruz, 1997; M.A., New York University, 2002; Ph.D., University of California, Irvine, 2012.
- Sexton, Maureen (2005), English, Lecturer - B.A., University of Dayton, 1995; M.A., 2002.
- Shaw, Lori E. (1988), Law, Professor of Lawyering Skills - B.S., University of Dayton, 1983; J.D., 1987.
- Shiner, Erin W. (1993), Counseling Center, Administrative - B.A., University of Denver, 1981; M.A., Bowling Green State University, 1984; Ph.D., 1987.
- Sidhu, Sukhjinder S. (1992), Mechanical and Aerospace Engineering, Professor - B.S., Osmania University, 1987; M.S., University of Illinois, 1991; Ph.D., 1992.
- Sievers, David A. (2009), Music, Artist-in-Residence - B.M.A., Washington State University, 1994; M.M.A., Boise State University, 1996; D.M., Washington State University, 2009.
- Simon, Julie (2010), Mathematics, Lecturer - B.A., Wellesley College, 1983; Ph.D., University of Illinois, 1989.
- Singh, Amit (2007), Biology, Assistant Professor - B.S., H.P. University, 1988; M.S., Devi Ahilya University, 1990; Ph.D., 1995.
- Sink, Damon W. (2001), Music, Visiting Assistant Professor - B.M., University of Cincinnati, 1992; M.M., 1995.
- Skill, Thomas D. (1984), Communication, Professor - B.A., State University of New York at Buffalo, 1978; M.A., 1980; Ph.D., 1984.
- Slade, R. Andrew (2003), English, Assistant Professor - B.A., Seattle University, 1995; B.A., Katholieke Universiteit Leuven, 1996; Ph.D., State University of New York at Stony Brook, 2004.
- Slater, Jillian M. (2011), Roesch Library, Assistant Professor - B.A., California State University, 2004; M.L.S., San Jose State University, 2009.
- Smith, Anthony B. (1999), Religious Studies, Associate Professor - B.A., Boston College, 1985; M.A., University of Minnesota, 1989; Ph.D., 1995.

- Smith, Barbara A. (1989), Computer Science, Associate Professor - B.A., St. Louis University, 1976; M.S., University of Missouri, 1980; Ph.D., 1988.
- Smith, Kevin Z. (2012), Communication, Lecturer – B.S., West Virginia University, 1979; M.A., Miami University, 2000.
- Smith, Todd B. (2001), Physics, Associate Professor - B.S., University of Notre Dame, 1989; M.A., Miami University, 1990; M.S., University of Michigan, 1995; Ph.D., 1998.
- Snyder, Linda J. (1989), Music, Professor - B.M., Miami University, 1970; M.M., University of Illinois, 1972; D.M.A., 1982.
- Song, Yong (2008), Physics, Lecturer - B.S., University of Science and Technology of China, 1996; M.S., 1999; M.S., University of Cincinnati, 2001; Ph.D., 2008.
- Sparks, John R. (1995), Management and Marketing, Associate Professor - B.B.A., West Texas State University, 1988; Ph.D., Texas Tech University, 1995.
- Sriitharan, R. (1999), Computer Science, Professor - B.Tech., Indian University of Technology, 1985; M.S., Vanderbilt University, 1988; Ph.D., 1995.
- Steinlage, Lester J. (2000), Mathematics, Lecturer - B.S., University of Dayton, 1965; M.S., 1969.
- Stevens, Yvonne R. (2012), English, Lecturer – B.S., Ohio University, 2004; M.A., University of Dayton, 2009;
- Strain, Margaret M. (1995), English, Associate Professor - B.A., Bellarmine College, 1977; M.A., University of Louisville, 1986; Ph.D., 1995.
- Street, Donna L. (2002), Accounting, Professor, Al & Marcie Mahrt Chair in Accounting - B.B.A., East Tennessee State University, 1981; M.Acc., University of Tennessee, 1983; Ph.D., 1987.
- Street, P. Eric (1992), Music, Professor - B.M., Cornell College, 1975; M.M., Indiana University, 1977; D.M., 1985.
- Subramanyam, Guru (1998), Electrical and Computer Engineering, Professor - B.E., University of Madras; 1984; M.S., University of Cincinnati, 1988; Ph.D., 1993.
- Sullivan, Diane M. (2006), Management and Marketing, Associate Professor - B.S.B.A., University of Central Florida, 1997; M.B.A.; (cand.) Ph.D., 2006.
- Sutherland, Bobbi Sue (2012), History, Lecturer – B.A., Calvin College, 2003; M.A., Yale University, 2005; M. Phil, Yale University, 2007; Ph.D., Yale University, 2009.
- Swavey, Shawn M. (2002), Chemistry, Associate Professor - B.S., Edinboro University, 1991; M.S., Case Western Reserve University, 1995; Ph.D., 1998.
- Sweeney, Patrick J. (1978), Engineering Management and Systems, Professor - B.S., University of Notre Dame, 1957; M.S., University of Missouri, 1967; Ph.D., University of Dayton, 1977; Reg. Prof. Engr.
- Sweeney, Paul D. (2001), Management and Marketing, Professor - B.A., California State University, 1978; M.S., University of Pittsburgh, 1980; Ph.D., 1983.
- Szeghi Dempster, Tereza (2009), English, Assistant Professor - B.A., University of Cincinnati, 2000; M.A., University of Arizona, 2004; Ph.D., 2007.
- Taaffe, Maura J. (2011), English, Lecturer – B.A., Ohio Dominican College, 1971; M.A., The Ohio State University,; Ph.D., Michigan Technological University, 2010.
- Taha, Tarek (2009), Electrical and Computer Engineering, Assistant Professor - B.A., DePauw University, 1996; B.S.E.E., Georgia Institute of Technology, 1996; M.S.E.E., 1998; Ph.D., 2002.
- Talbert-Johnson, Carolyn (1991), Teacher Education, Professor - B.A., Ohio Dominican College, 1976; M.A., Ohio State University, 1978; Ph.D., 1991.

- Talbott, Anthony N. (2008), Political Science, Lecturer - B.A., Columbia College, 1995; M.A., Ohio University, 1997; Ph.D., Arizona State University.
- Tanova, Nadya (2009), Languages, Lecturer - M.A., University of Sofia, 1990; M.A., Purdue University, 2003.
- Taylor, Annette M. (1988), Communication, Assistant Professor - B.A., Michigan State University, 1974; M.A., 1988; Ph.D., Bowling Green State University, 1996.
- Taylor, Denise G. (2006), Civil and Environmental Engineering and Engineering Mechanics, Assistant Professor - B.S., Virginia Polytechnic Institute and State University, 1981; B.C.E., University of Dayton, 1992; M.S., University of Cincinnati, 1995; Ph.D., Johns Hopkins University, 2003.
- Taylor, Philip H. (1988), Electro-Optics, Assistant Professor - B.S., State University of New York College at Oneonta, 1980; Ph.D., Pennsylvania State University, 1984.
- Tello Sánchez, Maria Teresa (2007), Languages, Lecturer - B.A., University of Salamanca, 2003; M.A., 2007.
- Thomas, Patrick W. (2011), English, Assistant Professor – B.A., Mercyhurst College, 2002; M.A., Kent State University, 2006; Ph.D., Kent State University, 2011.
- Thompson, Daniel Patrick Speed (2012), Religious Studies, Associate Professor – B.A., University of Notre Dame, 1986; A.M., The University of Chicago, 1987; Ph.D., The University of Chicago, 1998.
- Thompson, Teresa L. (1985), Communication, Professor - B.A., University of Wisconsin, 1975; M.A., Purdue University, 1976; Ph.D., Temple University, 1980.
- Thompson, Rev. Thomas A., S.M. (1987), Library, Administrative - B.A., University of Dayton, 1958; M.A., University of Pittsburgh, 1963; S.T.L., University of Fribourg, 1968; Ph.D., University of Pittsburgh, 1977.
- Thompson-Miller, Ruth K. (2011), Sociology, Anthropology and Social Work, Assistant Professor – B.S., University of Florida, 2002; M.S., Texas A&M University, 2004; Ph.D., Texas A&M University, 2011.
- Tibbetts, Paul E., Jr. (1969), Philosophy, Professor - B.A., Clark University, 1964; M.A., Boston University, 1965; Ph.D., Purdue University, 1973; Ph.D., University of Illinois, 1985.
- Tillman, Beverly A. (1990), Teacher Education, Associate Professor - B.S., Miami University, 1974; M.A., University of Michigan, 1975; Ph.D., Ohio State University, 1992.
- Titlebaum, Peter J. (1996), Health and Sport Science, Associate Professor - B.S., State University of New York at Brockport, 1982; M.S., Ohio State University, 1985; Ph.D., Temple University, 1993.
- Todd, Adam G. (2010), Law, Associate Professor of Lawyering Skills - B.A., Brown University, 1983; J.D., Rutgers School of Law, 1990.
- Toubia, Elias A. (2011), Civil and Environmental Engineering and Engineering Mechanics, Assistant Professor – B.S., Lebanese University, 2000; M.S., University of Dayton, 2003; Ph.D., University of Dayton, 2008.
- Trick, Kimberly A. (1994), Chemistry, Lecturer - B.Ch.E., University of Dayton, 1984; M.S., 1988; Ph.D., 1994.
- Trollinger, Susan (2007), English, Associate Professor - B.A., University of Wisconsin, 1986; M.A., University of Pittsburgh, 1988; Ph.D., 1995.
- Trollinger, William (1998), History, Professor - B.S., Bethel College, 1977; M.S., University of Wisconsin, 1980; Ph.D., 1984.
- Tsen, Hsuan (2012), Visual Arts, Lecturer – B.A., Hampshire College, 1998; Ph.D., Stanford University, 2011.
- Tsonis, Panagiotis A. (1989), Biology, Professor - B.S., Patras University, 1977; M.S., Nagoya University, 1980; Ph.D., 1983.
- Turner, Daniel A. (2012), Chemistry, Visiting Assistant Professor – B.A., Capital University, 2006; Ph.D., The Ohio State University, anticipated August 2012.

Uhlman, Todd (2009), History, Lecturer - B.A., Indiana University, 1998; Ph.D., Rutgers University, 2008.

Untener, Joseph A. (1987), Engineering Technology, Professor - B.M.E., General Motors Institute, 1984; M.S., Purdue University, 1985; Reg. Prof. Engr.

Usman, Mohammad (2007), Mathematics, Assistant Professor - M.S., Ohio University, 2001; M.A., 2001; Ph.D., University of Cincinnati, 2007.

Vanderburgh, Paul (2004), Health and Sport Science, Professor - B.S., United States Military Academy, 1982; M.A., University of Georgia, 1988; Ed.M., Columbia University, 1991; Ed.D., 1992.

Van Zandt, Victoria (2005), Law, Associate Professor of Lawyering Skills - B.A., Ohio State University, 1991; J.D., University of Dayton, 1996.

Valenzano, Joseph M. III (2011), Communication – B.A., Providence College, 2000; M.A., University of Maine, 2002; Ph.D., Georgia State University, 2006.

Velasquez, Ernesto (2009), Philosophy, Assistant Professor - B.A., University of Illinois at Chicago, 1998; M.A., University of Hawaii at Manoa, 2000; Ph.D., State University of New York at Buffalo, 2009.

Venard, Paul (2007), Law Library, Assistant Professor - B.S., John Carroll University, 1997; J.D., Kent State University, 2001; M.L.I.S., 2005.

Ventura, Renato (2010), Languages, Assistant Professor - B.A., Trinity College, 2003; M.A., University of Connecticut, 2006; Ph.D., University of Connecticut, 2011.

Villa, Laura (2010), Languages, Assistant Professor - B.A., University of Ovideo, 2003; M.A., City University of New York, 2004.

Voevodin, Andrey A. (1998), Materials Engineering, Adjunct Professor - Dip. Met. Engr., Tula Politechnical Institute, 1986; Ph.D., 1991.

Voracheck, Laura (2007), English, Assistant Professor - B.A., Trinity University, 1991; M.A., University of Texas-Houston, 1995; Ph.D., University of Wisconsin, 2004.

Vorontsov, Mikhail (2009), Electro-Optics, Professor and WBI Endowed Chair in Ladar and Free Space Optical Communications - M.S., Moscow State University, 1974; Ph.D., 1977; D.Sc., Lomonosov Moscow State University, 1989.

Wagner, Peter G. (1999), Management Information Systems, Operations Management, and Decision Sciences, Lecturer - B.S., Louisiana Tech University, 1970; M.S., University of Southern California, 1980.

Wallace, Samuel P. (1982), Communication, Associate Professor - B.A., Ohio State University, 1975; M.A., 1979; Ph.D., 1985.

Walters, Glenn R. (1997), Communication, Media Executive-in-Residence - B.A., Denison University, 1952; M.A., University of Dayton, 1986.

Wang, Fukuo Albert (2005), Economics and Finance, Associate Professor - B.A., National Taiwan University, 1982; M.B.A., University of North Carolina, 1989; Ph.D., 1994.

Washington, Versalle (2010), History, Lecturer - B.S., United States Military Academy, 1985; M.A., The Ohio State University, 1994; Ph.D., 1995.

Watkins, David (2010), Political Science, Assistant Professor - B.A., Western Washington University, 1997; M.A., University of Washington, 2000; Ph.D., 2008.

Watras, Joseph L. (1979), Teacher Education, Professor - B.A., Boston University, 1965; M.Ed., University of Hawaii, 1969; Ph.D., Ohio State University, 1972.

Watson, Blake A. (1992), Law, Professor - B.A., Vanderbilt University, 1978; J.D., Duke University, 1981.

Watson, Stevie (2011), Management and Marketing, Assistant Professor – B.B.A., Mississippi State University, 1995; M.B.A., Mississippi State University, 1996; Ph.D., Mississippi State University, 2006.

- Watters, Kathleen B. (1989), Communication, Associate Professor - B.S., University of Minnesota, 1976; M.A., 1979; Ph.D., 1988.
- Wawrose, Susan C. (1998), Law, Professor of Lawyering Skills.
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- Webber, Sarah J. (2010), Accounting, Assistant Professor - B.S., University of Dayton, 2003; M.B.A., 2003; J.D., Ohio State University, 2007; L.L.M., Capital University, 2010.
- Welkener, Michele (2008), Counselor Education and Human Services, Assistant Professor - B.F.A., Miami University, 1990; M.A., 1992; Ph.D., 2000.
- Wells, Charles E. (1984), Management Information Systems, Operations Management, and Decision Sciences, Professor - A.B., Harvard University, 1976; M.B.A., Miami University, 1977; Ph.D., University of Cincinnati, 1982.
- Wells, Rebecca M. J. Yates (1980), Management and Marketing, Associate Professor - B.B.A., University of Cincinnati, 1973; M.B.A., 1975; Ph.D., 1980.
- Westendorf, Thomas J. (1982), Office of the Registrar, Administrative - B.S., University of Dayton, 1978; M.B.A., 1986.
- Whisnant, Rebecca S. (2003), Philosophy, Associate Professor - B.A., Oberlin College, 1989; M.A., University of North Carolina, 1993; Ph.D., 2002.
- Whitaker, Jayne K. Matlack (1993), Visual Arts, Associate Professor - B.S., University of Delaware, 1983; M.F.A., Tyler School of Art of Temple University, 1993.
- Whitaker, Joel A. (1993), Visual Arts, Professor - B.F.A., University of Montevallo, 1985; M.F.A., Florida State University, 1988.
- White, John J. (2007), Teacher Education, Assistant Professor - B.A., University of Massachusetts at Boston, 1984; M.A., Boston College, 1995; Ph.D., 2000.
- Whitney, Thomas J. (1988), Civil and Environmental Engineering and Engineering Mechanics, Associate Professor - B.M.E., University of Dayton, 1986; M.M.E., University of Delaware, 1988; Ph.D., University of Dayton, 2003.
- Wilbers, Timothy A. (1983), Visual Arts, Associate Professor - B.A.Ed., Ohio State University, 1972; M.A., 1974; M.F.A., Southern Illinois University, 1981.
- Wilhoit, Stephen W. (1988), English, Associate Professor - B.A., University of Kentucky, 1980; M.A., University of Louisville, 1983; Ph.D., Indiana University, 1988.
- Wilkens, Robert J. (1999), Chemical and Materials Engineering, Professor - B.C.M.E., University of Dayton, 1992; M.S. 1993; Ph.D., Ohio University, 1997.
- Williams, Martha L. (2006), Languages, Lecturer - B.A., State University of New York, 1965; M.S., Wright State University, 1985; M.A., Georgia State University, 1975.
- Williams, P. Kelly (1973), Biology, Professor - B.A., University of Texas, 1966; M.S., University of Minnesota, 1969; Ph.D., Indiana University, 1973.
- Williams, Thomas M. (2009), Biology, Assistant Professor - B.S., Eastern Michigan University, 1999; M.S., University of Michigan, 2003; Ph.D., 2004.
- Winning, Thomas E. (1999), School of Business Administration, Executive-in-Residence - B.S., Ohio State University, 1971; M.B.A., University of Dayton, 1976.
- Wolff, Robert L. (1958), Engineering Technology, Professor - B.S., University of Dayton, 1959; M.B.A., Xavier University, 1967.
- Work, Nicola (2009), Languages, Assistant Professor - B.A., Wayne State University, 1998; M.A., 2000.
- Wright, David J. (1996), Biology, Associate Professor - B.S., University of Sheffield, England; Ph.D., University of Iowa, 1989.
- Wright, Shirley J. (1993), Biology, Associate Professor - B.S., Loyola University, Chicago, 1981; M.S., 1983; Ph.D., University of Iowa, 1981.
- Wu, Shuang-Ye (2004), Geology, Visiting Assistant Professor - B.A., Nanjing University, 1991; M.A., Beijing Foreign Study University, 1994; M.Phil., Cambridge University, 1996; Ph.D., 2000.
- Wulff, Susan M. (2012), Physician's Assistant Program, Clinical Faculty - Associate Degree, Kettering College of Medical Arts, 1969; B.S., Kettering College of Medical Arts, 1999; M.S., Arizona School of Health Sciences, 2002.
- Wynn, Donald (2007), Management Information Systems, Operations Management, and Decision Sciences, Assistant Professor - B.A., University of Tennessee, 1988; M.B.A., Middle Tennessee State University, 1998.
- Yao, Zhongmei (2009), Computer Science, Assistant Professor - B.E., Donghua University, 1997; M.S., Louisiana Tech University, 2004.
- Yang, Aimei (2012), Communication, Assistant Professor - B.A., Nankai University, 2005; M.A., Nankai University, 2007; Ph.D., University of Oklahoma, 2011.
- Yengulalp, Lynne (2009), Mathematics, Assistant Professor - B.S., Miami University, 2001; M.S., 2003.
- Yocum, Sandra (1992), Religious Studies, Associate Professor - B.A., University of Oklahoma, 1976; Ph.D., Marquette University, 1987.
- Yoder, Donald D. (1989), Communication, Associate Professor - B.S., Iowa State University, 1973; M.A., University of Nebraska-Lincoln, 1975; Ph.D., Ohio State University, 1982.
- Young, Pamela R. (2011), Educational Leadership, Assistant Professor - B.S., Bowling Green State University, 1974; M.S., Mansfield State College, 1977; Ph.D., University of Dayton, 2002.
- Zabarnick, Steven S. (1988), Mechanical and Aerospace Engineering, Adjunct Professor - B.S., State University of New York at Binghamton, 1980; Ph.D., Pennsylvania State University, 1984.
- Zamierowski, Edward E., S.M. (1974), Fitz Center for Leadership in Community, Administrative - B.S.E., University of Dayton, 1955; M.S., Ohio State University, 1960; Ph.D., University of Nairobi, 1973.
- Zhan, Qiwen (2002), Electro-Optics, Professor - B.S., University of Science and Technology of China, 1996; M.S.E.E., University of Minnesota, 2000; Ph.D., 2002.
- Zhang, Ting (2009), Economics and Finance, Assistant Professor - B.A., Shanghai International Studies University, 1994; M.B.A., University of Northern Iowa, 2002; M.Acc., 2003; M.S.F., Clark University, 2005.
- Zink, Julie (2006), Law, Professor of Lawyering Skills - B.A., Wright State University, 1996; J.D., University of Dayton, 1999.
- Zois, Catherine J. (1998), Psychology, Associate Professor - B.S., University of Illinois, 1992; M.A., Wayne State University, 1995; Ph.D., 1997.
- Zukowski, Angela Ann, M.H.S.H. (1979), Religious Studies, Professor - B.A., University of Dayton, 1974; M.A., 1978; D.Min., United Theological Seminary, 1988.

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Graduate Faculty

Nearly all tenured or tenure-track faculty members at the University of Dayton, with rank of at least Assistant Professor, are members of the Graduate Faculty, as are most *Emeritus/Emerita* faculty, Distinguished Service Professors and Distinguished Professors at Large. In addition, many other individuals with appropriate experience and qualifications, both internal and external to the University of Dayton community, have been granted Graduate Faculty Status. Students should contact their Dean's office for an up-to-date list of graduate faculty in his or her academic unit.

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Officers of the university

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OFFICE OF THE PRESIDENT

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President	Daniel J. Curran, Ph.D.
Vice President for Mission and Rector	Rev. James F. Fitz, S.M.
Executive Assistant to the President	Jane Perrich

Academic Affairs

Title	Name
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Assistant to the Provost	Antionette M. Letavac
Faculty Hiring Coordinator	Amy Askren
Budget Analyst	Kerin M. Banfield
Institutional Researcher for Academics	Elisa A. Bernal
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Assistant Vice President for Enrollment Management and Market Development	Robert F. Durdle
Assistant Vice President for Enrollment Management and Dean of Admission and Financial Aid	Julia K. Harmon
Assistant Vice President for University Marketing and Strategies	Molly Wilson
Assistant Vice President and Registrar	Thomas J. Westendorf
Director of Enrollment Services and Associate Registrar	Rebekah Lawhorn
Associate Registrar- Registration	Patsy L. Martin
Vice President for Research and Executive Director, University of Dayton Research Institute (UDRI)	Michael V. McCabe
Director, University of Dayton Research Institute (UDRI)	John E. Leland
Vice President for Student Development	William F. Fischer
Associate Vice President and Dean of Students	Vacant
Assistant Vice President for Student Development and Director of Leadership Development	Christine M. Schramm
Assistant Vice President for Health and Wellness and Director of Counseling Center	Steven D. Mueller
Director, Communications and Community Relations for Student Development	Edel M. Jesse
Director, Campus Recreation	Vacant
Associate Provost for Academic Affairs and Learning Initiatives and Director, Ryan C. Harris Learning-Teaching Center	Deborah J. Bickford

Associate Director, LTC, Director, Office of Writing, Research, and New Media	Stephen W. Wilhoit	Associate Director, IT Infrastructure and AV Systems Planning	Jeremy S. Flohre
Associate Director, LTC, Director, Office Curriculum Innovation and E-Learning (UDit)	David J. Wright	Associate Director for Customer Support	Jonathan C. Rike
Associate Director, LTC, Director, Office of Student Learning Services	Elizabeth G. Harrison	Associate Director for Classroom Support and Operations Engineer	Angela M. Parker
Assistant Director, Academic Services	Dude J. Coudret	Director, Curriculum Innovation and E-Learning	David J. Wright
Assistant Director, Disability Services	Brenda D. Cooper	Assistant Director, eLearning Systems	Ryan Allen
Director, Career Services	Jason C. Eckert	Associate Director, IT Risk Management	Dean S. Halter
Associate Director, Career Advising	Mark Sisson	Associate Provost for Faculty and Administrative Affairs	Patrick G. Donnelly
Associate Director, Employer Relations and IT	Chris Wiley	Executive Director, Institutional Diversity and Inclusion	Jack Ling
Director, Center for International Programs	Amy E. Anderson	Associate Provost and Dean of Graduate, Professional and Continuing Education	Paul M. Vanderburgh
Associate Director	Tricia Barger	Associate Dean	Bradley D. Duncan
Programs Director, Education Abroad	Sally A. Raymont	Assistant Dean for Special Programs and Continuing Education	Julie Mitchell
Coordinator, International Student and Scholar Services	Timothy Kao	Assistant Director, Operations and Graduate Student Services	Diane C. Helmick
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Director, University Honors Program	David W. Darrow	Administrative Assistant	Denise M. Quillen
Associate Director	Vacant	Administrative Assistant	Yolanda R. Copeland
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Assistant Director	Jeanne R. Palermo	Associate Dean for Faculty Development and Graduate Programs	Donald J. Polzella
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Associate CIO	Susan S. McCabe	Director, Fitz Center for Leadership in Community	Richard T. Ferguson
Director, University Information Systems	Victoria L. Adams	Director, Information Technology	Jeremy P. Mlazovsky
Director, Systems Administration and Networking	Al J. Stern	Dean, School of Business	Paul Bobrowski
Director, Application Support and Integration	Thomas U. Weckesser	Associate Dean	Elizabeth F. Gustafson
Assistant CIO, Customer Relations, and Executive Director, Technology Support Services	Jacquise Y. Jackson	Associate Dean	Paul Sweeney
Director, IT Administrative Services	Karen S. Bull	Director, Center for Academic Success	Janet R. Leonard
		Academic Advisor, Center for Academic Success	Brad Balsler
		Academic Advisor, Center for Academic Success	Kathleen Huling

Academic Advisor, Center for Academic Success	Deborah Sexton
Academic Success Coordinator	Ieesha Ramsey
Career Services Liaison	Sylvie Stewart
University Libraries Liaison	Joan Giglierano
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Director, International Business	Terence Lau
Director, SBA Study Abroad Program	Peter G. Wagner
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Director, School Study Council of Ohio	Doug Carpenter
Associate Dean for Undergraduate Learning and Community Partnerships	Katie Kinnucan-Welsch
Assistant Dean for Program Development	Vacant
Director, Bombeck Family Learning Center	Diana J. Smith
Project Evaluation Associate, Project Wellness	Cynthia C. Currell
Program Director, Urban Teacher Academy	Rochonda L. Nenonene
Executive Director, Education Law Association	Cate Smith
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Associate Dean for Undergraduate Studies	Riad Alakkad
Assistant Dean for Recruitment and Outreach	Margaret Pinnell
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Manager, Innovation center	Dr. Kenneth Bloemer
Dean, School of Law	Paul E. McGreal
Associate Dean, Academic Affairs	Richard P. Perna
Business Manager	Margaret Wilson
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Manager, Information Technology	Margaret A. Thomas
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Director, Law Library	Thomas L. Hanley
Dean, University Libraries	Kathleen M. Webb
Associate Dean for Collections and Operations	Fred W. Jenkins
Director, Information Acquisition and Organization	Emily A. Hicks
Director, Education and Information Delivery	Hector Escobar
Director, Information Systems and Digital Access	Frances E. Rice
Director, Marian Library	Thomas A. Thompson, S.M.
Executive Director, International Marian Research Institute (IMRI)	Francois Rossier, S.M.
University Archivist and Coordinator of Special Collections	Rachel DeHart

ACADEMIC DEPARTMENTS

Title	Name
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Biology	Jayne B. Robinson
Chemical and Materials Engineering	Charles E. Browning
Chemistry	Mark B. Masthay
Civil and Environmental Engineering and Engineering Mechanics	(Interim) Don Chase
Communication	Jonathan A. Hess
Computer Science	Dale Courte
Counselor Education and Human Services	Molly A. Schaller

Economics and Finance	John Rapp
Educational Leadership	David A. Dolph
Electrical and Computer Engineering	Guru Subramanyam
Engineering Management and Systems	(Interim) Patrick Sweeney
Engineering Technology	Scott I. Segalewitz
English	Shelia Hassell-Hughes
Geology	Daniel Goldman
Health and Sport Science	(Interim) Lloyd L. Laubach
History	Julius A. Amin
Languages	Francisco Penas-Bermejo
Management and Marketing	Dean B. McFarlin
MIS, Operations and Supply Management and Decision Sciences	E. James Dunne
Mathematics	Joe D. Mashburn
Mechanical and Aerospace Engineering	J. Kelly Kissock
Military Science	Daniel R. Redden
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Physics	Rex L. Berney
Political Science	Jason Pierce
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Sociology, Anthropology, and Social Work	Laura Leming, F.M.I.
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Visual Arts	Judith L. Huacuja

academic programs

Title	Name
American Studies	Vacant
CORE	(Interim) Una Cadegan
Criminal Justice Studies	Arthur J. Jipson
Dietetics	Vacant
Doctor of Physical Therapy	Philip A. Anloague
Electro-Optics	Joseph W. Haus
Human Rights Studies	Mark Ensalaco
International Studies	Vacant
Prelaw	Laura Hume
Premedical Programs	Robert J. Kearns
Theatre	Darrell F. Anderson
Women's and Gender Studies	Rebecca S. Whisnant

university libraries

Title	Name
Dean, University Libraries	Kathleen M. Webb
Director, Education & Information Delivery	Hector Escobar
Coordinator, Access Services	Amanda Black
Coordinator, Reference and Instruction	Heidi Gauder

Associate Dean for Collections and Operations	Fred W. Jenkins
Director, Information Acquisition and Organization	Emily A. Hicks
University Archivist and Coordinator of Special Collections	Rachel DeHart
Director, Marian Library	Thomas A. Thompson, S.M.
Executive Director, Marian Library, International Marian Research Institute (IMRI)	Francois Rossier, S.M.

research

Title	Name
Vice President for Research and Executive Director, Research Institute	Michael V. McCabe
Director, Research Institute	John E. Leland
Associate Director, Research Institute	Allan S. Crasto
Division Head, Aerospace Mechanics	Michael P. Bouchard
Division Head, Energy and Environmental Engineering	Dilip R. Ballal
Division Head, Energy Technologies & Materials	Sukhjinder Sidhu
Division Head, Multiscale Composites and Polymers	Brian P. Rice
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Controller	Kathleen R. Wisenbach
Manager, Information Technologies	D. Kiefer Campbell
Director, Technology Partnerships	Matthew E. Willenbrink
Communication Administrator	Pamela L. Gregg

campus ministry

Title	Name
Director	Crystal C. Sullivan
Associate Director of Campus Ministry, Residence Life Ministry and GA Program	Kelly Adamsont
Associate Director of Campus Ministry, Center for Social Concern	Nicholas Cardilino
Assistant Director of Campus Ministry, Retreats and Faith Communities	Allison Leigh
Assistant Director of Campus Ministry, Liturgy	Kathy Sales
Campus Minister	Mike Bennett
Campus Minister	Kelly Bohrer

Campus Minister	Colleen Brown
Campus Minister	Maria O. Burkett
Campus Minister	Gerald Chinchar, S.M.
Campus Minister	Teri Dickison
Campus Minister	Bridget Ebbert
Campus Minister	Lauren Farrell
Campus Minister	Katrina Hamilton
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Campus Minister	Linda L. Jackson, O.P.
Campus Minister	Steve Joebgen
Campus Minister	Michelle Khawam
Campus Minister	Terri Lauer
Campus Minister	Jen Morin Williamson
Campus Minister	Katie Mathews
Campus Minister	Elizabeth Montgomery
Campus Minister	Mary Neibler
Campus Minister	James Pera
Campus Minister	Thomas Pieper, S.M.
Campus Minister	Krystle Powell
Campus Minister	Kathleen Rossman, O.S.F.
Campus Minister	Logan Rudemiller
Campus Minister	Colleen Ryan
Campus Minister	Sue Terbay

finance and administrative services

Title	Name
Vice President for Finance and Administrative Services	Thomas E. Burkhardt
Controller	Angela K. Buechele
Internal Auditor	Vacant
Assistant Vice President and Treasurer	Philip G. Chick
Assistant Treasurer and Tax Manager	Ann Garcia
Assistant Vice President for Finance	Thomas J. Weckesser
Director, Student Accounts and Bursar	David Necessary
Director, Purchases and Business Services	Ken R. Soucy
Vice President for Facilities Management	Beth H. Keyes
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Director, Legal Affairs and University Counsel	John E. Hart
Director, Institutional Reporting	Susan Sexton
Vice President for Human Resources	Joyce M. Carter
Director, Dining Services	Paula H. Smith
Executive Director, Public Safety and Chief of Police	Bruce E. Burt

Human Resources

Title	Name
Vice President for Human Resources	Joyce M. Carter
Administrative Associate to the Vice President	Kathryn A. Henry
Manager, Human Resources Operations	Steven D. Perucca
Manager, Learning and Development	Celine M. O'Neill
Director, Labor Relations	M. Lee Morgan
Director, Total Compensation and Benefits	Kathleen J. Molnar
Manager, Benefits	Elizabeth A. Schwartz
Manager, Compensation	Anthony Linz
Manager, Employment	Jennifer G. Duwel
Director, Human Resources Information Systems	Noyra C. Valentin
HRIS Analyst	Stefanie M. Rich

student development

Title	Name
Vice President of Student Development	William M. Fischer
Assistant to the Vice President	Annette Mitchell
Vice President of Student Development and Dean of Students	Christine Schramm
Assistant Vice President of Student Development	Cari S. Wallace
Assistant Dean of Students and Director of Housing and Residence Life	Steven T. Herndon
Assistant Director of Housing and Residence Life, First-Year Experience	Trent Pinto
Assistant Director of Housing and Residence Life, Upperclass Living	Rachel L. Wagner
Assistant Director of Housing and Residence Life, Operations	Judith C. Caruso
Associate Director of Housing and Residence Life, Assignments	Constance A. Robertson
Assistant Dean of Students and Director of Community Standards and Civility	Debra P. Monk
Assistant Director, Community Standards and Civility	Vacant
Assistant Dean of Students and Director, Multicultural Affairs	Patricia L. Alvarez
Associate Director, Multicultural Affairs and Leadership Initiatives	Daria Y. Graham
Assistant Director, Student Services	Carols T. Stewart
Director, Student Life and Kennedy Union	Amy D. Lopez-Matthews
Assistant Director, Programming	Amber Sibley

Assistant Director, Organizations and Events	Vacant
Assistant Director, KU Operations	Leanard A. Presock
Night Operations Manager	Allison Moon
Assistant Director, Conference and Business Services	Gwyn F. Stump
Associate Director, Scheduling and Events	Amy V. Lee
Assistant Director, Summer Conferences and Information Technology	Christopher Johnson
Assistant Director, New Student Programs	Melissa T. Flanagan
Director, Greek Life and Leadership Programs	Kevin M. Crane
Assistant Director, Greek Life and Leadership Programs	Vacant
Assistant Vice President of Student Development and Director of the Counseling Center	Steven D. Muller
Director, Campus Recreation	Vacant
Associate Director, Campus Recreation	David B. Ostrander
Associate Director, Campus Recreation	Donn W. Shade
Director, Student Health	Mary P. Buchwalder, M.D.
Assistant Dean of Students and Director, Community Wellness Services	Clare Dever
Associate Director, Counseling Center	Rebecca Cook
Assistant Director, Counseling Center	Erin Shiner
Director, Communications and Community Relations	Edel M. Jesse
Director, Information Technology	Brian S. Turner
Technology Support Specialist	Chris Wagner
Manager, Finance and Operations	Daniel J. Craighead

university advancement

Title	Name
Vice President for University Advancement	Deborah A. W. Read
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Associate Vice President for University Communications	Teresa J. Rizvi
Associate Vice President for Development	James F. Brothers
Assistant Vice President for Constituent Relations	Joyce E. Dean

athletic programs and facilities

Title	Name
Vice President/Director of Athletics	Tim Wabler

Assistant to the Vice President/Director of Athletics	Debbie Seaman
Associate Vice President of Athletics	Vacant
Assistant to the Associate Vice President of Athletics	Vacant
Assistant Director, Athletics/Director of Compliance	Neil Sullivan
Manager of Compliance	Angie Petrovic
Associate Director, Athletics/Director of Athletic Performance	Joe Owens
Senior Associate Director, Athletics/Director of UD Arena and Arena Sports Complex	Tim O'Connell
Director, Men's Basketball Season Tickets	Gary McCans
Senior Associate Director, Athletics/Development	Dave Harper
Senior Associate Director, Athletics/Sports Program Administration	Mike Kelly
Assistant Director, Athletics/Frericks Center Equipment and Transportation	Ken Keck
Academic Counselor	Elizabeth Flach
Academic Counselor	Vera Gomes
Director, Sports Information	Doug Hauschild
Assistant Director, Communications	Seth Iames
Assistant Director, Communications/Publications	Brian Karst
Assistant Director, Communications	Krystal Warren
Assistant Director, Manager or Multimedia Marketing	Michael LaPlaca
Assistant Director, Athletics/Business Manager/Senior Woman Administrator	Megan Winner
Assistant Athletics Business Manager	Margaret Gantt
Basketball Strength & Conditioning Coach	Paul Ivkovich
Strength & Conditioning Coach	Mark Thobe
Head Baseball Coach	Tony Vittorio
Associate Head Baseball Coach	Todd Linklater
Men's Head Basketball Coach	Archie Miller
Assistant Coaches	Allen Griffin, Kevin Kuwik, Tom Ostrom
Basketball Operations Coordinator	Bill Comar
Assistant Coordinator, Basketball Operations	Eric Farrell
Women's Head Basketball Coach	Jim Jabir
Assistant Coaches	Adeniyi Amadou, Angie Russell, Chris Vozab
Basketball Operations Coordinator	Amanda Fischer
Men's Cross Country Coach	Rich Davis

Women's Cross Country Coach	Sarah Hinkley
Women's Head Track & Field Coach	Vacant
Head Football Coach	Rick Chamberlin
Assistant Coaches	Landon Fox, Chris Ochs, Dave Whilding
Men's Head Golf Coach	Gip Hoagland
Women's Head Golf Coach	Sally Kosters
Women's Head Rowing Coach	Mike Wenker
Men's Head Soccer Coach	Dennis Currier
Assistant Coaches	Gabe Hall, Richardo Lara
Women's Head Soccer Coach	Mike Tucker
Assistant Coaches	Eric Golz, Tiffany Hansen
Head Softball Coach	Cara Clark LaPlaca
Assistant Coach	Sarah Harman
Men's & Women's Tennis Coach	Eric Mahone
Head Volleyball Coach	Kelly Sheffield
Assistant Coaches	Matt Affolder, Brittany Dildine
Manager of Sports Medicine	Nate Seymour
Head Trainer	Steve Foster
Assistant Trainer	Jaime Potter
Equipment & Awards Manager	Tony Caruso
Faculty Athletics Representative	J. Michael O'Hare, Ph.D.

Research Institute Staff

Abfalter, Garry H. (1988), Senior Research Engineer - B.M.E., University of Detroit, 1968; M.S., Oklahoma State University, 1972.

Adams, Ryan K. (2009), Associate Research Chemical Engineer - B.S., University of Dayton, 2007; M.S., 2009.

Altman, Servane S. (2003), Research Engineer - B.S., Institute Polytechnique (IPSA), 1998; M.S., Cranfield College of Aeronautics, 1999.

Amama, Placidus Bepoh (2008), Research Scientist - B.S., University of Calabar, 1992; Ph.D., Yokohama National University, 2002.

Anderson, David P. (1983), Senior Research Materials Scientist - B.A., University of Connecticut, 1973; M.S., University of Massachusetts, 1977; Ph.D., 1981.

Anneken, David T. (2009), Associate Research Engineer - B.S., University of Cincinnati, 2006.

Arbuckle, Nicole B. (2009), Associate Research Psychologist - B.A., Bellarmine University, 2006; M.A., University of Dayton, 2009.

Ashbrook, Phillip A. (2006), Associate Research Engineer - B.S., University of Dayton, 2006.

Aulds, J. Michael (1975), Senior Research Engineer - B.T., University of Dayton, 1975.

Ayyadurai, Mary S. (2011), Senior Materials Scientist-B.S., Stella Maris College, 1985; M.S. Loyola College, 1987; Ph.D., Indian Institute of Technology, 1992.

Bai, Zongwu (2003), Senior Research Scientist - B.S., Hebei University of Technology, 1983; M.S., 1988; Ph.D., Beijing University, 1995.

Ballal, Dilip R. (1983), Division Head-Energy and Environmental Engineering - B.S., Maulana Azad College of Technology, 1967; M.S., Cranfield Institute of Technology, 1968; Ph.D., 1972.

Balster, Lori M. (2000), Research Chemist - B.S., University of Dayton, 1994.

Barklay, Chadwick D. (2007), Group Leader-Senior Research Engineer - B.S., Wright State University, 1987; M.S., University of Dayton, 2004; Ph.D., 2007.

Beblo, Richard V. (2010), Research Engineer - B.S., Bucknell University, 2003; M.S., University of Pittsburgh, 2007; Ph.D., 2010.

Beitel, Frank E. (1978), Distinguished Research Computer Analyst - B.S., University of Dayton, 1974; M.S., Wright State University, 1984.

Bergman, Anthony J. (2003), Research Engineer - B.S., University of Dayton, 2001; M.S., 2005.

Binns, Kenneth E. (1995), Senior Research Engineer - B.M.E., University of Dayton, 1957.

Black, Brady (2008), Associate Image Process Engineer - B.S.E.T., University of Dayton, 2008.

Blair, John R (2001), Distinguished Research Engineer - B.S., Ohio State University, 1966; M.B.A., University of Dayton, 1979.

Blanchard, Robert E. (1977), Senior Research Engineer - B.S., Rensselaer Polytechnic Institute, 1975; M.S., Rochester Institute of Technology, 1977.

Blosser, Philip E. (2002), Research Engineer - B.S., Wright State University, 1984.

Boehle, Matthew C. (2009), Associate Research Engineer - B.S., University of Dayton, 2007.

Boehnlein, Thomas R. (2003), Research Software Engineer - B.S., Wright State University, 2003.

Bogle, Andrew E. (2010), Research Engineer - B.S., Michigan State University, 2001; M.S., 2004; Ph.D., 2007.

Bouchard, Michael P. (1981), Division Head-Aerospace Mechanics - B.S., University of Dayton, 1981; M.S., 1986.

Bowen, Loryn L. (2005), Research Biologist - B.S., Oklahoma State University, 1998.

Bowers, Drew M. (2007), Research Psychologist - B.S., University of Dayton, 2005; M.A., 2007.

Bowman, Daniel R. (1985), Group Leader-Distinguished Research Engineer - B.S., University of Dayton, 1985; M.S., 1988.

Braisted, William R. (1988), Group Leader-Senior Research Engineer - B.S., University of Dayton, 1988; M.S., 1991; Ph.D., 2000.

Briones, Alejandro M. (2007), Research Engineer - B.S., University of Illinois at Chicago, 2002; M.S., 2004; Ph.D., 2007.

Brockman, Robert A. (1973), Distinguished Research Engineer - B.S., Carnegie Mellon University, 1973; M.S., University of Dayton, 1974; Ph.D., 1979.

Brown, Lisa, M. (2008), Research Biologist- B.S., Marshall University, 2003; M.S., 2006.

Brown, Lisa M. (2008), Research Biologist - B.S., Marshall University, 2003; M.S., 2006.

- Brunke, Lyle B. (2004), Associate Research Engineer - B.S., Wright State University, 2003.
- Buchanan, Dennis J. (1991), Group Leader-Senior Research Engineer - B.S., University of Wisconsin, 1989; M.S., 1991; Ph.D., University of Dayton, 2007.
- Buhrmaster, Diane (2003), Senior Research Engineer/Scientist - B.S., Wright State University, 1998; B.S., 2001.
- Burke, Jack L. (2006), Associate Research Engineer - B.S., Wright State University, 2006; M.S., University of Dayton, 2008.
- Byrd, R. Alan (2004), Senior Research Engineer - B.S., Georgia Institute of Technology, 1982; M.S., 1983.
- Calder, David K. (2008), Senior Research Engineer - B.S., Brigham Young University, 1985; M.S., Purdue University, 1991.
- Cerbus, Clifford A. (1984), Senior Research Physicist - B.S., Xavier University, 1982; M.S., University of Dayton, 1984.
- Chen, Chenggang (2000), Senior Research Scientist - B.S., Hangzhou University, 1987; M.S., Zhejiang University, 1989; Ph.D., Case Western Reserve University, 1999.
- Cherry, Matthew R. (2010), Associate Research Engineer - B.S., Wright State University, 2009.
- Claiborne, David W. (2011), Associate Research Engineer- B.S., Wright State University, 1005; M.S., Rensselaer Polytechnic Institute, 2002.
- Claude, Daniel T. (2001), Associate Visual Communications Designer - B.S., University of Dayton, 2001.
- Cole, Andrew N. (2009), Associate Research Engineer - B.S., University of Dayton, 2009; M.S., 2009.
- Coleman, James T. (1990), Research Engineer - B.S., University of Dayton, 2003.
- Collins, Brittany N. (2011), Associate Research Engineer - B.S., University of Dayton, 2010; M.S., 2010.
- Connally, Benny G. (1977), Research Lead Information Technical Analyst.
- Cory, Joshua R. (2011), Associate Research Engineer - B.S., University of Cincinnati, 2007.
- Courson, David L. (2005) Associate Research Engineer - B.S., University of Dayton, 2010.
- Craft, Michael D. (1996), Senior Research Electrical Engineer - B.S., University of Cincinnati, 1992; M.S., University of Dayton, 2009.
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- Thomas, Ronald L. (1999), Internet/Programmer Analyst.
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- Wolf, James D. (1979), Group Leader-Senior Research Materials Scientist - B.S., University of Dayton, 1979; M.S., 1982.
- Workman, John M. (2010), Senior Research Materials Scientist - B.S., Miami University, 1971; M.S., University of Cincinnati, 1985; Ph.D., 1987; M.A., Wright State University, 1995.
- Yamada, Takahiro (1999), Senior Research Chemist - B.S., University of Osaka, 1985; M.S., 1987; M.S., University of New Haven, 1994; Ph.D., New Jersey Institute of Technology, 1999.
- Yoon, Yuhchae (2006), Research Scientist - B.S., Yonsei University, 1996; M.S., 1998; M.S., Ohio State University, 2002; Ph.D., 2004.
- Zabarnick, Steven S. (1988), Group Leader-Distinguished Research Chemist - B.S., State University of New York at Binghamton, 1980; Ph.D., Pennsylvania State University, 1984.
- Zhang, Qiuhong (2011), Materials Scientist.
- Zhou, Eric Guangming (2005), Research Engineer - B.S., China Textile University, 1986; M.S., Kansas State University, 1999.

College of Arts and Sciences

Paul H. Benson, Dean
 Don L. Pair, Associate Dean
 Donald J. Polzella, Associate 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 biology, chemistry, communication, English, mathematics, pastoral ministries, psychology, and theological studies. 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.

The Department of Physics, as part of the Center for Electro-Optics, offers graduate courses in support of the Master of Science and the Doctorate of Philosophy in Electro-Optics. The Doctor of Philosophy degree is also offered by the Department of Biology and the Department of Religious Studies.

Programs of Study

To learn more about the available programs in the College of Arts and Sciences, explore the departments in the menu on the right.

Biology

- Doctorate of Philosophy, Biology
- Master of Science, Biology

Jayne B. Robinson, Department Chairperson
 Mark G. Nielsen, Graduate Program Director

Please visit our department website at biology.udayton.edu

The Department of Biology offers programs leading to the Master of Science and the Doctor of Philosophy (catalog.udayton.edu/graduate/collegeofartsandsciences/programsofstudy/biology/http://www.udayton.edu). 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, choice of thesis or dissertation topic, and participation in weekly seminars in the area of interest. The specific program is determined after consultation between the student and the advisory committee. The Department of Biology also offers a Master of Science program without a thesis requirement. Two major areas of specialization are available. These areas and the typical spectra of graduate BIO 101 courses available are as follows:

Environmental/Ecological Sciences

- Field Biology
- Microbial Ecology
- Biochemistry
- Molecular Biology
- Community Ecology
- Behavioral Ecology
- Biometrics
- Advanced Bioinformatics
- Biochemical Genetics

- Evolution and Development
- Ecosystem Dynamics

Basic Biomedical Sciences

- Advanced Developmental Biology
- Biochemical Genetics
- Immunology
- Biochemistry
- Advanced Bioinformatics
- Biometrics
- Advanced Microbiology
- Advanced Cell Biology
- Molecular Biology
- Bioinstrumentation

Assistantships

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

Advising

Each 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 will serve 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. The committee generally meets with the student twice a year to offer suggestions and assess progress in the program and thesis research.

Doctorate of Philosophy in Biology (BIO)

Each student is required to complete each course by the end of the first year:

BIO 552	Biolog Instrm	8-10
& BIO 553	and Rsrch Meth in Ecol	
BIO 501	Seminar	0
BIO 601	Special Topics	1
Two advanced courses		6

Following completion of the first year, each doctoral student follows the program outlined by the advisory committee. In practice, most students find it helpful to take at least 30 semester hours of graduate course credits beyond the bachelor's degree in addition to 30 credit hours of dissertation research to attain the level of competence suitable for a doctoral candidate. All Ph.D. students who have not taken a biostatistics course as an undergraduate must enroll in BIO 550 Biometrics. Individuals on teaching assistantships must complete the teaching seminar BIO 503 College Teach Sem and teach at least one laboratory course during their tenure in the program.

Residence Requirement

A student is strongly advised to devote as much time as possible to graduate studies. To satisfy the residency requirement, Ph.D. students must attend the University as a full-time student. The Ph.D. program is a full-time only program. If the advisory committee encourages attendance

of a semester or a summer as a full-time student at a neighboring institution or in an off-campus research site, that time may be applied to the residence requirement.

Sequence of Evaluation

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

1. A qualifying examination at the beginning of the second year of full-time graduate study for all graduate students.
2. A candidacy examination over the area of specialization (Ph.D. students only).
3. A defense of dissertation.

Each semester the graduate coordinating committee evaluates the overall performance of each student 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 the Manual for Graduate Studies in the Department of Biology at the University of Dayton.

Qualifying Examination

At the beginning of the second full year of graduate work, all Ph.D. students will take a qualifying examination. An important purpose of the examination is to aid the student's advisory 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.

Utilizing the student's performance in both the written and oral phases of the exam, the advisory committee makes an evaluation and suggests one of the following possible alternatives:

1. The student should continue to work toward completion of the Ph.D. degree.
2. The student should correct obvious deficiencies and retake the written and/or oral examination(s) - (retake must be scheduled no later than the middle of the next semester and result in a clear pass or fail/withdrawal from graduate work).
3. After consultation with the advisory committee, the student should switch to the M.S. program.
4. The student should withdraw from graduate work (student has failed the examination without an opportunity of a second chance).

All other graduate examinations come at specific times in the progress of the student's program and are scheduled and administered by the advisor and advisory committee. These examinations consist of the Ph.D. candidacy examination, and the defense of the Ph.D. dissertation.

Ph.D. Candidacy Examination

The candidacy 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 chair. The examination will be taken no later than the end of the sixth semester for those entering the program with a B.S. or M.S. The purpose of the examination is to judge the student's competence in the special area and in related fields. Following the examination, 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 Ph.D. program and complete a thesis M.S. degree, or (d) 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 Dissertation

1. The examination on the Ph.D. dissertation will consist of a formal oral examination on the subject matter of the dissertation.
2. A Ph.D. student must present the dissertation for defense within five years after admission to candidacy.

Master of Science in Biology (BIO)

The M.S. degree requires 24 semester hours of coursework plus a research thesis. Each student is required to complete each course by the end of the first year:

BIO 552	Biolog Instrm	8-10
& BIO 553	and Rsrch Meth in Ecol	
BIO 501	Seminar	0
BIO 601	Special Topics	1
Two advanced courses		6

All M.S. students who have not taken a biostatistics course as an undergraduate must enroll in BIO 550 Biometrics. Individuals on teaching assistantships must complete the teaching seminar BIO 503 College Teach Sem and teach at least one laboratory course during their tenure in the program.

Students declaring the M.S. non-thesis option are required to complete 30 hours of coursework consisting of the aforementioned courses.

A research paper is required, and the subject matter of the paper is determined by the advisory committee.

Combined B.S./M.S. Program

The B.S./M.S. in Biology is an accelerated, highly structured program 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. The combined B.S./M.S. Program in Biology is open only to students pursuing a B.S. degree in Biology or Environmental Biology at the University of Dayton. Interested students should apply by October 15th of their Junior Year (or credit hour equivalent) of undergraduate education. Qualified students will have a minimum of a 3.5 science GPA (BCMP). The general GRE is required for admission to the program. Applicants are conditionally admitted to the program until completion of their B.S. degree, after which they will be officially admitted into the program. Students will be expected to begin Honors undergraduate thesis research in the summer prior to their 4th year of undergraduate education. The undergraduate B.S. degree in Biology or Environmental Biology will be awarded at the completion of the 4th year. The fifth year is devoted to graduate coursework and thesis research. Students are expected to maintain a graduate GPA of 3.5. Students will be expected to conduct research during the summer between the 3rd and 4th, 4th and 5th year, and the summer after their 5th year with defense of the M.S. thesis anticipated for August of that summer. The master's degree in Biology is awarded upon the successful defense of the M.S. thesis. No tuition waivers or financial support exists for the 5th year of this program, though summer research fellowship support is available on a competitive basis. Applications can be submitted through the online UD

Graduate School application site: <http://gradadmission.udayton.edu/>. Please indicate the B.S./M.S. option on your application.

Residence Requirement

A student is strongly advised to devote as much time as possible to graduate studies. To satisfy the residency requirement, M.S. students must attend the University as a full-time student for at least one full year. If the advisory committee encourages attendance of a semester or a summer as a full-time student at a neighboring institution or in an off-campus research site, that time may be applied to the residence requirement.

Sequence of Evaluation

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

1. A qualifying examination at the beginning of the second year of full-time graduate study for all graduate students.
2. A defense of thesis.

Each semester the graduate coordinating committee evaluates the overall performance of each student 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 the Manual for Graduate Studies in the Department of Biology at the University of Dayton.

Qualifying Examination

At the beginning of the second full year of graduate work, all M.S. students will take a qualifying examination. An important 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.

Utilizing the student's performance in both the written and oral phases of the exam, the advisory committee makes an evaluation and suggests one of the following possible alternatives:

1. The student should continue to work toward completion of the M.S. degree.
2. The student should correct obvious deficiencies and retake the written and/or oral examination(s) - (retake must be scheduled no later than the middle of the next semester and result in a clear pass or fail/withdrawal from graduate work).
3. The student should withdraw from graduate work (student has failed the examination without an opportunity of a second chance).
4. M.S. students who show outstanding ability and wish to proceed toward the Ph.D. may be encouraged to stay at UD. They are required to pass the qualifying exam, present and defend an oral research progress report, and Ph.D. proposal to their advisory committee in their third semester of the program. The advisory committee will decide if the student shows sufficient ability to enter the Ph.D. program. Upon positive recommendation from the advisory committee, the student must submit a formal application for admission to the Ph.D. program to the Admissions Committee by the third week of their fourth semester of the program. The Admissions Committee will make the final recommendation regarding their acceptance. If accepted, the student must conform to all requirements of the Ph.D. program.

5. At the time of the qualifying exam, both the student and advisory committee have the final opportunity to review the choice of the M.S. program - thesis or non-thesis option. For the non-thesis option, the nature of the requirements should be specified by the advisory committee. If under unusual circumstances, a student wishes to change options after this date and the advisory committee concurs, it should be recognized that this may result in an additional semester or more of work. However, consideration should be given to the availability of support for continuation of a M.S. program beyond two years.

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 doctorate (see requirements above) or to terminate his/her studies at the university on the basis of his/her performance in earning the Master's degree.

All other graduate examinations come at specific times in the progress of the student's program and are scheduled and administered by the advisor and advisory committee. These examinations consist of the defense of M.S. thesis and the final M.S. non-thesis program exam.

Defense of Thesis

1. The examination on the M.S. thesis will consist of a formal oral examination on the subject matter of the thesis.
2. For students electing the non-thesis option, an oral examination is held over the subject matter of the research paper.
3. All those working toward the master's degree must complete the program within five years after admission to the program.

Courses

BIO 501. Seminar. 0 Hours

SEMINAR - Presentation of biological research data by faculty members and visiting scientists. Required of all graduate students each semester.

BIO 503. College Teach Sem. 1 Hour

COLLEGE TEACHING SEMINAR - To assist graduate teaching assistants in acquiring information, understanding, and skills seen as important components of effective teaching.

BIO 511. Ecosystem Dynamics. 3 Hours

ECOSYSTEM DYNAMICS - An advanced course examining ecosystem structure and function. Emphasis on community level interactions, applied ecology and the ways in which ecosystem biodiversity can be influenced by the biotic and abiotic forces of the environment, including the global impact of the human species.

BIO 522. Immunology. 3 Hours

IMMUNOLOGY - Study of innate and acquired immunity, cells and organs of the immune system, antigens and immunoglobulins. Specific emphasis on the organization and expression of immunoglobulin genes; genetic restriction; cytokines and immune regulation including hypersensitivity, immune tolerance, transplantation and autoimmunity. Biochemistry recommended.

BIO 535. Problems In Field Bio. 1-3 Hours

PROBLEMS IN FIELD BIOLOGY - Course designed to acquaint students with field-oriented problems in biology.

BIO 545. Evolution & Develop. 3 Hours

EVOLUTION AND DEVELOPMENT - Molecular and population genetic examination of the evolution of animal form. Topics include comparative developmental biology, population genetics, and molecular evolution. Prerequisite(s): Student status in Biology or permission of instructor.

BIO 550. Biometrics. 3 Hours

BIOMETRICS - Design and analysis of experiments in quantitative biology. Parametric and nonparametric analyses of both laboratory and field-generated data sets.

BIO 551. Lab Skills in BIO. 2 Hours

LAB SKILLS IN BIOLOGY - Laboratory Skills in the Biological Sciences (BIO 552-P3), taught in department of Biology, is tailored to introduce our graduate students to this fast changing field of research by teaching shared methodologies and techniques involved in biology. Prerequisite(s): Graduate Student Standing.

BIO 552. Biolog Instrm. 4-6 Hours

BIOLOGICAL INSTRUMENTATION - Theory and applications of protein and nucleic acid techniques designed to acquaint students with advanced laboratory techniques used in biological research. Prerequisite(s): Graduate Student Standing.

BIO 553. Rsrch Meth in Ecol. 4 Hours

RESEARCH METHODS IN ECOLOGY - Advanced research techniques and instrumentation in Ecology and Field Biology. Prerequisite(s): Graduate Student Standing.

BIO 554. Scientific Practice. 2 Hours

SCIENTIFIC PROCESS - Students are prepared for practicing aspects of a scientific profession. Scientific ethics, grant and manuscript writing, internal regulatory boards, and intellectual properties are covered. This course also covers topics in the responsible conduct of research drawing from case studies from the Association of American Medical Colleges and the NIH. Students will review case studies in preparation for class discussion. Prerequisite(s): Graduate Student Standing.

BIO 555. Lab Techniques. 1-3 Hours

LABORATORY TECHNIQUES (TOPIC) - Advanced treatment of new techniques and instrumentation used in specialized areas of biology. Changes with advances in a specialty are reflected in the course title.

BIO 594. Molecular Biology. 3 Hours

MOLECULAR BIOLOGY - THEORY AND PRACTICE - Introduction to the theory and practice of molecular biology techniques. Topics and laboratory exercises include the enzymatic manipulation of DNA and RNA, Southern and Northern blotting, library screening, DNA sequencing, DNA amplification, and gene promoter structure and function.

BIO 596. Current Bio Problems. 1-3 Hours

CURRENT BIOLOGY PROBLEMS - Consideration of recent developments in biological thought and procedure. Prerequisite(s): Permission of department chairperson.

BIO 599. Thesis. 1-6 Hours

THESIS - Research for the master's degree.

BIO 601. Special Topics. 1 Hour

SPECIAL TOPICS - Development, presentation, and discussion of topics in specialized areas of biology. Required of graduate students each semester.

BIO 699. Dissertation. 1-6 Hours

DISSERTATION - Research for the doctoral degree.

Chemistry

Mark Masthay, Department Chairperson

Kevin M. Church, MS Program Director

The Department of Chemistry offers graduate programs leading to the Master of Science in chemistry.

The purpose of the master's program in chemistry is to present a rigorous approach to modern chemical theories and research.

The student and advisor determine the composition of the program of study with the approval of the graduate committee. 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 research thesis. Additional coursework may be substituted if the student has previously demonstrated research proficiency commensurate with a master's degree as judged by the graduate committee.

Assistantships

Teaching assistantships requiring a maximum of nine hours of laboratory instruction per week are available. The stipend for a 9 to 12 month appointment is supplemented by tuition remission for graduate coursework. Appointment as a teaching assistant requires fluency in spoken English. Research assistantships in selected areas are sometimes available.

Master of Science in Chemistry (chm)

A minimum of 30 semester hours of graduate coursework is required for the Master of Science. This includes 21-24 semester hours of coursework and 6-9 hours of research. The student and advisor determine the composition of the program of study with the approval of the graduate committee. 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 research thesis. Additional coursework may be substituted if the student has previously demonstrated research proficiency commensurate with a Master's degree as judged by the graduate committee.

Non-Thesis Option

CHM 541	Topics-Physical Chemistry	3
CHM 515 & 515L	Analytical Chemistry and Analytical Chem Lab	4
CHM 512	Intermed Organic Chm	3
CHM 517	Inorganic Chemistry	3
Select four courses from:		12
CHM 550	Sp Top: Organic Chm	
CHM 544	Coordination Chem	
CHM 546	Sp Top: Mod Anly Chem	
CHM 539	Sp Tp: Physical Chm	
CHM 552	General Biochem II	
Electives		6
Total Hours		31

Courses

CHM 512. Intermed Organic Chm. 3 Hours

INTERMEDIATE ORGANIC CHEMISTRY - Modern theory of organic chemistry and reaction mechanisms. Prerequisite(s): CHM 314 or equivalent.

CHM 515. Analytical Chemistry. 2 Hours

ANALYTICAL CHEMISTRY - Methods of analysis based on modern instrumentation including chemical, electrical, and spectral methods. Prerequisite(s): CHM 201 or CHM 302 or CHM 304.

CHM 515L. Analytical Chem Lab. 2 Hours

ANALYTICAL CHEMISTRY LABORATORY - Laboratory course to accompany CHM 515.

CHM 517. Inorganic Chemistry. 3 Hours

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, electrochemistry, molecular symmetry, and the chemistry of representative elements.

CHM 525. Prin-Organic Chem. 3 Hours

PRINCIPLES OF ORGANIC CHEMISTRY - An introduction to the fundamentals of organic chemistry. Prerequisite(s): CHM 124.

CHM 526. Prin-Organic Chem. 3 Hours

PRINCIPLES OF ORGANIC CHEMISTRY - An introduction to the fundamentals of organic chemistry. Prerequisite(s): CHM 124.

CHM 528. Theoretical Prin Chm. 3 Hours

THEORETICAL PRINCIPLES OF CHEMISTRY - Prerequisite(s): MTH 218.

CHM 528L. Theor Prin Chm Lab. 1 Hour

THEORETICAL PRINCIPLES OF CHEMISTRY LABORATORY - Laboratory course to accompany CHM 527 - CHM 528. One three-hour laboratory per week.

CHM 536. Biosynthetic Org Chm. 3 Hours

BIOSYNTHETIC ORGANIC CHEMISTRY - Mechanistic fundamentals of the biosynthesis and transformation of organic natural products, with special emphasis on medicinal compounds, toxins, pheromones and other secondary metabolite structures. Prerequisite(s): CHM 314, CHM 314L or equivalent.

CHM 539. Sp Tp: Physical Chm. 3 Hours

SPECIAL TOPICS IN PHYSICAL CHEMISTRY - Topics of current interest in areas such as chemical instrumentation, electronics, physical biochemistry, macromolecular chemistry, and spectroscopy.

CHM 541. Topics-Physical Chemistry. 3 Hours

TOPICS IN PHYSICAL CHEMISTRY - Modern aspects of physical chemistry, which may include the solid state, electrochemistry, or mathematical methods of physical chemistry.

CHM 544. Coordination Chem. 3 Hours

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(s): CHM 517 or equivalent.

CHM 546. Sp Top: Mod Only Chem. 3 Hours

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.

CHM 550. Sp Top: Organic Chm. 3 Hours

SPECIAL TOPICS IN ORGANIC CHEMISTRY - Modern physical organic chemistry, spectroscopy, photochemistry, molecular rearrangements, stereochemistry, and natural products.

CHM 551. General Biochem I. 3 Hours

GENERAL BIOCHEMISTRY I - Discussion of the chemistry and biochemistry of carbohydrates, amino acids, proteins, and nucleic acids, including health-science and methodologic aspects. Descriptions of enzymology, protein purification, and carbohydrate metabolism related to such topics as bioenergetics, membranes, and disease processes. prerequisite(s): CHM 201, CHM 314.

CHM 552. General Biochem II. 3 Hours

GENERAL BIOCHEMISTRY II - Discussion of selected topics in bioenergetics, and metabolism of lipids, amino acids, porphyrins, nucleic acids, and proteins. Current aspects of nutrition, biochemical genetics, endocrinology, regulation, and genetic engineering are addressed and related to health-science topics as time permits. Prerequisite(s): CHM 551.

CHM 553. Topics: Biochemistry. 1-3 Hours

TOPICS IN BIOCHEMISTRY - Topics of current interest in biochemistry. Prerequisite(s): (CHM 551 or CHM 552) or permission of instructor.

CHM 554. Directed Readings. 1-3 Hours

DIRECTED READINGS - Readings in Chemistry.

CHM 555. Modrn Trends in Chm. 3 Hours

MODERN TRENDS IN CHEMISTRY - An advanced topics course that offers an up-to-date treatment of new areas of research. Possible subjects to be offered in this course include, but are not limited to, synthetic chemistry of natural and medicinal products, nano-materials/polymer chemistry, and advanced biochemical topics. Prerequisite(s): Graduate standing.

CHM 557. Biophysical CHM. 3 Hours

BIOPHYSICAL CHEMISTRY - Biophysical Chemistry.

CHM 560. Research I. 0-9 Hours

RESEARCH I - Research.

CHM 561. Research II. 0-9 Hours

RESEARCH II - Research.

Communication

- Master of Arts in Communication

Jon Hess, Department Chairperson
Donald D. Yoder, Graduate Studies Director

The graduate program in Communication leads to a Master of Arts degree.

Course work within the Department of Communication focuses upon symbolic processes in human communication in a variety of contexts including health communication, organizational communication, and mass communication. The program will provide a solid grounding in research, theory, message development, and analysis to prepare graduates for careers in education, business, mass media, and/or government.

The master's student should begin study in the Department of Communication with the standard undergraduate competencies. If the student lacks such competencies, they should be developed prior to attempting the master's program. Students receiving the master's degree from the Department of Communication must:

1. Have a thorough grounding in theories relevant to a particular area of interest, and have the ability to apply this knowledge to the solution of a variety of communication-related problems;
2. Have been exposed to a variety of research and analytical or critical methods, have a basic understanding of these, and have demonstrated a working command of at least one methodology; and
3. Have a basic knowledge of and appreciation for approaches to the study of communication from a variety of perspectives.

Assistantships

A small number of graduate teaching assistantships are available annually. The assistantships carry a stipend and tuition remission for courses required for the degree. The assistantships are for one year with possible renewal for one additional year. No student can receive an assistantship for more than two academic years. Assistantships are only offered for the Fall term. The deadline for applying for an assistantship is March 9th.

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 three years.
2. A 3.0 undergraduate cumulative point average (or the equivalent) and a 3.0 in the academic major or minor (communication).
3. Admission to the master's degree program in communication on regular status.

Advising

The advisor serves the student in planning the program of study, supervising the administration of comprehensive examinations, and (when appropriate) directing the student's thesis project.

The graduate program director serves as a temporary advisor to assist the student with initial enrollment and program planning. The student should choose a permanent advisor from among available communication faculty before the middle of the second semester (or completion of nine semester hours). The student must gain approval from the faculty member and the program director before the faculty member will be appointed as permanent advisor. Subsequent changes of advisor require approval of the program director.

After consultation with the permanent advisor, the student should submit a proposed program plan (on the forms provided by the program director) no later than the end of 12 semester hours. A copy of the proposed program should be on file in the program director's office.

Master of Arts in Communication (cmm)

General Requirements

All students enrolled in the program are subject to the following general requirements.

1. The number of semester hours as specified by the program options described below.
2. All students must complete the following core requirements:

COM 501	Communcatn Resrch	3
COM 536	Theories&Models-Comm	3
COM 502	Rhetorical Criticism	3
or COM 503	Comm Resrch Seminar	
COM 517	Organizational Comm	3
or COM 571	Mass Com Proc&Effcts	
Total Hours		12
3. Demonstration of satisfactory progress toward the degree which includes the requirement that students maintain a minimum average of B (3.0) in coursework. Students who fail to meet this requirement will be dismissed from the program.
4. Students are permitted no more than six semester hours with grades of C or lower. Students who fail to meet this requirement will be dismissed from the program.
5. It is the student's responsibility to know and to meet the requirements of the University and of the Department of Communication graduate program.

NOTE: It is expected that each master's students will enroll in the required core courses as early as possible.

Program A - Communication Non-Thesis Option

Program A consists of 36 semester hours of coursework, of which 24 semester hours must be from the Department of Communication. Students who choose Program A are required to successfully complete the core requirements as early as possible in the academic program. Students in Program A are encouraged to complete a capstone project or independent study project in their final semester of coursework.

All students choosing Program A must take the comprehensive examination during their last semester of classes. (See the subsequent section on Comprehensive Examination for more information.)

Program B - Communication Thesis Option

Program B consists of 30 to 33 semester hours of coursework, 18 semester hours of which must be from the Department of Communication. In addition, students complete three to six credit hours of COM 598 Thesis and/or COM 599 Thesis. Students choosing to write a thesis must complete the comprehensive examination during their final term of coursework. (See the subsequent section on Comprehensive Examination for more information.)

The student will select a thesis committee consisting of the advisor and at least two other faculty members. (One of the faculty members may be from outside the Department of Communication.) Students may register for three semester hours of COM 598 Thesis during the term that the prospectus will be presented to the thesis committee for approval.

The thesis should report original research on some important question relevant to the study of communication. The prospectus should also include a detailed description of the research methods to be used as well as suggested analytic techniques.

The prospectus will be developed in consultation with the thesis advisor, although the student must have the methodological competence necessary to complete the proposed project. Once the prospectus is approved by the advisor, it must be presented to the thesis committee

for approval. The completed prospectus will constitute the first half of the thesis and serves, essentially, as a contract between the student and the committee.

After the prospectus has been approved, the student may register for an additional three hours of thesis credit while completing COM 599 Thesis. The student will then collect and analyze the data required to answer the questions raised in the prospectus. Once this has been completed, the prospectus will become the first half of the thesis, followed by a chapter reporting the results of the study and a chapter discussing the implications of those results. The thesis will be revised until the advisor considers it satisfactory, at which time it will be presented to the members of the thesis committee by the student, who will orally defend the thesis in an examination conducted by the thesis committee. The master's degree is not completed until the thesis has been approved by the committee.

Should a student fail the final oral defense, the thesis may be defended again, provided the student's thesis committee recommends a second attempt. The second attempt to defend the thesis will be final. Failure of the second oral defense will require a majority vote of the student's thesis committee.

Program C - Communication/Interdisciplinary

Courses in business administration, English, psychology, and political science have been designated for Communication/Interdisciplinary study leading to the Master of Arts.

Students take 36 semester hours of coursework; 24 of those hours must be in communication and 12 in one of the interdisciplinary areas. Students who choose Program C are required to successfully complete the core requirements. All students choosing Program C must take the comprehensive examination during their last semester of classes. (See the subsequent section on Comprehensive Examination for more information.)

Program D - 5 Year BA + MA

A five-year BA+MA program in communication is also available. Communication majors maintaining a 3.2 overall GPA are invited to apply during their junior year. Students accepted into the program will take two graduate courses during their senior year. These six credits will count toward their MA degree as well as toward their BA degree. Contact the Director of Graduate Studies at (937) 229-2028 for further information about the program.

Comprehensive Examination

After consulting with the Program Director and advisor, the student selects faculty members (with their approval) to form an examination committee. The examination committee writes the examination questions, evaluates the student's written answers, and conducts the oral examination. Normally, at least three faculty members write questions and evaluate the comprehensive exam. The advisor may or may not participate in the writing and evaluating of exam questions. One of the members of the examination committee may be from outside the Department of Communication. The advisor administers the examination.

The comprehensive examination consists of a written examination at least six hours in length and a one-hour oral defense. The form and content of the exam is determined by the advisor and the faculty examination committee.

Written Examination

The written examination covers the coursework completed by the student, including both research methods and communication theory. The particular topic areas covered, and the number of hours of examination

devoted to each topic area are determined by the student, the advisor, and the examination committee.

The exam will be written without notes, at a time and place specified by the Program Director. Specific resource materials may be permitted only if indicated by the examiner on the test question.

Oral Examination

After satisfactory completion of the written examination, the student will defend answers in an oral examination. Students prepare for the oral examination by consulting the advisor and examination committee concerning performance on the written exam.

Under extreme circumstances, an oral exam may be retaken once, only if recommended by the committee. Generally, prior to retaking the oral exam, the student must complete either additional coursework or a research paper. A student who has already taken additional classes and written a research paper will be dismissed from the program. Failure of the second oral exam will result in dismissal.

Courses

COM 501. Communication Research. 3 Hours

COMMUNICATION RESEARCH AND METHODS - Introduction to the study of communication research and methods. Required course for all communication graduate students.

COM 502. Rhetorical Criticism. 3 Hours

RHETORICAL CRITICISM - Critical survey and application of traditional to contemporary methods of rhetorical criticism.

COM 503. Communication Research Seminar. 3 Hours

COMMUNICATION RESEARCH SEMINAR - Focused study on the methods and process of conducting communication-related research. Builds upon fundamentals covered in COM 501. Prerequisite(s): COM 501.

COM 506. Ethics of Communication. 3 Hours

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.

COM 508. Interpersonal Communication. 3 Hours

INTERPERSONAL COMMUNICATION - Focus on the theories, concepts, constructs, and research related to the process of interpersonal communication.

COM 511. Theories of Persuasion. 3 Hours

THEORIES OF PERSUASION - An examination of the major approaches to the study of persuasion from classical rhetorical to contemporary behavioral theorists.

COM 515. Language and Meaning. 3 Hours

LANGUAGE AND MEANING - Focuses on the origin and development of language and meaning. Comprehensive exploration of the many perspectives and theories of language and meaning.

COM 517. Organizational Comm. 3 Hours

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.

COM 530. Development-Mass Media. 3 Hours

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 the U.S.

COM 531. Directed Study-Comm. 1-3 Hours

DIRECTED STUDY OF COMMUNICATION - An intensive study of a specialized area of communication selected through consultation with the instructor. Permission. May be repeated for up to six semester hours.

COM 536. Theories&Models-Comm. 3 Hours

THEORIES AND MODELS OF COMMUNICATION - Survey and analysis of current theories and models of communication. Required course for all communication graduate students.

COM 537. Conflict Management. 3 Hours

CONFLICT MANAGEMENT - An analysis of the role of communication in the process of conflict, with special emphasis on communication strategies for managing conflict. Special focus on types of conflict, conflict contexts, power, and communication style.

COM 547. Seminar- Hlth Comm. 3 Hours

SEMINAR IN HEALTH COMMUNICATIONS - An examination of communication theory and research related to health care. Issues include reassurance, the role of the patient, interviews, health organizations, the media and health, compliance, providing explanations, and health care professions frequently neglected.

COM 555. Public Relations. 3 Hours

PUBLIC RELATIONS - Focuses on the theoretical principles behind the current-day practice of public relations. Special emphasis on public opinion, diffusion, persuasion, problem analysis, and audience assessment within the PR context.

COM 562. Topics-Communicatns. 3 Hours

TOPICS IN COMMUNICATION - Selected topics in communication, for example: argumentation, listening, law and the news media, historical and contemporary public address and criticism. Repeated when topic and instructor change.

COM 571. Mass Com Proc&Effcts. 3 Hours

MASS COMMUNICATION PROCESSES AND EFFECTS - An examination of the historical and current research as it relates to our understanding of the processes and effects of mass communication.

COM 598. Thesis. 3 Hours

THESIS - Thesis.

COM 599. Thesis. 3 Hours

THESIS - Thesis.

COM 620. Election Campgn Com. 3 Hours

ELECTION CAMPAIGN COMMUNICATION - Survey of communication research and theories concerning election campaign communication including candidates, voters and the media. Analysis of campaign communication including development of appropriate research methodologies.

COM 630. International Com. 3 Hours

INTERNATIONAL COMMUNICATION - Discussion of current issues in international communication. Possible topics include international news flow, globalization of mass media, communication and development, comparative mass media, mass media in political revolutions, democracy and terrorism.

Computer Science

- Master of Computer Science

Dale Courte, Department Chairperson

Graduate Committee: Dale E. Courte, Barbara A. Smith

The graduate program in computer science offers a comprehensive approach to the theory and application of computer science. Graduates of the program will have:

1. A thorough grounding in the theory of computing science and the ability to apply that knowledge to a variety of problem areas,
2. Been exposed to a variety of analytical methods and will demonstrate a basic understanding of those methods, and
3. Been exposed to a wide breadth of computer science information by having studied several of the dominant sub-disciplines of computer science.

The program is individualized to meet each student's needs and provides a firm foundation for continuing on to the doctorate or a professional career. The program accommodates both full-time and part-time students.

Assistantships

Graduate assistantships are offered to qualified students for assisting with introductory computer science courses and assisting faculty with research. 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 application forms may be obtained from the Department of Computer Science.

Additional Information

See http://www.udayton.edu/artsscience/computerscience_grad for additional and recent information on the Department of Computer Science graduate program; see <http://gradadmission.udayton.edu> for admission requirements for the Department of Computer Science graduate program; see <http://gradschool.udayton.edu/> for general information on the University of Dayton Graduate School.

Master of Computer Science (cps)

The degree requires 33 semester hours.

Each student's program requires the advance approval of a faculty advisor. A student failing to make normal progress will be required to withdraw from the program.

CPS Electives ¹	6
Required Courses	
CPS 530 Algorithm Design	3
CPS 536 Operating Systems I	3
Breadth Requirement - from 3 of 5 areas:	9
Software Development Methodologies	
CPS 510 Systems Analysis	
CPS 512 Systems Design	
CPS 518 Software Engineering	
CPS 522 Software Proj Mgmt	
CPS 520 Obj- Orient Sys Dev	
CPS 592 Special Topics ²	
Information Technologies	
CPS 542 Database Mgt Sys I	
CPS 552 Discrete Evt Simultn	
CPS 560 Computer Graphics	
CPS 562 Database Mgt Sys II	
AI/Soft Computing	
CPS 580 Artifcl Intellg	
CPS 581 Adv Artifcl Intell	
CPS 592 Special Topics ³	
Systems and Architecture	
CPS 570 Data Communications	
CPS 572 Computer Networking	
CPS 577 Computer Sys Desgn	
CPS 592 Special Topics ⁴	
Foundations	
CPS 543 Comparative Languages	
CPS 544 Systems Programming	
CPS 582 Automata Theory	
Open Electives ⁵	6
Culminating Experience ⁶	6
Total Hours	33

1 Six semester hours from two additional CPS courses numbered 510 and above, to provide either further breadth of study, or depth of study in an area chosen by the student.

2 Software Testing

3 Evolutionary Computation

4 Software Reverse Engineering

5 Six semester hours from graduate courses from other university departments (with advisor approval) or additional CPS courses numbered 510 or above.

6 Six semester hours from one of three options:

- Master's Thesis
- Software Engineering Project
- Additional CPS courses numbered 510 and above

Courses

CPS 509. Top: Computer Sci. 1-3 Hours

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(s): Permission of department chairperson.

CPS 510. Systems Analysis. 3 Hours

SYSTEM ANALYSIS - Process-oriented, data-oriented, and object-oriented approaches for systems development; comparison of various systems development life cycles; DFD methodology for systems analysis using state-of-the-art CASE (Computer Aided Software Engineering) tools; logical and event analyses of DFD specifications; tools and techniques for modeling real-time systems; data modeling; introduction to object-oriented analysis methodologies. Prerequisite(s): CPS 350.

CPS 512. Systems Design. 3 Hours

SYSTEM DESIGN - Principles of design, introduction to software design methodologies; issues in transition from analysis to logical and physical designs; detailed discussion of structured design methodology (Yourdon, Constantine, Myers); design guidelines; transform analysis; Warnier/Orr design methodologies; designing methodologies for real-time systems; introduction to object-oriented design; CASE tools and code generators. Prerequisite(s): CPS 510.

CPS 518. Software Engineering. 3 Hours

SOFTWARE ENGINEERING - Software engineering.

CPS 520. Obj- Orient Sys Dev. 3 Hours

OBJECT-ORIENTED SYSTEMS DEVELOPMENT - Unified Modeling Language (UML), use cases, class diagrams, sequence diagrams, collaboration diagrams, state charts, activity diagrams, component and deployment views, design patterns, and implementation of various UML models through team projects. Prerequisite(s): CPS 350, CPS 510.

CPS 522. Software Proj Mgmt. 3 Hours

SOFTWARE PROJECT MANAGEMENT - Cost and effort estimation models for software projects, planning techniques, productivity metrics, risk management, maintenance, reuse, quality assurance, configuration management, Capability Maturity Models (CMM and P-CMM), and ISO 9001. Prerequisite(s): CPS 510 or CPS 518 or CPS 520.

CPS 530. Algorithm Design. 3 Hours

ALGORITHM DESIGN - The design and analysis of computer algorithms, including order notation, sorting, dynamic programming, graph algorithms, string matching, matrix multiplication, NP-completeness. Prerequisite(s): CPS 350.

CPS 536. Operating Systems I. 3 Hours

OPERATING SYSTEMS I - 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. Prerequisite(s): CPS 350.

CPS 542. Database Mgt Sys I. 3 Hours

DATABASE MANAGEMENT SYSTEMS - Physical and logical organization of data files; hierarchical, network, and relational database models; data definition language and data manipulation language of a commercial database management system; query languages. Prerequisite(s): CPS 350.

CPS 543. Comparative Languages. 3 Hours

COMPARATIVE LANGUAGES - The evolution of programming languages. Study of the concepts common to languages, constructs, organization, specification, and analysis of languages. The role of languages in software development. Prerequisite(s): CPS 350.

CPS 544. Systems Programming. 3 Hours

SYSTEMS PROGRAMMING - Analysis of compilers and their construction; programming techniques discussed in the current literature; advanced computer applications in both mathematical and nonnumeric areas. Prerequisite(s): CPS 350.

CPS 552. Discrete Event Simulation. 3 Hours

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. Prerequisite(s): CPS 350; statistics.

CPS 560. Computer Graphics. 3 Hours

COMPUTER GRAPHICS - Types of graphic hardware and their characteristics. Overview of software and techniques used in computer graphics. Two- and three-dimensional graphics displays. Prerequisite(s): CPS 350; programming ability in a procedure-oriented language.

CPS 562. Database Mgt Sys II. 3 Hours

DATABASE MANAGEMENT SYSTEMS II - Study of query execution and optimization, transaction management, concurrency control, recovery and security techniques. Advanced data models and emerging trends in database systems, like object-oriented database systems, distributed database systems, client-server architecture, multidatabase and heterogeneous systems. Other current database topics and emerging technologies will be discussed. Prerequisite(s): CPS 542.

CPS 570. Data Communications. 3 Hours

DATA COMMUNICATIONS - The study of networks of interacting computers. The analysis of distributed processing and distributed databases. Prerequisite(s): CPS 350.

CPS 572. Computer Networking. 3 Hours

COMPUTER NETWORKING A - unified view of the broad field of local area and long haul networks. A survey of the state of the art. Topics covered include networking theory, design approaches, standards, topologies and protocols. Prerequisite(s): CPS 536, CPS 570.

CPS 577. Computer Sys Design. 3 Hours

COMPUTER SYSTEM DESIGN I - 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. Prerequisite(s): CPS 250.

CPS 580. Artificial Intelligence. 3 Hours

ARTIFICIAL INTELLIGENCE - Presentation of theoretical concepts for artificial intelligence in the areas of knowledge representation and search techniques. These are examined in the context of applications for expert systems, semantic networks, and planning problems. Issues concerning functional programming and logic programming are also presented. Prerequisite(s): CPS 350.

CPS 581. Advanced Artificial Intelligence. 3 Hours

ADVANCED ARTIFICIAL INTELLIGENCE - This course continues the studies pursued in Artificial Intelligence CPS 580. It delves more deeply into certain areas such as multiple agent systems and induction, and introduces new areas, such as neural networks and planning, not covered in CPS 580. As in CPS 580, each student shall complete a final project investigating some area of research in Artificial Intelligence. The project will encompass a literature search, paper, presentation, and implementation.

CPS 582. Automata Theory. 3 Hours

AUTOMATA THEORY - Finite automata, sequential machines. Turing machines, computability, existence of self-reproducing machines. Prerequisite(s): CPS 528.

CPS 591. Special Problems. 1-3 Hours

SPECIAL RESEARCH PROBLEMS - Individual readings and research in a specialized area. May be taken for at most six semester hours. Prerequisite(s): Permission of department chairperson.

CPS 592. Special Topics. 1-3 Hours

SPECIAL TOPICS - Lectures and/or laboratory experience in some areas determined by the department. Prerequisite(s): Permission of department chairperson.

CPS 595. Software Engineering Project. 3 Hours

SOFTWARE ENGINEERING PROJECT I - First of a two-course project sequence. Students, either individually or in teams, must propose a project, conduct background research, justify the adequacy of the work for a graduate project, complete analysis and design using appropriate methodologies and CASE tools, and write preliminary coding. Students are expected to write code and minimize the usage of visual or other development environments. A minimum of three class presentations is expected for project proposal, progress, and final analysis/design. Prerequisite(s): (CPS 510, CPS 530); permission of department chairperson.

CPS 596. Software Project II. 3 Hours

SOFTWARE PROJECT II - Continuation of CPS 595. Students are required to implement the analysis and design of their projects and make periodic presentations. Special attention needs to be given to the overall architecture of the system, usability, testing, and documentation. A minimum of two class presentations is expected for design and implementation. Prerequisite(s): CPS 595.

CPS 599. Thesis. 3-6 Hours

THESIS - Thesis.

English

Sheila H. Hughes, Department Chairperson
Andrew Slade, Graduate Program Director

The English graduate program leading to the Master of Arts degree allows students to concentrate in one of the following track options:

1. English and American literature
2. Writing
3. Teaching

The program accommodates both full-time and part-time students, allows them to achieve different goals, and prepares them for a wide variety of careers. The English and American literature track serves prospective

Ph.D. students in literature and students generally seeking greater literary understanding or research skills; the writing track prepares students who go on to doctoral programs in rhetoric, composition, and writing as well as those seeking careers in professional, business, technical, or creative writing; the teaching track provides students with advanced work in the content area for teachers of English.

Assistantships

Graduate teaching assistantships are offered to qualified students in the M.A. program. The assistantship is an apprenticeship in teaching first-year composition as part of the undergraduate writing program. Assistants receive pedagogical and curricular instruction in all aspects of the writing process, preparing them to teach expository, argumentative, and researched essays. Students making satisfactory progress toward their degree may renew their contract for a second year.

Teaching assistants can also choose to work in computer-mediated environments or participate in special programs such as the Building Communities for Social Justice Cohort. Occasionally, opportunities arise for writing internships with the Department of Public Relations. Awards provide tuition remission for the 30-hour program, a stipend, and benefits. Applications for assistantships are part of the online admission form.

Master of Arts in English (eng)

Normally 30 semester hours are required. Every student both in the literary track and in the teaching track who has attained a grade point average of at least 3.00, after completing 12 hours of graduate work, will take a Diagnostic Examination. This examination will be reviewed by a faculty committee consisting of the candidate's advisor, the graduate program director, and another member of the graduate faculty or staff.

Every student in the writing track who has attained a grade point average of 3.00, after completing 12 hours of graduate work, will begin a Diagnostic Writing Assignment with the approval of the student's advisor. This assignment will ordinarily be completed during the same term in which it is approved by the advisor, and the finished assignment will be assessed by a faculty committee consisting of the advisor, the graduate program director, and a third member of the graduate faculty or staff. On the basis of the Diagnostic Examination or the completed Diagnostic Writing Assignment as well as other materials pertaining to the student's graduate performance, the evaluating committee will make recommendations to the department chair about the candidate's graduate program. Among these recommendations will be the total number of hours that the candidate needs to complete the degree. Exceptionally well-prepared students may earn the master's degree in fewer than 30 hours; students with deficiencies may be required to take up to 36 semester hours of graduate study.

ENG 601 Grad Studies in ENG is required of applicants for the degree. ENG 588 Studies in Criticism is required of each student in the literature track who has not taken a satisfactory undergraduate course in literary criticism and theory. ENG 596 Composition Theory is required of each applicant in the writing track. Students in the teaching track may select either course to fulfill their theory requirement. In addition, EDT 500 Models of Teaching and EDT 609 Iss,Trnds&Res in Rdg are required of each student in the teaching track.

All students must take at least 12 hours of 600-level courses (including ENG 601 Grad Studies in ENG and EDT 609 Iss,Trnds&Res in Rdg for teachers). Students in the teaching track are required to take two of these 600-level courses in literature or composition pedagogy (ENG 621 St:Teaching of Lit, ENG 625 St:Teach of Compostn or the equivalent).

Graduate assistants are required to take the one-credit course, ENG 590 Teaching College Eng during each year of their assistantship.

Teaching Track

The Teaching Track is one of three emphases available to students pursuing a Master of Arts in English. Implemented in 2002, the track is designed for licensed secondary teachers who wish to pursue graduate in English. It provides teachers with advanced study in English as a content area to enrich their academic lives and enhance their classroom teaching. Unlike tracks in Literature and Writing, however, the Teaching Track also includes two EDT course requirements- EDT 500 Models of Teaching and EDT 608 The Writing Classrm.

Courses

ENG 505. Creative Writing. 3 Hours

CREATIVE WRITING - Supervised practice in various literary forms. Both group discussions and individual conferences and critiques. Permission of chair required.

ENG 507. Studies-Writing. 1-6 Hours

STUDIES IN WRITING - Special topics in composition, argumentation, technical writing, report writing, and the like.

ENG 514. Medieval Literature. 3 Hours

MEDIEVAL ENGLISH LITERATURE A - study of the dominant types in the literature of England from the beginning to 1500.

ENG 538. Milton. 3 Hours

MILTON - Study of the major and minor poems and selected prose of Milton.

ENG 552. English Romanticism. 3 Hours

ENGLISH ROMANTICISM - Study of the major poets and critics of the Romantic Age.

ENG 556. Studies-19th Cent Lit. 3 Hours

STUDIES IN NINETEENTH-CENTURY LITERATURE - Study of the literature in England in the nineteenth century.

ENG 560. 20th Cntry Brtsh Lit. 3 Hours

TWENTIETH-CENTURY BRITISH LITERATURE - Consideration of significant developments in modern British literature.

ENG 580. Am Realism&Naturalism. 3 Hours

AMERICAN REALISM AND NATURALISM - Study of representative writers from the post-Civil War period in American literature.

ENG 584. ST:20th Cntry Am Lit. 3 Hours

STUDIES IN TWENTIETH-CENTURY AMERICAN LITERATURE - Study of significant developments in American literature of the twentieth century.

ENG 587. Contempoy Rhetoric. 3 Hours

CONTEMPORARY RHETORIC - An examination of one or more contemporary forms of argumentation and their application in writing.

ENG 588. Studies in Criticism. 3 Hours

STUDIES IN CRITICISM - Treatment of significant topics in theoretical and/or practical criticism.

ENG 590. Teaching College Eng. 0.5 Hours

TEACHING OF COLLEGE ENGLISH - Discussion, instruction, and practice in the methods of teaching composition and literature. Required of and open only to graduate assistants.

ENG 591. Studies-Literature. 1-6 Hours

STUDIES IN LITERATURE - An analysis of selected literary problems or areas.

ENG 592. History of English. 3 Hours

HISTORY OF ENGLISH - Study of stages in the development of the English language and of influences shaping its development from the beginning to the present time.

ENG 596. Composition Theory. 3 Hours

COMPOSITION THEORY - Study of the principal current theories of composition, with application to the teaching and evaluating of writing.

ENG 599. Thesis. 3-6 Hours

THESIS - Thesis.

ENG 601. Grad Studies in ENG. 3 Hours

INTRODUCTION TO GRADUATE STUDIES IN ENGLISH - An introduction to the field of English studies. The course provides an overview of bibliographic studies, relevant research methodologies, and current critical trends in scholarship. Required of all degree applicants.

ENG 605. Studies in an Author. 3 Hours

STUDIES IN AN AUTHOR - Consideration of the body of an author's work and its relationship to the life of the author.

ENG 609. Studies-Genre or Mod. 3 Hours

STUDIES IN A GENRE OR MODE - An intensive analysis of a significant literary form or mode.

ENG 621. St:Teaching of Lit. 3 Hours

STUDIES IN THE TEACHING OF LITERATURE - An exploration of ways to teach literature more effectively for particular students.

ENG 624. Tchg ENG in HS&Coll. 3 Hours

TEACHING WRITING IN HIGH SCHOOL AND COLLEGE - This course introduces students to the pedagogical methods and relevant research which informs contemporary writing instruction at the secondary and post-secondary level. Required of all teaching assistants.

ENG 625. St:Teach of Composn. 3 Hours

STUDIES IN THE TEACHINGS OF COMPOSITION - An exploration of ways to teach writing more effectively for particular groups of students.

ENG 627. Professional Writing. 1-3 Hours

PROFESSIONAL WRITING - Analysis of and practice in professional writing in different contexts, for example, proposal writing, evaluative report writing, and editing skills.

Geology

Dan Goldman, Department Chairperson
Shuang-Ye Wu, Graduate Program Director

GIS Certificate Program Core Curriculum (gis)

The GIS certificate program contains four courses at its core:

GEO 550	Applied GIS	4
GEO 555	Environmtl Remote Sensing	4
GEO 560	Adv Appl of GIS	3
GEO 598	Capstone Project	3
Total Hours		14

Students may take 1 or 2 other courses relating to distinctive areas of concentration that they may choose. These courses can be existing UD courses that provide additional background knowledge to GIS usage, or GIS-specific courses that can be developed later with collaboration from other departments.

Courses

GEO 550. Applied GIS. 4 Hours

APPLIED GEOGRAPHIC INFORMATION SYSTEMS - This course covers the fundamentals of Geographic Information Systems (GIS) technology and how it is being applied in such diverse fields as physical sciences, social/political sciences, planning, marketing, health, criminal justice, natural resources, and engineering. Students will learn the processes to collect, organize, analyze and display geographic data obtained from sources such as address geocoding, GPS, CD-ROM and World Wide Web sites. However, the emphasis of the course will be on data preparation and visualization based on sound knowledge of basic principles of cartographic design. Some preliminary data analysis techniques will be introduced but it is not an emphasis of the course. Each student will complete a series of mini projects that illustrate the typical steps in a GIS project. Major topics include: representation of geography, coordinate systems and map projections, principles of basic cartography, thematic mapping, data acquisition using GPS, geocoding, basic editing, and basic data management and exploration.

GEO 555. Environmtl Remote Sensing. 4 Hours

ENVIRONMENTAL REMOTE SENSING - Introduction to principles and concepts of Remote Sensing, a sophisticated technology of earth observation that provides fundamental data for global environmental investigation. Prerequisite(s): GEO 307 or Permission.

GEO 560. Adv Appl of GIS. 3 Hours

ADVANCED APPLICATIONS OF GEOGRAPHICAL INFORMATION SYSTEMS - Building upon GEO 450 / GEO 550, this course aims to broaden students' understanding of GIS theories and emphasize advanced spatial analysis, modeling and visualization methodologies. Based on an applied approach, this course will use a variety of projects to illustrate these techniques. Prerequisite(s): GEO 450 / GEO 550 Applied GIS.

GEO 585. GIS App-Watr Resources. 4 Hours

GEOGRAPHIC INFORMATION SYSTEMS APPLICATIONS IN WATER RESOURCE PLANNING AND MANAGEMENT - This course introduces GIS applications in water resource management. Following an introduction to raster-based modeling in GIS, it will focus on GIS techniques in surface water modeling and floodplain delineation and management.

GEO 598. Capstone Project. 3 Hours

CAPSTONE PROJECT - This capstone course aims to integrate concepts and capabilities developed in previous courses (GEO 450 / GEO 550 and GEO 560) and to apply them in a realistic setting relevant to individual student interests. The course seeks to refine skills in project implementation using GIS, emphasizing project development, organization and management, presentation technique, and the use of modern information-acquisition and processing technology in GIS and/or Remote Sensing. Prerequisite(s): GEO 450 / GEO 550 Applied GIS; GEO 560 Advanced GIS.

Mathematics

- Master of Science, Applied Mathematics
- Master of Financial Mathematics
- Master of Mathematics Education

Joe Mashburn, Department Chairperson
Paul Eloe, MAS and MFM Program Director
Rebecca J. Krakowski, MME Program Director

The Department of Mathematics offers three masters degrees, the Master of Science in Applied Mathematics (MAS), the Master of Financial Mathematics (MFM) and the Master of Mathematics Education (MME).

Applied Mathematics (MAS)

The MAS program is interdisciplinary in nature. A plan of study may include up to a four-course concentration in computer science, engineering, or business for students with appropriate backgrounds. The primary objective of the program in applied mathematics is to train students to do professional work in the applications of mathematics. The program provides a background in mathematical, numerical, and statistical analyses and students will gain valuable experience in modeling and computation. Students will have the opportunity to work on a semester or year-long project known as the Mathematics Clinic project.

The program strives to offer an individualized plan of study that meets the needs and career goals of the student. This is achieved by offering a core of courses blending analysis, linear algebra, modeling, and numerical analysis in the Department of Mathematics. The student, with departmental approval, will select a four-course concentration. The Mathematics Clinic project, the capstone requirement, is a research project in which the student applies mathematical, numerical, or statistical modeling methods to a problem related to the student's four-course concentration. The Mathematics Clinic project can be a team project and can involve faculty members from several departments.

An individualized degree program consists of courses satisfying the five core areas, an area of concentration, and electives. The program is approved by the student's committee and program director, and is intended to satisfy the specific needs and interests of the individual. Any core course that is already part of the student's academic background may be replaced with an elective consistent with the other requirements of the program.

To satisfy the requirement of an area of concentration, a student will be required to take 12 semester hours of 500-level coursework in the selected area of concentration. Examples of areas of concentration include (but are not limited to):

Differential Systems

Course List

MTH 531	Adv Difrntl Equatns	3
MTH 535	Partial Diff Equatns	3
Six additional hours of mathematics courses approved by the committee		6
Total Hours		12

Engineering Systems

Course List

EGM 503	Intr Continuum Mechn	3
EGM 533	Theory of Elasticity	3
Six additional hours of engineering courses (of a mathematical nature) approved by the committee		6
Total Hours		12

Computational Systems

Course List

MTH 555	Numerical Analysis	3
MTH 556	Numerical Analysis	3
Six additional hours of computer science courses approved by the committee		6
Total Hours		12

Financial Mathematics (FIM)

The MFM is a professional program in quantitative methods in finance to support a growing local and regional market in financial services. It is offered in cooperation with the Department of Economics and Finance. The program integrates statistics, computation and modeling with training in the professional domain and graduates will find employment opportunities in the banking, insurance and financial trading industries. A plan of study includes six core courses that include coursework in the MBA program, and four electives courses, selected, in consultation with a faculty advisor, from a broad set of electives from Mathematics, MBA, Management Science and Computer Science. There are two introductory courses, one in partial differential equations and one in principles of finance; one or both of these courses can be waived for students with appropriate background in mathematics or finance.

As with the MAS program, the MFM program requires a capstone experience of a Mathematics Clinic project. Teams of students will report to a faculty member and work on a project that is posed by the financial industry.

Mathematics Education (MME)

The MME program has been developed to meet the professional needs of high school mathematics teachers. Ohio Department of Education licensure guidelines now require that all K-12 grade teachers complete a master's degree program in their content area or general education in order to maintain a provisional teaching license for a second renewal. The Department of Mathematics has created the MME to meet this requirement, and has been designed to address issues that are especially important to high school mathematics educators.

Key features of the MME include: curriculum that focuses on pedagogical content knowledge - the special knowledge that distinguishes the mathematics knowledge of teachers from that of mathematicians; student development of a stronger mathematics content knowledge, as well as the ability and opportunity to apply this knowledge to the 9-12 grade curriculum; introduction to major research issues and both quantitative and qualitative methods in mathematics education; students' continued growth as leaders in education; an emphasis on the latest technological

advances - both computer-based and using hand-held graphing utilities; students will consistently experience "best practices" as modeled by program faculty whose area of expertise is mathematics education.

This is primarily a summer program that offers a solid base in the teaching of secondary school mathematics. The curriculum includes both mathematics and education coursework consisting of 10 classes, three graduate semester credit hours each, that may be completed over the course of three summers, with minimal requirements during the regular school year.

As is the case with other graduate programs within the Department of Mathematics, the MME program requires a capstone experience of a Mathematics Clinic project. Each student will work with a faculty member to design and implement an action research project in mathematics education. A "journal ready" report will be required, as well as a presentation of their findings in one of our departmental colloquia.

Certificate Programs

Certificate programs appeal to students who do not want to commit to the full MFM program. Upon successful completion of five courses focused on a specific set of concepts, a student will earn a post-baccalaureate certificate in that area. The certificate programs and the associated five courses are:

Certificate in Computational Finance

Course List

MTH 556	Numerical Analysis	3
MTH 563/MBA 623	Computational Finance	3
MTH 558	Financial Math I	3
MTH 559	Financial Math II	3
MBA 621	Fin Deriva&Risk Mgt	3
Total Hours		15

Certificate in Statistical Finance

Course List

MTH 543	Linear Models	3
or ENM 501	Appl Engr Statistics	
MTH 544	Time Series	3
or ENM 530	Engineering Economy	
MTH 563/MBA 623	Computational Finance	3
MTH 558	Financial Math I	3
MTH 559	Financial Math II	3
Total Hours		15

Certificate in Financial Risk Management

Course List

MBA 621	Fin Deriva&Risk Mgt	3
MBA 628	Fixd Income Analysis	3
MTH 558	Financial Math I	3
MTH 559	Financial Math II	3
MTH 563/MBA 623	Computational Finance	3
Total Hours		15

The certificate programs are designed as mini-programs in focus areas. Thus, each includes the capstone applied research experience of Mathematics Clinic.

Entrance, performance, and exit standards

Students seeking admission to the Certificate Programs will satisfy the entrance requirements to the MFM program. These are:

- Completion of a graduate application for admission to a certificate program at the University of Dayton
- Bachelor's degree in a science or technical area such as mathematics, physics, computer science, engineering, economics, or finance, and at least a 3.0 GPA on a 4.0 scale
- Prerequisite mathematics coursework in calculus, differential equations, linear algebra, elementary probability, and statistics
- Programming skills

Students applying for a Certificate must be enrolled in the Certificate program and must have completed the requirement of five courses with a minimum G.P.A. of 3.0.

Students cannot simultaneously be admitted to the Master of Financial Mathematics and one of the certificate programs. Students can be simultaneously enrolled in any other post-baccalaureate program at the University of Dayton and a certificate program. Students must meet the entrance standards of the Master of Financial Mathematics to gain admission to a certificate program. To learn more about the application process for admission to a certificate program, please contact the Department of Mathematics.

Assistantships

Financial assistance is available to qualified students through graduate teaching assistantships. A graduate assistant receives a stipend, tuition remission, and health benefits. Most graduate assistants require two years to complete the requirements for a master's degree. Internships in the MFM program are recommended and the Department facilitates finding internship opportunities.

Facilities

Departmental PCs and the MATHSCI Computer Learning Environment are available for student use in conjunction with projects or coursework.

Master of Financial Mathematics (fim)

Course List

MBA 620	Financial Anlys&Mark *	3
MTH 535	Partial Diff Equatns **	3
MTH 541	Mathematics Clinic	3
MTH 544	Time Series	3
MTH 556	Numerical Analysis	3
MTH 558	Financial Math I	3
MTH 559	Financial Math II	3
MBA 621	Fin Deriva&Risk Mgt	3
or MTH 557	Fincl Drvtvs&Rsk Mgt	
MBA 623	Computational Finance	3
or MTH 563	Computational Finance	
Select four courses: ***		12
CPS 542	Database Mgt Sys I	
CPS 562	Database Mgt Sys II	
MBA 625	Investmnt&Fin Markts	

MBA 628	Fixd Income Analysis	
MTH 531	Adv Diffrentl Equatns	
MTH 532	Difference Equations	
MTH 543	Linear Models	
MTH 547	Stat for Exprimntrs	
MTH 551	Methods Mathmtl Phys	
MTH 552	Meth of Applied Math	
MTH 565	Linear Algebra	
MTH 583	Fourier Analysis	
Total Hours		39

Footnotes

- * This is a required introductory finance-related course. It can be replaced for students with sufficient background.
- ** This is a required introductory mathematics course. It can be replaced with an appropriate elective for students with sufficient background.
- *** ECO 441 and FIN 480 can be taken for graduate credit.

Master of Mathematics Education (mme)

Course List

EDT 500	Models of Teaching	3
EDT 502	Philosphcl Study-Edu	3
EDT 650	Prf Dev-Teach Ldrs	3
MTH 512	Geom for Sec Tchrs	3
MTH 513	Alg for SecTeachers	3
MTH 514	Adv Math Sec Tchrs	3
MTH 515	Gphs&com - Soc Tchrs	3
MTH 516	Ap Lin Abs Alg Sc Tr	3
MTH 517	Res Meth in Mth Ed	3
MTH 541	Mathematics Clinic	3
Total Hours		30

Master of Science in Applied Mathematics (mas)

Course List

MTH 404	Complex Variables	3
or MTH 525	Complex Variables I	
MTH 430	Real Analysis	3
MTH 531	Adv Diffrentl Equatns	3
or MTH 535	Partial Diff Equatns	
MTH 541	Mathematics Clinic	3
MTH 555	Numerical Analysis	3
or MTH 556	Numerical Analysis	
MTH 565	Linear Algebra	3
Select five of the following: *		15
MTH 519	Statistical Infer	
MTH 520	Statistical Infer	
MTH 521	Real Variables	
MTH 522	Real Variables	
MTH 525	Complex Variables I	
MTH 526	Complex Variables II	
MTH 532	Difference Equations	
MTH 540	Mathematicl Modelng	

MTH 541	Mathematics Clinic	
MTH 543	Linear Models	
MTH 545	Special Functions	
MTH 547	Stat for Exprimntrs	
MTH 551	Methods Mathmtl Phys	
MTH 552	Meth of Applied Math	
MTH 561	Modern Algebra I	
MTH 562	Modern Algebra II	
MTH 565	Linear Algebra	
MTH 571	Topology I	
MTH 572	Topology II	
MTH 573	Functional Analysis	
MTH 575	Differential Geomtry	
MTH 582	Vector&Tensor Anly	
MTH 583	Fourier Analysis	
MTH 590	Topics In Math	
Total Hours		33

Footnotes

- * At most, 6 hours of approved 400-level courses may be part of the student's program.

Courses

MTH 512. Geom for Sec Tchrs. 3 Hours

GEOMETRY FOR SECONDARY TEACHERS - Investigation of traditional secondary school topics in Euclidean geometry, introduction to similar ideas in non-Euclidean spaces, examination of the impact of mathematics education research on the teaching and learning of geometry, and exploration of real-world applications. Extensive use of the dynamic software package The Geometer's Sketchpad[®] will also be incorporated into every aspect of the course. Topics to be explored may include transformations, symmetry, tessellations, centers of triangles (incenter, centroid, orthocenter, and circumcenter), similarity, coordinate geometry, and spherical or hyperbolic geometry. Prerequisite(s): MTH 370 or permission of instructor.

MTH 513. Alg for SecTeachers. 3 Hours

ALGEBRA FOR SECONDARY TEACHERS - Investigation of traditional secondary school topics from introductory and advanced algebra courses, examination of appropriate use of manipulatives (e.g., algebra tiles) to explore algebraic concepts, integration of hand-held graphing technology and data collection devices in the study of algebra, and implications of research in mathematics education on the teaching and learning of algebra. Topics discussed in the course may include basic properties and mechanics of equations and functions, functions that model real-world phenomena, models for factoring polynomial expressions, and integration of physical science and mathematics. Prerequisite(s): Permission of instructor.

MTH 514. Adv Math Sec Tchrs. 3 Hours

ADVANCED MATHEMATICS FOR SECONDARY TEACHERS - Investigation of concepts related to trigonometry, analytic geometry, precalculus, and calculus; integration of appropriate uses of graphing technology and data collection devices to enhance students' understanding in their investigation of real-world examples; and implications of research in mathematics education on the teaching and learning of the concepts discussed in this course. A variety of topics that may be explored include: trigonometric functions and applications; rate of change in business, physics, and society; limits, continuity, and differentiability; and applications of area and volume. Prerequisite(s): MTH 218 or permission of instructor.

MTH 515. Gphs&com - Soc Tchrs. 3 Hours

APPLICATIONS OF GRAPH THEORY AND COMBINATORICS IN MODERN MATHEMATICS - An opportunity to study selected topics in graph theory and combinatorics in depth. Appropriate uses of computing technology will be included. Topics may include an introduction to circuits and graph coloring theorems, traveling salesperson problems, and sorting algorithms, problems, and methods in counting, networks, and finding winning strategies for Nim-type games. Prerequisite(s): (MTH 367 or MTH 411) or permission of instructor.

MTH 516. Ap Lin Abs Alg Sc Tr. 3 Hours

APPLICATIONS OF LINEAR & ABSTRACT ALGEBRA IN MODERN EDUCATION - Study of topics connected to real-world applications in both linear and abstract algebra, and an introduction to matrix operations with EXCEL and TI graphing technology. Topics discussed may include: introductory coding theory and cryptography; symmetry groups in mathematics, science, engineering, architecture, and art; permutation groups; linear programming problems and the simplex method; and Markov chains. Prerequisite(s): (MTH 302, MTH 361) or permission of instructor.

MTH 517. Res Meth in Mth Ed. 3 Hours

RESEARCH METHODS AND ISSUES IN MATHEMATICS EDUCATION - Review of related literature and research in education and mathematics education, and a study of key concepts necessary to analyze, evaluate, and conduct educational research. Application of both qualitative and quantitative research methods specifically related to the development of a research proposal. The focus on quantitative research methods provides ample opportunities to review fundamental concepts and properties of both descriptive and inferential statistics. Introduction to SAS or SPSS, both statistical programming packages appropriate for use in educational research, will be included in the course. Prerequisite(s): (MTH 367 or MTH 412) or permission of instructor.

MTH 519. Statistical Infer. 3 Hours

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.

MTH 520. Statistical Infer. 3 Hours

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.

MTH 521. Real Variables. 3 Hours

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.

MTH 522. Real Variables. 3 Hours

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.

MTH 525. Complex Variables I. 3 Hours

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

MTH 526. Complex Variables II. 3 Hours

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

MTH 527. Biostatistics. 3 Hours

BIostatISTICS - Introduction to statistical concepts and skills including probability theory and estimation, hypothesis tests of means and proportions for one or two samples using normal or t-distributions, regression and correlation, one- and two-way ANOVA, selected nonparametric tests. Prerequisite(s): MTH 149 or MTH 169 or permission of instructor.

MTH 531. Adv Diffrentl Equatns. 3 Hours

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

MTH 532. Difference Equations. 3 Hours

DIFFERENCE EQUATIONS AND APPLICATIONS - The calculus of finite differences, first order equations, linear equations and systems, z-transform, stability, boundary value problems for nonlinear equations, Green's function, control theory and applications.

MTH 535. Partial Diff Equatns. 3 Hours

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

MTH 540. Mathematicl Modelng. 3 Hours

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(s): Permission of instructor.

MTH 541. Mathematics Clinic. 3 Hours

MATHEMATICS CLINIC - Student teams will be responsible for developing or modifying and testing 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(s): Permission of department chairperson or program director.

MTH 543. Linear Models. 3 Hours

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(s): MTH 368 or equivalent.

MTH 544. Time Series. 3 Hours

TIME SERIES - Estimation and elimination of trend and seasonal components; stationary time series, autocovariance, autocorrelation and partial autocorrelation functions; spectral analysis; modeling and forecasting with ARMA processes; nonstationary and seasonal time series. Prerequisite(s): Courses in single and multivariate calculus; courses in statistics and probability; courses in linear algebra.

MTH 545. Special Functions. 3 Hours

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(s): MTH 403 or equivalent.

MTH 547. Stat for Exprimntrs. 3 Hours

STATISTICS FOR EXPERIMENTERS - Covers those areas of design of experiments and analysis of quantitative data that are useful to anyone engaged in experimental work. Designed experiments using replication and blocking. Use of transformations. Applications of full and fractional factorial designs. Experimental design for developing quality into products using Taguchi methods. Prerequisite(s): MTH 367 or equivalent.

MTH 551. Methods Mathmtl Phys. 3 Hours

METHODS OF MATHEMATICAL PHYSICS - Linear transformations and matrix theory, linear integral equations, calculus of variations, eigenvalue problems. Prerequisite(s): MTH 403 or equivalent.

MTH 552. Meth of Applied Math. 3 Hours

METHODS OF APPLIED MATHEMATICS - Dimensional analysis and scaling, regular and singular perturbation methods with boundary layer analysis, the stability and bifurcation of equilibrium solutions, other asymptotic methods. Prerequisite(s): MTH 403 or equivalent.

MTH 555. Numerical Analysis. 3 Hours

NUMERICAL ANALYSIS I - Solutions of nonlinear equations, Newton's methods, fixed point methods, solutions of linear equations, LU decomposition, iterative improvement, QR decomposition, SV decomposition. Prerequisite(s): (CPS 132 or CPS 150) or equivalent; MTH 302 or equivalent.

MTH 556. Numerical Analysis. 3 Hours

NUMERICAL ANALYSIS II - Interpolating functions, numerical differentiation, numerical integration including Gaussian quadrature, numerical solutions of differential equations. Prerequisite(s): (CPS 132 or CPS 150) or equivalent; MTH 219 or equivalent.

MTH 557. Fincl Drvtvs&Rsk Mgt. 3 Hours

FINANCIAL DERIVATIVES AND RISK MANAGEMENT - This course provides a theoretical foundation for the pricing of contingent claims and for designing risk-management strategies. It covers option pricing models, hedging techniques, and trading strategies. It also includes portfolio insurance, value-at-risk measure, multistep binomial trees to value American options, interest rate options, and other exotic options. Prerequisite(s): MBA 620.

MTH 558. Financial Math I. 3 Hours

FINANCIAL MATHEMATICS I, DISCRETE MODEL - Discrete methods in financial mathematics. Topics include introduction to financial derivatives, discrete probability theory, discrete stochastic processes (Markov chain, random walk, and Martingale), binomial tree models for derivative pricing and computational methods (European and American options), forward and futures, and interest rate derivatives. Prerequisite(s): MTH 411 or equivalent.

MTH 559. Financial Math II. 3 Hours

FINANCIAL MATHEMATICS II, CONTINUOUS MODEL - Continuous methods in financial mathematics. Topics include review of continuous probability theory, Ito's Lemma, the Black-Scholes partial differential equation, option pricing via partial differential equations, analysis of exotic options, local and stochastic volatility models, American options, fixed income and stopping time. Computational methods are introduced. Prerequisite(s): MTH 558.

MTH 561. Modern Algebra I. 3 Hours

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.

MTH 562. Modern Algebra II. 3 Hours

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(s): MTH 561.

MTH 563. Computational Finance. 3 Hours

COMPUTATIONAL FINANCE - The purpose of this course is to introduce students to numerical methods and various financial problems that include portfolio optimization and derivatives valuation that can be tackled by numerical methods. Students will learn the basics of numerical analysis, optimization methods, monte carlo simulations and finite difference methods for solving PDEs. Prerequisite(s): MBA 620 or permission of instructor.

MTH 565. Linear Algebra. 3 Hours

LINEAR ALGEBRA - Vector spaces, linear transformations and matrices; determinants, inner product spaces, invariant direct-sum decomposition and the Jordan canonical form.

MTH 567. Comb Dsgn Theory. 3 Hours

COMBINED DESIGNS THEORY - Latin squares, mutually orthogonal Latin squares, orthogonal and perpendicular arrays, Steiner triple systems, block designs, difference sets and finite geometries. Prerequisite(s): MTH 308 or instructor's permission.

MTH 571. Topology I. 3 Hours

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.

MTH 572. Topology II. 3 Hours

TOPOLOGY II - Compactification theory, para-compactness and metrization theorems, uniform spaces, function spaces, and other advanced topics of current interest. Prerequisite(s): MTH 571 or equivalent.

MTH 573. Functional Analysis. 3 Hours

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.

MTH 575. Differential Geomtry. 3 Hours

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.

MTH 582. Vector&Tensor Anly. 3 Hours

VECTOR AND TENSOR ANALYSIS - The differential and integral calculus of scalar and vector fields with emphasis on properties invariant under transformations to curvilinear coordinate systems. An introduction to tensor analysis via Cartesian tensors and then more general tensors. Derivation of the divergence, gradient, and curl in generalized coordinates. Prerequisite(s): (MTH 218, MTH 302) or equivalent.

MTH 583. Fourier Analysis. 3 Hours

DISCRETE AND CONTINUOUS FOURIER ANALYSIS - Fourier representations of complex-valued functions, rules for finding Fourier transforms, mathematical operators associated with Fourier analysis, fast algorithms, wavelet analysis, selected applications. Prerequisite(s): (MTH 219 or MTH 319) or equivalent; MTH 302 or equivalent.

MTH 590. Topics In Math. 1-6 Hours

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(s): Permission of advisor.

Music

Sharon Gratto, Department Chairperson
Linda A. Hartley, Music Education Coordinator

The Department of Music offers courses in support of the Master of Science in education degree with a music education concentration. For specific degree requirements visit the Department of Teacher Education in Academic Information. The Department of Music is a member of the National Association of Schools of Music, which accredits its degree programs and curricula.

Courses

MUS 501. Grad Sem in Musiclgy. 2 Hours

GRADUATE SEMINAR IN MUSICOLOGY - Students will become familiar with selected general aspects of Western music: music notation, editions and performance, social contexts and meanings of musical works. This course explores the range of approaches and research methods in musicology, aiming for a comprehensive understanding and a critical knowledge of the sources and literature of music and musicology, and the rudiments of research and writing techniques.

MUS 503. Teaching World Music. 2 Hours

TEACHING WORLD MUSIC - Methods and techniques for teaching music from representative cultures around the world, and their role and function in society.

MUS 505. Teach Music w/Tech I. 2 Hours

TEACHING MUSIC WITH TECHNOLOGY I - Provides a hands-on, introductory basis in 1) computer aided notation, 2) recording music with digital instruments, 3) developing multimedia presentations, and 4) utilizing the world wide web for connected learning.

MUS 506. Teach Music w/Technology II. 2 Hours

TEACHING MUSIC WITH TECHNOLOGY II - Provides an in-depth and hands-on study in 1) computer aided notation, 2) recording music with digital instruments, 3) developing multimedia presentations, and 4) utilizing the world wide web for connected learning. Permission of the instructor required.

MUS 511. Music Theory. 2 Hours

MUSIC THEORY - This course will investigate music theory and compositional practice of the Western music tradition. Current techniques of tonal theory including linear analysis will be explored. Students will also apply music technology in the notation and analysis of music. Prior experience with music notation and web authoring software is expected.

MUS 531. Current Issues Mus. 2 Hours

FOUNDATIONS & CURRENT ISSUES IN MUSIC EDUCATION - Topics include history, philosophy, and psychology of music education; special needs and inclusion; assessment; national and state music education standards; gifted identification; curriculum development; scheduling; Vision 2020; and learning theories.

MUS 535. Lit/Resrc for Classrm Music. 1 Hour

LITERATURE & RESOURCES FOR CLASSROOM MUSIC - Review, analysis and critique of standard and new literature for grades PreK - 8. Exploration and utilization of available teaching resources.

MUS 536. Lit Res Choral Music. 1 Hour

LITERATURE & RESOURCES FOR THE CHORAL ENSEMBLE - Review, analysis and critique of standard and new literature for elementary, middle, and high school choral ensembles.

MUS 537. Lit & Res Instr Ens. 1 Hour

LITERATURE & RESOURCES FOR THE INSTRUMENTAL ENSEMBLE - Review, analysis and critique of standard and new literature for elementary, middle, and high school instrumental ensembles.

MUS 544. Adv. Tech. for Classrm Music. 2 Hours

ADVANCED TECHNIQUES FOR CLASSROOM MUSIC - Focuses on the development of teaching techniques and methods for grade levels PreK-8. Concentration on areas such as contemporary methodologies, learning theories, and utilization of the National Standards in music education.

MUS 545. Adv Choral Cond. 2 Hours

ADVANCED CHORAL CONDUCTING AND REHEARSAL TECHNIQUES - Focuses on score study, comprehensive score analysis, performance practice study, ensemble conducting experience, and rehearsal techniques.

MUS 546. Adv Instr Cond. 2 Hours

ADVANCED INSTRUMENTAL CONDUCTING AND REHEARSAL TECHNIQUES - Focuses on score study, comprehensive score analysis, performance practice study, ensemble conducting experience, and rehearsal techniques.

MUS 560. Special Studies-MUS. 1-4 Hours

SPECIAL STUDIES - Special studies in Music.

MUS 581. Improv School Mus. 2 Hours

IMPROVISON IN THE SCHOOL MUSIC CURRICULUM - Emphasis on vocal and instrumental skill development and facilitation of improvisatory experiences suitable for individual students and groups.

MUS 599. Grad Perf Studies. 1-2 Hours

GRADUATE PERFORMANCE STUDIES - Private lesson instruction, or performance in an approved ensemble (large group or chamber). Lessons (14, 30 minutes each or equivalent) offered in keyboard, strings, winds, percussion, and voice. Ensembles can include university ensembles as well as off-campus ensembles (must have approval of advisor). Fee for lessons.

Philosophy

William M. Richards, Department Chairperson

* There is no graduate program in philosophy at this time. Graduate courses offered support other graduate programs.

Courses

PHL 695. Directed Studies. 3 Hours

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 department chair.

Physics

Rex Berney, Department Chairperson
Andrew Chong, Graduate Program Director

The Department of Physics, as part of the electro-optics program, offers graduate courses in support of the Master of Science and Doctor of Philosophy in electro-optics. For more details on the program requirements, see electro-optics (EOP) in Academic Information.

Assistantships

A limited number of graduate assistantships are available for graduate students in the electro-optics program. These generally carry a stipend and tuition remission for the courses required for the degree. Recipients are expected to complete the requirements for the Master's degree in two years. Detailed information and application forms may be obtained from the chair of the physics department or the director of the electro-optics program.

Courses

PHY 520. Solid State Physics. 3 Hours

SOLID STATE PHYSICS - Solid State Physics.

PHY 525. Quantum Mechanics I. 3 Hours

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.

PHY 599. Intro to Lasers. 1-3 Hours

INTRO 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.

Political Science

- Master of Public Administration
- Accelerated BA+MPA Program

Jason Pierce, Department Chairperson
Grant W. Neeley, MPA Program Director

The Department of Political Science offers one graduate degree, the Master of Public Administration. The Master of Public Administration is a professional degree designed to prepare students for administrative careers in contemporary society.

Assistantships

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

Master of Public Administration (pad)

To receive the Master of Public Administration degree, the student must satisfactorily complete 39 semester hours of coursework with a cumulative grade point average of 3.0 or better.

The 39 hours of coursework must include:

MPA 500	Public Administratn	3
MPA 510	Quant Mth-Public Adm	3
MPA 511	Applied Res Techs	3
MPA 520	Organiztn Theory	3
MPA 530	Fiscal Administn	3
MPA 540	Pub Sctr Hum Res Mgt	3

The required courses may be waived for students with appropriate academic backgrounds.

The remainder of the 39 hours must consist of courses selected from the MPA curriculum. Exceptions may be made, on the determination of the program director, if the students career objectives make public management-related courses in other graduate programs particularly useful. No more than 6 semester hours outside the MPA curriculum may be taken.

Within the general requirements listed above, the student may select one of three options:

1. The student may take 33 to 36 semester hours of academic coursework and three to six semester hours of MPA 595 Governmnt Internshp. A student choosing this option is encouraged to begin the internship only after completing 18 semester hours of other courses. The internship is required of pre-career students.
2. The student, under certain conditions, may take 33 to 36 semester hours of academic coursework and three to six semester hours of MPA 597 Public Serv Project. This option is available only to students employed in administrative positions other than internships in public or nonprofit agencies. Students should enroll in MPA 597 only after completing 18 hours of other courses.

3. The student may take the full 39 semester hours in regular academic courses.

Accelerated BA+MPA Program

UD undergraduate students within the College of Arts and Sciences with a cumulative GPA of 3.0 or better at the time of application are eligible to participate in the accelerated BA+MPA program leading to a Master of Public Administration degree.

Eligible undergraduate students are required to apply for admission to the accelerated BA+MPA program and to the Graduate School and may do so as early as the second semester of their junior year. At least 75% of the credit hours required for graduation within the student's undergraduate degree program must be completed before graduate admission can be approved.

Applicants who meet the admission requirements (see 1. above) will be conditionally admitted into the MPA degree program and permitted to enroll in graduate courses approved by both the student's undergraduate department and the MPA program.

Although the students in the accelerated BA+MPA program can take several approved graduate courses while enrolled as undergraduates, only two courses (a maximum of six semester hours) may be counted towards both the BA and MPA degrees. These two courses must be explicitly approved in writing by both the student's undergraduate department and the MPA program before they are taken.

Students admitted to the accelerated program will continue to be classified as undergraduate students until they complete all undergraduate degree requirements. These students need to take 12 or more semester hours per term to maintain full-time status, and will be charged the standard tuition and fee rates applicable to undergraduate students. Graduate courses taken for undergraduate credits will be assessed at the standard undergraduate tuition and fee rate. Under no circumstances will a student be charged tuition and fees in excess of the listed full-time tuition and fees amount (unless increased for overload hours as applicable). Upon successful completion of their undergraduate requirements, students will receive their BA degree.

At the completion of the undergraduate requirements, the accelerated program students may apply for admission into the Graduate School with regular status, after submission of all required admission materials and review by the MPA admission committee. Graduate students within the MPA program need to take a minimum of six semester hours per term to maintain status as full-time students.

Master's degree students are required to maintain a minimum cumulative grade point average of a B (3.0) in all graduate-level coursework, with no more than six semester hours of C. Students who fail to meet these standards are placed on academic probation or dismissed from the program.

The Master of Public Administration will be conferred upon successful completion of all appropriate graduate degree requirements.

Public Administration*

MPA 500	Public Administratn	3
MPA 510	Quant Mth-Public Adm	3
MPA 511	Applied Res Techs	3
MPA 520	Organiztn Theory	3
MPA 530	Fiscal Administn	3
MPA 540	Pub Sctr Hum Res Mgt	3

Seven MPA electives selected from the curriculum areas below **	21
Total Hours	39

MPA Curriculum

General Administration and Management

MPA 500	Public Administratn	3
MPA 502	Intergovrnmt Reltn	3
MPA 504	State&Local Govrmt	3
MPA 506	Urban Administration	3
MPA 508	Contmp Iss-Pub Mgt	3

Analytic Tools

MPA 510	Quant Mth-Public Adm	3
MPA 511	Applied Res Techs	3
MPA 512	Comtr Appl For MPA	3
MPA 514	Government Planning	3

Group and Organization Dynamics

COM 517	Organizational Comm	3
COM 537	Conflict Management	3
MPA 520	Organiztn Theory	3
MPA 524	Ethics-Public Adm	3
MPA 526	Ldrshp Bldg Comm	3

Fiscal Management

MPA 530	Fiscal Administn	3
MPA 532	Govt Fund Mgt&Reprt	3

Human Resources

MPA 540	Pub Sctr Hum Res Mgt	3
MPA 542	Pub Sec Lbr Mgt Rel	3

Policy Studies

MPA 551	Intro-Public Policy	3
MPA 555	Sel Top-Pub Policy	3

The Non-Profit Sector

MPA 561	Intro-Nonprofit Org	3
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Public Law/Bureaucracy

MPA 571	Administrative Law	3
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Topical Seminars/Independent Study

MPA 591	Sem in Public adm	3
MPA 593	Indp Sty-Public Adm	1-6
MPA 595	Govrnmt Internshp	1-6
MPA 597	Public Serv Project	3-6

Footnotes

* The required courses may be waived for students with appropriate academic backgrounds.

** Exceptions may be made, on the determination of the program director, if the student's career objectives make public management-related courses in other graduate programs particularly useful. No more than six semester hours outside the MPA curriculum may be taken.

Courses

MPA 500. Public Administratn. 3 Hours

PUBLIC ADMINISTRATION - Study of administrative organization, systems, processes and methods as applied to government programs and operations, with a comparison of structural and behavioral approaches.

MPA 504. State&Local Govrmt. 3 Hours

STATE AND LOCAL GOVERNMENT - An in-depth examination of particular state-local institutional relationships with emphasis upon current issues.

MPA 508. Contmp Iss-Pub Mgt. 3 Hours

URBAN ADMINISTRATION - An in-depth examination of a current management issue supported by recent literature in public administration and relevant to surrounding local governments. Analysis of root causes of the problem issue. Exploration of management approaches available to local governments. May be repeated once when course focus changes.

MPA 510. Quant Mth-Public Adm. 3 Hours

QUANTITATIVE METHODS IN PUBLIC ADMINISTRATION - 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 understanding appropriate application and interpretation of quantitative methods rather than competence in practical or scholarly use.

MPA 511. Applied Res Techs. 3 Hours

APPLIED RESEARCH TECHNIQUES - Introduction to statistical computing techniques, review of research design and inferential statistics, Ordinary Least Square techniques, violations of assumptions, multi-level modeling, and other topics. Prerequisite(s): MPA 510.

MPA 513. Geo Info Sys. 3 Hours

GEOGRAPHIC INFORMATION SYSTEMS FOR PUBLIC ADMINISTRATION - Concepts and implementation of project design and analysis in geographic information systems (GIS). Students will learn the practice of GIS as a tool for spatial analysis, and as it applies in public administration. The course will stress database design and present skills for data input, query analysis, and data output using GIS.

MPA 514. Government Planning. 3 Hours

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 planning characteristics in the United States.

MPA 515. Disaster Pol in Adm. 3 Hours

DISASTER POLICY AND ADMINISTRATION - Explores policy approaches and administrative response strategies related to various phases of disasters and security crises in the U.S. and international settings with attention to human rights issues.

MPA 520. Organiztn Theory. 3 Hours

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 organization.

MPA 524. Ethics-Public Adm. 3 Hours

ETHICS IN PUBLIC ADMINISTRATION - This course stimulates an awareness of the moral dimension of public sector problems and decision making contexts. It provides students the tools and techniques they can use to meet demands for ethical judgments and decisive action in their public management careers.

MPA 526. Ldrshp Bldg Comm. 3 Hours

LEADERSHIP IN BUILDING COMMUNITIES - Seminar class where teams are formed to learn about the processes of building a neighborhood and recommending supportive public policy and other strategic interventions. Participants will be encouraged to refine their notions of community and leadership and to recommend strategies which capitalize on neighborhood assets, improve outcomes, and build community.

MPA 530. Fiscal Administn. 3 Hours

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.

MPA 540. Pub Sctr Hum Res Mgt. 3 Hours

PUBLIC SECTOR HUMAN RESOURCE MANAGEMENT - Broad-based study of people management ranging from the development and integration of organizational policy, through the many personnel administrative processes, and the human and regulatory aspects affecting the contemporary public sector workforce.

MPA 542. Pub Sec Lbr Mgt Rel. 3 Hours

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.

MPA 551. Intro-Public Policy. 3 Hours

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 evaluation.

MPA 555. Sel Top-Pub Policy. 3 Hours

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 when topic changes.

MPA 571. Administrative Law. 3 Hours

ADMINISTRATIVE LAW - Study of the judicial function 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.

MPA 593. Indp Sty-Public Adm. 1-6 Hours

INDEPENDENT STUDY IN PUBLIC ADMINISTRATION - Intensive independent research under the direction of a faculty member. Research paper. May be repeated when topic changes. Prior approval of formal project proposal required.

MPA 595. Government Internship. 1-6 Hours

GOVERNMENT INTERNSHIP - Assignment to appropriate government agencies or units for the purpose of gaining wide experience with the administrative system through a program of work experiences. Internship includes a related academic requirement.

MPA 597. Public Serv Project. 3-6 Hours

PUBLIC SERVICE PROJECT - For students currently employed in administrative positions in public or nonprofit 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. Prior approval of formal project proposal required.

Psychology

- Master of Arts, Clinical Psychology
- Master of Arts, Cognitive-Human Factors Psychology
- Master of Arts, General Psychology

Carolyn E. Roecker Phelps, Department Chairperson
 Roger N. Reeb, Psychology and Clinical Psychology Program Director
 R. Matthew Montoya, General Psychology Program Director
 F. Thomas Eggemeier, Interim Human Factors Program Director

The Department of Psychology offers two graduate programs leading to the Master of Arts:

- Clinical Psychology
- General Psychology

All programs emphasize the integration of theory and research with appropriate applied experience and 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 studies at the doctoral level, and/or work at the M.A. level in an applied/community, teaching, or research setting. Academic advisors and the department chair will direct students to faculty members who share their specific interests and areas of specialization. Graduate students are encouraged to work with these faculty members on a one-to-one basis.

Assistantships

Graduate 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.

Master of Arts in Clinical Psychology (clp)

The clinical psychology program is designed with the scientist-practitioner model as its foundation. In addition to a broad academic background and competence in the application of research methodology, this program provides the student with:

1. theoretical and practical knowledge in the areas of personality, psychopathology, and psychotherapy,
2. intensive training in the assessment of intelligence and personality,
3. supervised practice in interviewing and therapeutic intervention, and
4. the opportunity to emphasize work with either children or adults.

Through practicum experience in various community and clinical settings affiliated with the University, the student can translate classroom learning into practical experience. The clinical program is designed to prepare the student for employment in clinical positions at the master's level or for further study in clinical psychology at the doctoral level, and is accredited by the Masters in Psychology Accreditation Council (MPAC).

All students enrolled in any of the three programs leading to the Master of Arts with a major in Psychology are subject to the following general requirements of the Department of Psychology.

1. The number of semester hours and required courses described below.
2. Demonstration of satisfactory progress toward the degree that includes the requirement that students maintain a minimum average of B (3.00) in coursework. Students who fail to meet this requirement are either placed on academic probation or dismissed 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 department chair 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. Failure to do so may result in dismissal.
8. It is the student's responsibility to know and to meet the requirements of the University and of the graduate program.

The Master of Arts with a major in psychology (clinical) requires 46 semester hours consisting of 42 hours of academic coursework, including thesis, and 4 hours of practicum as specified below. Full-time students normally complete program requirements in two years.

Psychology Core Requirements

PSY 501	Exprmnt Desgn&Stat I	3
PSY 502	Exprmt Degrn&Stat II	3
PSY 510	History & Systems	3
PSY 599	Thesis	3

Clinical Core Requirements

PSY 550	Intro to Clin Psych	3
PSY 551	Assmt-Intelligence	3
PSY 553	Theory&Rsrch-Psych	3
PSY 555	Thry-Psnlty&Psthrpy	3
PSY 556	Assmt of Personality	3
PSY 564	Indiv Psychotherapy	3
PSY 565	Ethics In Assess PSY	3
PSY 569	Clinical Practicum	1
PSY 573	Developmental PSY	3

Child Emphasis Requirements

PSY 560	Chld Path & Thery	3
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PSY 566	Family&Marrg Therapy *	3
Adult Emphasis Requirements		
PSY 558	Group Psychothrpy *	3
PSY 566	Family&Marrg Therapy *	3
Total Hours		49

* With approval of the Director of the Clinical Program, an elective may be substituted for either PSY 558 Group Psychothrpy or PSY 566 Family&Marrg Therapy.

Master of Arts in COGNITIVE-Human Factors Psychology (exp)

The master's program in experimental-human factors psychology is designed for the student who wishes to integrate the theory, methods, and data of experimental psychology with that of human factors. The overall program is structured to prepare the student for further graduate study in experimental psychology or human factors at the Ph.D. level, and/or for a career as a research applied scientist in human factors psychology. The curriculum stresses integration of knowledge in three key areas:

1. the theoretical issues and quantitative research methodology associated with perception, human information processing, motor skills, and other psychological processes;
2. application of knowledge about basic psychological processes to the development of equipment, equipment interfaces, and work environments; and
3. the tools that the human factors specialist applies to system analysis, design, test, and evaluation.

Emphasis is on the integration of practical experience with course work and research. Students who choose the human factors track will meet the accreditation requirements of the Human Factors and Ergonomics Society, and receive credit toward Board Certification in Ergonomics or Human Factors. The human factors practicum is normally completed during the summer between the first and second years.

All students enrolled in any of the three 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 two years:

1. The number of semester hours and required courses described below.
2. Demonstration of satisfactory progress toward the degree that includes the requirement that students maintain a minimum average of B (3.00) in coursework. Students who fail to meet this requirement are either placed on academic probation or dismissed 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 department chair 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. Failure to do so may result in dismissal.
8. It is the student's responsibility to know and to meet the requirements of the University and of the graduate program.

The Master of Arts with a major in psychology (cognitive-human factors) requires 39 semester hours, including thesis, as specified below. Full-time students normally complete course requirements in two years.

PSY 501	Exprmnt Desgn&Stat I	3
PSY 502	Exprmt Degn&Stat II	3
PSY 510	History & Systems	3
PSY 599	Thesis	3
PSY 522	Cognitive Psychology	3
PSY 529	Perception	3
PSY 525	Cog Neuroscience	3
PSY 533	Engr Psychology	3
PSY/ENM 515	Human Factors	3
PSY/ENM 532	Cognitive Systems	3
Select three of the following: *		9
PSY 506	Sel Tp-adv Rsrch Mth **	
PSY 524	Human Informtn Procs	
PSY 528	Psychophysiology	
PSY 532	Cognitive Systems **	
PSY 534	Hum Comput Interact	
PSY 536	Training Sys Dvlpmnt	
PSY 537	Team&Group Processes	
PSY 596	Experimentl Research	
PSY 597	Readings	
Total Hours		39

* Courses may be selected from this list or, with permission of the program director, from other graduate courses within the department and from graduate courses/programs outside the department in such related disciplines as engineering or computer science. No more than six semester hours of courses taken outside the department may count toward program credit.

** PSY 506 and PSY 532 may be taken more than once for credit.

Master of Arts in General Psychology (psy)

The Master of Arts in general psychology is designed to accommodate a variety of goals and is structured so that the student gains a basic understanding across a broad spectrum of psychology. The program prepares students for work at the doctoral level and affords the opportunity to develop skills which are viewed positively by prospective employers. The program features empirical research, conceptual analysis and critical methodology in perception, learning, memory, language, problem solving, decision making, developmental, personality and social psychology. A student takes a minimum of two courses in the areas of cognitive, developmental, and social psychology. With the six elective hours, it is also possible to take courses in clinical and human factors, or develop interdisciplinary interests in computer science, education,

business, engineering, communication, or biology. The student can concentrate in a particular area of research by working with an individual faculty mentor.

All students enrolled in any of the three programs leading to the Master of Arts with a major in Psychology are subject to the following general requirements of the Department of Psychology.

1. The number of semester hours and required courses described below.
2. Demonstration of satisfactory progress toward the degree that includes the requirement that students maintain a minimum average of B (3.00) in coursework. Students who fail to meet this requirement are either placed on academic probation or dismissed 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 department chair 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. Failure to do so may result in dismissal.
8. It is the student's responsibility to know and to meet the requirements of the University and of the graduate program.

The Master of Arts with a major in psychology (general) requires 36 semester hours, including thesis, as specified below. Full-time students normally complete program requirements in two years.

PSY 501	Exprmnt Dsgn&Stat I	3
PSY 502	Exprmt Degn&Stat II	3
PSY 510	History & Systems	3
PSY 599	Thesis	3
Select two of the following: *		6
PSY 457	Tv/Effects on Chldr	
PSY 573	Developmental PSY	
PSY 574	Cogntve Devlp-Chldr	
Select two of the following: *		6
PSY 522	Cognitive Psychology	
PSY 524	Human Informtn Procs	
PSY 529	Perception	
Select two of the following: *		6
PSY 444	Environmtl Psychlgy	3
PSY 537	Team&Group Processes	3
PSY 585	Exprmnt Social PSY	3
Six hours of electives **		6
Total Hours		45

* In special cases, PSY 597 Readings or another course in one of the content areas (e.g., PSY 588 Intrprsnl Processes) may be substituted for one of the named courses.

** Six semester hours, some of which may be from other departments of the University, selected in consultation with the advisor.

Integrated Natural Science Courses

SCI 690. Special Topics. 1-4 Hours

SPECIAL TOPICS IN THE NATURAL SCIENCES FOR TEACHERS

- Special topical courses covering a science topic for teachers and designed to increase a classroom teacher's content knowledge. This may be offered in the form of a workshop and/or academic year mentoring. 1-4 credit hours.

Psychology Courses

PSY 501. Exprmnt Dsgn&Stat I. 3 Hours

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(s): Undergraduate statistics.

PSY 502. Exprmt Degn&Stat II. 3 Hours

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(s): PSY 501.

PSY 506. Sel Tp-adv Rsrch Mth. 3 Hours

SELECTED TOPICS IN ADVANCED RESEARCH METHODOLOGY - Study of special topics in statistics, research design, behavior research methods, and computer technology. The specific topic will vary from one offering to the next. Possible topics include applied multivariate statistics, questionnaire design, evaluation research methods, program evaluation, and performance measurement. May be repeated. Prerequisite(s): Graduate student status in psychology or permission of instructor.

PSY 510. History & Systems. 3 Hours

HISTORY AND SYSTEMS - An extensive survey of the theories and research paradigms that comprise the science of psychology. Topics include an historical overview of the field, the structure of the modern profession, and selected current areas of application and inquiry. Prerequisite(s): Graduate student status in psychology or permission of instructor.

PSY 515. Human Factors. 3 Hours

HUMAN FACTORS - Treatment of theory, data, and methods that can be applied to improve the interface between humans and the systems and products that they use. Human capabilities and limitations are studied to support the design of systems and products for safe and efficient use by the human operator.

PSY 522. Cognitive Psychology. 3 Hours

ADVANCED COGNITIVE PROCESSES - The study of cognition with attention to current methods, models, and theories. Topics include cognitive neuroscience, perception and pattern recognition, attention and consciousness, memory, knowledge representation, expertise, language, concept formation, problem solving, reasoning and decision making. Prerequisite(s): Graduate level status in psychology or permission of the instructor.

PSY 524. Human Informtn Procs. 3 Hours

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. Prerequisite(s): Graduate level status in psychology or permission of instructor.

PSY 525. Cog Neuroscience. 3 Hours

COGNITIVE NEUROSCIENCE - Treatment of cognitive neuroscience including its foundations and methodologies. Topics include methods of cognitive neuroscience, cellular mechanisms and cognition, neuroanatomy and development, sensation and perception, object perception, control of action/motor control, attention, learning and memory, language, consciousness, and hemisphere specialization. Prerequisite(s): PSY522 or permission of instructor.

PSY 528. Psychophysiology. 3 Hours

PSYCHOPHYSIOLOGY - Neurophysiology of attention, sensation, perception, emotion, learning, memory, and motor control. Emphasis on electrophysiological indicants and cybernetical analyses. Prerequisite(s): Graduate level status in psychology or permission of instructor.

PSY 529. Perception. 3 Hours

PERCEPTION - Systematic study of methods and research findings in the field of human perception, with an evaluation of theoretical interpretations. Prerequisite(s): Graduate student status in psychology or permission of instructor.

PSY 531. Hum Factrs-Sys Devlp. 3 Hours

HUMAN FACTORS IN SYSTEM DEVELOPMENT - Introduction to human factors during the system development process. Treats the design process from initial conceptual stages to final testing and evaluation. Emphasis is upon methods and techniques that permit development of data to support human factors functions throughout the process. Prerequisite(s): Graduate level status in psychology or permission of instructor.

PSY 532. Cognitive Systems. 3 Hours

COGNITIVE SYSTEMS - Cognitive systems provides a framework for analysis and design of complex sociotechnical systems with the objective of supporting the capability of the human operator to perform the cognitive work demanded by such systems. Cognitive work includes functions such as decision making, planning, situation assessment, problem solving, integrating, and coordinating that are performed in a variety of complex systems, such as health care, air traffic control, and transportation.

PSY 533. Engr Psychology. 3 Hours

ENGINEERING PSYCHOLOGY - Treatment of the relationship between problems in human factors engineering and theory-based research in experimental psychology and human performance. Topics covered include theory and research in such areas as decision-making, attention, perception, and motor performance and their potential application to the design of the person-machine interface in complex systems. Prerequisite(s): Graduate level status in psychology or permission of instructor.

PSY 534. Hum Computr Interact. 3 Hours

HUMAN COMPUTER INTERACTION A - critical review of human factors issues in the design of user interfaces of interactive computer systems. Emphasis will be placed on topics of cognitive engineering as they apply to user-centered systems design. Prerequisite(s): Graduate level status in psychology or permission of instructor.

PSY 535. Ergonomics. 3 Hours

ERGONOMICS - Ergonomics, the study of work, emphasizes the physical aspects, capabilities, and limitations of humans. Students participate in an anthropometric measurement laboratory, employ computerized biomechanical models, and examine the literature in a specific area of interest. Prerequisite(s): Graduate level status in psychology or permission of instructor.

PSY 536. Training Sys Dvlpmnt. 3 Hours

TRAINING SYSTEM DEVELOPMENT - Treatment of the systems approach to training program analysis, design, and evaluation. Topics covered include assessment of training objectives, development of training program content, selection of training media, application of simulation technology, and program evaluation procedures, including transfer of training methodology. Prerequisite(s): Graduate level status in psychology or permission of instructor.

PSY 537. Team&Group Processes. 3 Hours

TEAM & GROUP PROCESSES - Study of group processes and theories with special application to team training, communication, performance, and coordination in human factors settings and problems. Group decision making and leadership are also emphasized. Prerequisite(s): Graduate level status in psychology or permission of instructor.

PSY 538. Sp Top:Hum Factors. 1-3 Hours

SPECIAL TOPICS: HUMAN FACTORS - Special topics in human factors.

PSY 550. Intro to Clin Psych. 3 Hours

INTRODUCTION TO CLINICAL PSYCHOLOGY - Introduction to interviewing skills with adults and children. Academic and applied components include supervised practice interviews and documentation. Professional components addressed include diversity, ethics, and mental health systems. Prerequisite(s): Graduate student status in clinical program.

PSY 551. Assmt-Intelligence. 3 Hours

ASSESSMENT OF INTELLIGENCE - Theoretical rationale and techniques of individual mental testing, with emphasis on the Wechsler Scales (WAIS, WISC, WPPSI) and the Stanford-Binet. Major content areas include theories of intelligence, relevant psychometric principles, clinical interpretation, and current research. Prerequisite(s): Graduate student status in clinical program or permission of instructor.

PSY 553. Theory&Rsrch-Psych. 3 Hours

THEORIES AND RESEARCH IN PSYCHOTHERAPY - Survey of mental disorders with respect to their characteristics, etiology, and treatment alternatives. Emphasis is on the process of expanding knowledge through research. Practice in the use of the current diagnostic classification system. Prerequisite(s): Graduate student status in clinical program or permission of instructor.

PSY 555. Thry-Psnlty&Psthrpy. 3 Hours

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(s): Graduate student status in clinical program or permission of instructor.

PSY 556. Assmt of Personality. 3 Hours

ASSESSMENT OF PERSONALITY - Survey of approaches to personality assessment as well as the techniques of administration and interpretation of specific instruments. Emphasis is on the MMPI-2, NEO-PIR, and MCMI-III. Strategies of test construction and evaluation, ethical issues, and research are discussed. Prerequisite(s): (PSY 551, PSY 553) or graduate student status in clinical program or permission of instructor.

PSY 558. Group Psychothrpy. 3 Hours

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(s): PSY 555; graduate level status in clinical program or permission of instructor.

PSY 560. Chld Path & Therpy. 3 Hours

CHILD PSYCHOPATHOLOGY & PSYCHOTHERAPY - Current views of the etiology and differential diagnosis of psychopathological disorders of childhood and adolescence are examined. Relevant therapeutic approaches are presented and evaluated in relation to recent research. Prerequisite(s): (PSY 553, PSY 555; graduate student status in clinical program) or permission of instructor.

PSY 564. Indiv Psychotherapy. 3 Hours

INDIVIDUAL PSYCHOTHERAPY - In-depth study of the principles and techniques of an integrated approach to individual psychotherapy (humanistic, dynamic, and cognitive-behavioral) as developed from clinical and empirical findings. Prerequisite(s): (PSY 555; graduate student status in clinical program) or permission of instructor.

PSY 565. Ethics In Assess PSY. 3 Hours

ETHICAL & CULTURAL ISSUES IN CLINICAL ASSESSMENT & PSYCHOTHERAPY - An examination of ethical theories and principles applied to clinical assessment and psychotherapy. Issues addressed include ethical frameworks, ethical codes, assessment practices, psychotherapy techniques, and common problems arising in clinical practice. Prerequisite(s): Graduate student status in clinical program or permission of instructor.

PSY 566. Family&Marrg Therapy. 3 Hours

MARRIAGE & FAMILY THERAPY - Survey of the major therapeutic approaches to family and marital problems and related research findings. Prerequisite(s): (PSY 555; graduate student status in clinical program) or permission of instructor.

PSY 567. Sp Top:Clin Psychlgy. 1-3 Hours

SPECIAL TOPICS IN CLINICAL PSYCHOLOGY A - variable topics course on issues relevant to the training of students preparing for work in clinical psychology. May be repeated with different topics. Prerequisite(s): Graduate level status in clinical program or permission of instructor.

PSY 569. Clinical Practicum. 1 Hour

CLINICAL PRACTICUM - Experience in interviewing, psychological testing and therapy is acquired through placement in approved mental health agencies. Prerequisite(s): Graduate student status in the clinical program.

PSY 573. Developmental PSY. 3 Hours

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(s): Graduate student status or permission of instructor.

PSY 574. Cogntve Devlp-Chldrn. 3 Hours

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(s): PSY 452; (graduate status or permission of instructor).

PSY 585. Exprmnt Social PSY. 3 Hours

EXPERIMENTAL SOCIAL PSYCHOLOGY - Designed to provide information and perspective about such social psychological topics as attitude change, interpersonal attraction, social influence, attribution, aggression, helping and intrinsic motivation. Prerequisite(s): Graduate student status.

PSY 588. Intrprsnl Processes. 3 Hours

INTERPERSONAL PROCESS - Seminar in research in some prominent sub-areas of social psychology. Emphasis on critical skills and research ideas in topics such as non-verbal communication, self-disclosure, affiliation and attraction, and equity theory. Prerequisite(s): PSY 585 or permission of instructor.

PSY 595. Special Topics. 1-3 Hours

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(s): Graduate student status or permission of instructor.

PSY 596. Experimentl Research. 1-3 Hours

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(s): Permission of instructor.

PSY 597. Readings. 1-3 Hours

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(s): Permission of instructor.

PSY 599. Thesis. 3 Hours

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.

Religious Studies

- Doctorate of Philosophy, Theology
- Master of Arts, Pastoral Ministry
- Master of Arts, Theological Studies
- Certificate, Pastoral Care

Daniel Speed Thompson, Chairperson

William Johnston, Acting Committee Chair of Masters Programs in Theological Studies and Pastoral Ministry

William Portier, Acting Committee Chair of the Doctoral Program in Theology

Amy Doorley, Coordinator of Graduate Studies

The Department of Religious Studies offers two graduate programs leading to the Master of Arts: theological studies and pastoral ministry. A third program leads to the Doctor of Philosophy in theology. The distinctive research focus of the doctoral program is the practices/praxis of Catholicism as it is inculcated in multiple ways in the United States context. Master's and doctoral students join with their professors to form an ecumenical community that integrates the study of the classical disciplines of Christian theology with attentiveness to the multicultural and interdisciplinary dimensions critical to the contemporary study of religion. Intensive study of Roman Catholic traditions remains central to each graduate program. Both the master's and doctoral programs include basic requirements and allow students flexibility in the remainder of their course selection to ensure that their graduate studies serve their desired outcomes, whether in pursuing further academic work or securing placement in professional ministry.

Assistantships

Qualified applicants are eligible for financial assistance in the form of assistantships for master's students and assistantships or fellowships for doctoral students. Awards are determined on a competitive basis. Master's students receive tuition remission for 18 credit hours per year and an annual stipend. Doctoral students receive tuition remission for 18 to 30 credit hours per year and an annual stipend.

Advising

The M.A. program director of graduate studies functions as the advisor for all incoming master's students. No later than the completion of the tenth semester hour of graduate credit, a student must formally choose an academic advisor from among the full-time religious studies faculty members who teach in the master's program or formally agree to have the M.A. program director of graduate studies continue as her or his advisor.

The Ph.D. program director (or the director's designate) functions as the initial academic advisor for all Ph.D. students. The Ph.D. program director assists students in first semester course selection and provides initial guidance in scheduling general examinations and selecting the five members of the general examination committee. The Ph.D. program director and coordinator of graduate studies report on advising activities for each student to the Ph.D. committee once per semester.

Doctoral students also work with a five-member general examination committee. The committee must include a faculty member from each of

the core disciplines: history of Christianity, biblical studies, and theology/ethics. The committee determines whether the student passes or fails the three general examinations.

As soon as doctoral students determine their dissertation topics, they should choose, in consultation with the Ph.D. program director, a dissertation director from among the religious studies faculty members who teach doctoral seminars. The doctoral student, with the dissertation director's guidance, chooses a candidacy examination/dissertation committee. In addition to the dissertation director, this committee ordinarily consists of three religious studies faculty members who teach doctoral seminars and one member outside the department. This committee determines whether the student passes or fails the candidacy examination and reads and evaluates the dissertation.

The composition of both examination committees is subject to the approval of the Ph.D. program director and the Ph.D. committee.

Facilities

Master's and doctoral students have access to distinctive University of Dayton resources such as the Center for Leadership and Community, the Center for Catholic Education, and the Institute for Pastoral Initiatives. The Consortium of Higher Education in Religious Studies offers interaction with area seminaries and other institutions, interchange of facilities, sharing of library resources, cooperative innovative programming, and cross-registration. Students have access not only to a greater variety of courses but also opportunities for even more flexible construction of their degree programs.

The University of Dayton also houses the International Marian Research Institute which administers a doctoral program in Theology (S.T.D.) sponsored by the Pontifical Marianum University in Rome. Religious studies master's students may take courses in the Institute. Interested students should consult with their academic advisor for further information.

Doctorate of Philosophy in Theology (the)

The Ph.D. in theology employs a unique approach to theological studies and research utilizing the methodologies associated with the academic study of religion, emphasizing strong interaction with the social sciences and humanities. The program's distinctive practice of integrating methodologies prepares students to work within a web of disciplines with theology at the center of research and writing. Using this integrative methodological approach, graduates are able to do theology that is rooted in discovering, analyzing, understanding, and proposing creative transformations in their current religious context, especially as found in the practices/praxis that reflect United States Catholic experience.

Doctoral students must complete a minimum of 90 semester credit hours beyond the bachelor's degree. Up to 30 credit hours from an accredited master's program in theology or religious studies can be counted toward the 90-credit requirement. The Ph.D. program director, in consultation with the religious studies Ph.D. committee, determines the number of credits accepted.

All students must complete the following courses or their equivalent:

REL 601	Theo Meth:Tradition	3
REL 602	Theorsch-Contemp	3
REL 603	Historiography	3
REL 604	Sem-Theo Rsrch Mthds	3

Between 12 and 30 semester credit hours can be earned as dissertation hours; additional dissertation hours will ordinarily not count toward the minimum of 90 semester credit hours for the Ph.D. Students select

doctoral seminars or reading courses to complete the remainder of the 90 credits.

Each student must be in full-time residence; i.e., taking the load of a full-time student, for a minimum of one year before attempting the qualifying examination.

Comprehensive Examinations

Each student, during the course of the program, must successfully complete three general examinations and a qualifying examination.

1. The three GENERAL EXAMINATIONS approximate the master's level comprehensive examinations. A student is expected to demonstrate basic knowledge in three core disciplinary areas of theology: biblical studies, history of Christianity, and systematic theology and ethics. The examinations serve two purposes. First, they provide a student with the background necessary for teaching most college-level introductory courses. Second, they equip the student with the broad knowledge base necessary for skillful theological work. The chair of the examination committee in cooperation with the Ph.D. program director oversees the proper administration of the three exams. Each examination consists of a written component followed by an oral examination. Ordinarily, the biblical studies examination must be completed before the student completes 36 hours beyond the bachelor's degree. Students will then ordinarily complete exams in historical theology, and systematic & moral theology in that order. Students must pass all three examinations before proceeding to the qualifying examination. Students will be registered for the appropriate general examination in the term after which the bibliography is approved. The student may repeat any examination once. Failure to pass an examination on a second attempt terminates the student from the program. Students who took comparable exams in an accredited master's program may petition for the waiver of any or all of the general examinations. A petition is submitted to the coordinator of graduate studies who presents it to the religious studies Ph.D. committee. The committee makes the final determination.
2. Each student must pass a CANDIDACY EXAMINATION before beginning the dissertation. Ordinarily, the student must complete 54-60 semester hours beyond the bachelor's degree before attempting this examination. Through the candidacy examination, students demonstrate their ability to do original research in the field of U.S. Catholic experience. It is, therefore, substantially more detailed and extensive than the three general examinations. The qualifying examination consists of three parts:
 - A. a written examination on U.S. Catholic experience broadly conceived and the student's area of research;
 - B. a completed dissertation prospectus covering the proposed dissertation area; and
 - C. an oral examination.

Upon successful completion of the written examination and submission of the prospectus, the student has an oral examination with her or his committee. The student must be prepared to respond to questions on U.S. Catholic experience as well as her or his dissertation prospectus. The chair of the examination committee in cooperation with the Ph.D. program director oversees the proper administration of the exam. Upon successful completion of the candidacy examination, students are considered candidates for the doctoral degree. A student may repeat all or part of the candidacy examination once if needed; a second failure terminates the student from the program.

Research Skills

By the time a student has completed 54 hours in the program (including any hours accepted from other institutions), the student is expected to demonstrate a minimum of three research skills that will enable the student to do primary research in an area of the U.S. Catholic experience.

1. Latin: A basic ability to read official ecclesiastical texts in Latin is ordinarily expected of all students. Proficiency is demonstrated by successful completion of an appropriate course in Latin or by passing an examination consisting of translating a short specific text (e.g., a section of an encyclical) and accurately responding to content questions on another Latin text. The examination is to be completed within a defined time period, aided by a dictionary and grammar guide. A qualified religious studies faculty member administers the exam.
2. Research Languages: All students are expected to demonstrate at least reading proficiency in one modern language other than English. Proficiency is normally demonstrated by the successful completion of a test administered by a qualified faculty member in either the Department of Languages or Religious Studies. Depending upon the precise area of research, the student may be required to demonstrate a higher level of competency in the main research language. Students who have established proficiency in a language in another graduate program within the last five years may petition the religious studies Ph.D. committee to waive the language examination.
3. Additional Research Languages or Analytical Skills: Depending on her or his precise area of research, each student will be required to demonstrate proficiency in at least one additional research skill. For those whose research focuses on texts, that skill may be an additional language; for those whose research includes a significant component in biblical studies or classical theology, proficiency in biblical languages may be indicated; for those doing statistical or qualitative research, facility in an additional analytical area may be necessary (e.g., statistics, ethnography, participant-observation analysis, etc.). Successful completion of a graduate course in a given analytical skill serves as an acceptable indicator of a sufficient level of proficiency for future research purposes.

The specific additional research skills (both languages and analytical) required for the student's program will be determined by the student's dissertation committee in consultation with the Ph.D. program director and religious studies Ph.D. committee. With their approval, REL 604 may fulfill the additional research languages or analytical skills requirement. A student is notified in writing of specific research skills required of her or him.

Dissertation

The dissertation is a major research project in which the candidate demonstrates the ability to define a research question, develop a research plan, employ relevant research skills and methodologies, and conduct original theological research. The candidate, in close consultation with the dissertation director, determines the topic, methodologies, and pertinent resources. The research plan is outlined in the dissertation prospectus that is submitted as part of the candidacy examination. Passing the candidacy examination means that the prospectus is accepted. Candidates may apply no more than 30 semester hours of dissertation credit to the Ph.D. degree.

The student's dissertation director and committee will be constituted as described above. The dissertation is presented to the committee

in a public defense no later than four weeks prior to graduation. The dissertation committee may accept the dissertation without revisions; with minor revisions to be reviewed by the dissertation director; with major revisions to be examined by the committee; or the committee may reject the dissertation (which requires the candidate to retake the dissertation area examination and proceed from that point, as above). Upon final acceptance of the dissertation, the candidate shall be awarded the Ph.D. degree.

Master of Arts in Pastoral Ministry (pam)

The master's program in pastoral ministry integrates the study of theology with the general principles and effective practices of pastoral ministry. The program offers students an opportunity to prepare for a variety of service careers emerging in the contemporary Church, including pastoral positions in catechetics and religious education, hospital, family, parish, and campus ministry. Courses in religious education and telecommunications, family and parish ministries, and the social teachings of the Church ensure the vitality of the program.

Program Requirements for the M.A.

This program requires 36 credit hours for graduation. The majority of the student's coursework must be taken in the Department of Religious Studies. A 3.0 grade point average in departmental courses and in the student's overall program is required for graduation.

Master's students in both theological studies and pastoral ministry are required to successfully complete three two-credit courses: REL 500B, "Foundations of Biblical Studies," REL 500C, "Foundations of Church History and Historical Theology," REL 500D, "Foundations of Systematic and Moral Theology." Students may petition the religious studies graduate committee to waive from one to three of these requirements. The student must present clear evidence of equivalent coursework to that completed in REL 500B, C, or D for the requirement to be waived. Students must complete REL 500B prior to taking specialized biblical courses, REL 500C prior to taking specialized historical courses, and REL 500D prior to taking specialized systematic or moral theology courses. Each student must complete at least one additional two- or three-credit course in each of the four core disciplinary areas: biblical studies, historical studies, systematic theology and moral theology.

Upon completion of the basic requirements, students must then draw up a specific program proposal based upon the projected course rotation. The selection of courses is done in consultation with the student's academic advisor and in light of the student's needs, interests, and background. This program proposal is submitted to the coordinator of graduate studies to be placed in the student's file.

The courses leading to the master's degree may be pursued in summer sessions with courses of one to three weeks duration, or be pursued full-time; i.e., throughout the year. There are opportunities for on-line course work as well. The master's degree must be completed seven calendar years from the time of matriculation.

Language Proficiency

There is no language requirement for the master's 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. Students preparing for doctoral work should work toward proficiency in at least one modern language.

Pastoral Ministry Seminar

Students are required to enroll in this no credit seminar at least four semesters during their pursuit of the Pastoral Ministry master's degree. The seminar provides opportunities for students to engage in those

practices critical for ongoing development as a minister. Among those practices are theological reflection at least twice each semester with other students (in addition to the theological reflection integrated into the other courses) and attendance of one to two workshops focusing on practical skills like the RCIA process, managerial skills, practices of faith formation, evangelization process, Bible study, managing a budget and interpersonal skills such as instruction in specific communication techniques in areas like group building, pastoral consultation, conflict management, ministering to youth, community organizing. Over the four semesters, students are to attend at least ten different workshops evenly distributed among the various skills needed for effective ministry.

Pastoral Ministry Formation

Students are required to attend human and spiritual formation sessions. Students meet individually and in groups with the coordinator of graduate studies to engage in those practices critical in formation as a minister. Among but not limited to those practices are opportunities for individual sessions with the coordinator, group spiritual formation, and formation regarding human development and communication. Over the four semesters, students are to attend at least four individual sessions with the coordinator, at least six of the eight different group spiritual formation sessions, and at least two sessions on human development and communication.

Structure of the Master of Arts in Pastoral Ministry

This program is divided into three parts:

1. Theological foundations (12 to 15 hours including the six required credits);
2. Basic principles for effective ministry (six to nine hours); and
3. The practice and study of specific ministries (9 - 12 hours), including a practicum (3 hours) and the required pastoral ministry seminar (no credit).

REL 500B	Fdns Bible St	2
REL 500C	Fdns Ch Hs/Hs Theo	2
REL 500D	Fdns Theo & Ethics	2
Select one course from each area:		8-12
Biblical		
Moral		
Systemic		
Historical		
Pastoral Ministry courses including:		12
REL 581	Pastoral Minstry Sem	
REL 589	Practicum	
REL 580	Theology of Ministry	
or REL 586	Ldrshp-Parish Mnstry	
or REL 585	Pastoral Counseling	
or REL 584	Canon Law	

Language Proficiency

There is no language requirement for the master's 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. Students preparing for doctoral work should work toward proficiency in at least one modern language.

Certificate in Pastoral Care

A certificate in Pastoral Care is available for those Pastoral Ministry students who complete an additional thirteen semester credit hours

through Counselor Education and Human Services. This certificate offers educational grounding in human development and counseling theory. It may be particularly helpful for ministers who will apply for the Certification of Lay Ecclesial Ministers.

EDC 531	Pers&HumDvlpAcrrsLfSp	2
EDC 545	Counslng Technq Lab	2
EDC 575	Coun Diverse Pop	3
EDC 583	Thr&Tchnq-Grp Cours	3
EDC 623	Foundtns-Abnrml Psy	3
EDC 635	Couples&Fmly Cours	3

Master of Arts in Theological Studies (th)

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 in Christianity, and contemporary systematic and moral theologies, especially in the Roman Catholic tradition. Ecumenical perspectives among Christians and interfaith dialogue among the world religions provide another important matrix for study.

Program Requirements for the M.A.

This program requires 36 credit hours for graduation. The majority of the student's coursework must be taken in the Department of Religious Studies. A 3.0 grade point average in departmental courses and in the student's overall program is required for graduation.

Master's students in both theological studies and pastoral ministry are required to successfully complete:

REL 500B	Fdns Bible St	2
REL 500C	Fdns Ch Hs/Hs Theo	2
REL 500D	Fdns Theo & Ethics	2

Students may petition the religious studies graduate committee to waive from one to three of these requirements. The student must present clear evidence of equivalent coursework to that completed in REL 500B, C, or D for the requirement to be waived. Students must complete REL 500B prior to taking specialized biblical courses, REL 500C prior to taking specialized historical courses, and REL 500D prior to taking specialized systematic or moral theology courses. Each student must complete at least one additional two- or three-credit course in each of the four core disciplinary areas: biblical studies, historical studies, systematic theology and moral theology.

Upon completion of the basic requirements, students must then draw up a specific program proposal based upon the projected course rotation. The selection of courses is done in consultation with the student's academic advisor and in light of the student's needs, interests, and background. This program proposal is submitted to the director of graduate studies for approval.

The programs leading to the master's degree may be pursued in summer sessions with courses of one to three weeks duration, or be pursued full-time; i.e., throughout the year. The master's degree must be completed seven calendar years from the time of matriculation.

Structure of the Master's Programs and Coursework

Three arrangements are possible:

- 36 hours of coursework (including the seven required credits) plus submission of a research paper (completed in a course taken between the 15th and 24th hours of coursework) to the coordinator of graduate studies;

- 33 hours of coursework (including the seven required credits) plus a three-hour comprehensive project with an oral defense; or
- 30 hours of coursework (including the seven required credits) plus a 6-hour thesis with an oral defense.

Language Proficiency

There is no language requirement for the master's 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. Students preparing for doctoral work should work toward proficiency in at least one modern language.

Concentration in Marian Studies

A concentration in Marian Studies is available for students who take between 12 and 16 semester credits in specially designated courses listed under the Marian studies concentration. The International Marian Research Institute at the University of Dayton offers these courses on a regular basis. All graduate students have access to the world-renowned resources of the Marian Library for their research.

Courses

REL 500B. Fdns Bible St. 2 Hours

FOUNDATIONS OF BIBLICAL STUDIES - This required course focuses on critical reading and discussion of representative texts from the field of biblical studies to introduce content and methods at a master's level. Passing a final examination completes the requirement.

REL 500C. Fdns Ch Hs/Hs Theo. 2 Hours

FOUNDATIONS OF CHURCH HISTORY & HISTORICAL THEOLOGY - This required course focuses on critical reading and discussion of representative texts from the related fields of church history and historical theology to introduce content and methods at a master's level. Passing a final examination completes the requirement.

REL 500D. Fdns Theo & Ethics. 2 Hours

FOUNDATIONS OF SYSTEMATIC & MORAL THEOLOGY - This required course focuses on critical reading and discussion of representative texts from the related fields of systematic and moral theology to introduce content and methods at a master's level. Passing a final examination completes the requirement.

REL 501. Biblical Hebrew I. 3 Hours

BIBLICAL HEBREW I - Introduction to the morphology and syntax of biblical Hebrew to facilitate the handling of basic tools and the reading of simple prose texts.

REL 502. Biblical Greek I. 3 Hours

BIBLICAL GREEK I - Introduction to Hellenistic Greek. Vocabulary, grammar, and syntax. Selective readings of New Testament texts.

REL 503. Biblical Hebrew II. 3 Hours

BIBLICAL HEBREW II - Introduction to the morphology and syntax of biblical Hebrew to facilitate the handling of basic tools and the reading of simple prose texts.

REL 513. Old Test-Exegesis. 2-3 Hours

OLD TESTAMENT EXEGESIS - Critical study of selected writings of the Old Testament. (1) Pentateuch, (2) Historical Books, (3) Prophets, (4) Psalms, (5). Wisdom Literature, (6) Apocalyptic Literature.

REL 518. New Test-Exegesis. 2-3 Hours

NEW TESTAMENT EXEGESIS - Critical exegetical study of selected writings of the New Testament. (1) Synoptics: Matthew and Mark, (2) Luke/Acts, (3) John, (4) Pauline Corpus, (5) Pastoral Epistles, (6) Book of Revelation.

REL 520. His/Theo Erly&Med Ch. 2-3 Hours

HISTORY & THEOLOGY OF THE MEDIEVAL CHURCH - The development of doctrine. Church institutions, and faith practices from the first through the 15th century on the eve of the Reformation. Prerequisite(s): REL 500C.

REL 523. Trent to Vatican II. 2-3 Hours

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.

REL 524. Protestant Christnty. 2-3 Hours

PROTESTANT CHRISTIANITY - Survey of the development of Protestant thought from the Reformation to the present. Analysis, in their own writings and historical context, of selected Protestant theologians, such as Luther, Calvin, Knox, Cranmer, Schleiermacher, Ritschl, Harnack, and Barth.

REL 528. US Catholicism. 2-3 Hours

US CATHOLICISM - Examination of the experiences and contributions of the people who formed the Catholic Church in the United States. A focus on the influence of Catholicism on American culture, politics, intellectual life, education, and religion and an investigation of how Catholic faith has informed the attitudes and actions of U.S. Catholics regarding culture, politics and social justice. Topics include religious liberty, lay movements in the U.S., anti-Catholicism, contributions of U.S. Catholic women, African American Catholics, and Hispanic/Latino[a] Catholics.

REL 529. African Amer Rel. 2-3 Hours

AFRICAN-AMERICAN RELIGIONS - Study of African-American religions.

REL 535. God & Human Exper. 2-3 Hours

GOD AND HUMAN EXPERIENCE A - survey of Christian theologies of God, traditional and modern, and the viewpoints they represent on the nature and purpose of human existence.

REL 537. Christology. 2-3 Hours

CHRISTOLOGY - An examination of the approaches taken by contemporary theologians in discussing Jesus and his significance for Christian faith.

REL 540. Ecclesiology. 2-3 Hours

ECCLESIOLOGY - Study of the nature and mission of the church, with an emphasis on Catholic perspectives. Topics include the church as mystery, models of the church, ecumenism, authority, laity, and the church-world relationship.

REL 543. Sacramental Theology. 2-3 Hours

SACRAMENTAL THEOLOGY - Detailed study of the principle of sacramentality and of the individual sacraments, stressing the historical development of each and its contemporary renewal.

REL 544. Sel Cath Doctrines. 2-3 Hours

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.

REL 545. Contemp Theologians. 2-3 Hours

CONTEMPORARY THEOLOGIANS - An examination of several contemporary approaches to theological method. Beginning with an overview of revolutionary challenges to theology in the nineteenth century, the course will examine the lives and contributions of such influential and diverse religious thinkers as Lonergan, Gutierrez, Ruether, Schillebeeckx, Rahner, and Kung and explore Feminist, Latin American, Asian, and African theologies.

REL 546. Liturgy & Sacraments. 2-3 Hours

LITURGY & SACRAMENTS - Study of ritual, theological, and pastoral dimensions of constitutive features of Christian liturgy, and of the Eucharist and selected other sacraments. 2-3 credit hours. Prerequisite(s): REL 500D.

REL 549. Aquinas. 2-3 Hours

AQUINAS - Theology of Aquinas including Trinity, human nature, providence, grace, virtue, Christ, and sacraments with attention to historical context and contemporary interpretation. Main focus is study of the Summa.

REL 551. Theology & World Rel. 2-3 Hours

THEOLOGY & WORLD RELIGIONS - An examination of the reality, challenges, and opportunities confronting faith communities in our multicultural and religiously pluralistic societies. Students explore the spiritual resources of several of the world's religions, the ways in which these religions view one another, and the impact of interreligious dialogue and collaboration on the development of Christian theology today.

REL 561. Catholic Moral Theol. 2-3 Hours

CATHOLIC MORAL THEOLOGY - This course introduces students broadly to Catholic moral theology, by discussing the changing contexts of Catholic moral theology from the manualist tradition to the present, and by engaging some of the contemporary debates present in both magisterial and theological works. Prerequisite(s): REL 500A, REL 500B, REL 500C, REL 500D.

REL 562. Theo-ethic Reasoning. 2-3 Hours

THEO-ETHIC REASONING - Students of this course will learn to distinguish reasoning from rhetoric in the artful science of analyzing and constructing theo-ethical arguments by means of repeated utilization of technical notions (such as claims, reasons, warrant and backing) within a theological framework. Prerequisite(s): REL 500A, REL 500B, REL 500C, REL 500D.

REL 563. Christn Discipleship. 3 Hours

DISCIPLESHIP - Theology of Christian Discipleship. Study of Christian ethics through the lens of discipleship, drawing particularly on theological reflection on scripture within Church traditions. Topics may include citizenship, evangelization, martyrdom, warfare, marriage, prayer, and economic practice. Prerequisite(s): REL 500A, 500B, 500C, 500D.

REL 574. Mary:Modern Period. 2 Hours

MARY: MODERN PERIOD - Study of the development of Mariology from the Renaissance to the 20th century: principal Marian questions/controversies, Marian devotions, Marian shrines, Mary in art and liturgy, Marian feasts, and principal Marian works.

REL 575. Mary:Contemp Period. 2 Hours

MARY: CONTEMPORARY PERIOD - Study of the teaching of Vatican II about the Blessed Virgin Mary, especially in chapter VIII of LUMEN GENTIUM and its implications and developments in contemporary Marian doctrine and devotion. Recent encyclicals on Mary.

REL 578. Special Marian Topcs. 2 Hours

SPECIAL MARIAN TOPICS - Study of issues and subjects pertinent to Mariology.

REL 580. Theology of Ministry. 2-3 Hours

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.

REL 581. Pastoral Minstry Sem. 0-3 Hours

PASTORIAL MINISTRY SEMINAR - Study of the practices critical for ongoing development as a minister with a focus on engaging in theoretical reflections. Those seeking the pastoral ministry degree are required to enroll at least four times during their course of studies.

REL 582. Intro to Spir Dir. 2-3 Hours

INTRODUCTION TO SPIRITUAL DIRECTION & PASTORIAL CARE - Introduction to the basic principles and practices of spiritual direction and pastoral care for those working in various pastoral settings, including parishes and health care facilities.

REL 584. Canon Law. 2-3 Hours

CANON LAW - Study of those sections of canon law especially relevant to the lay ecclesial minister serving in a Roman Catholic context. Required of those seeking the pastoral ministry degree.

REL 585. Pastoral Counseling. 2-3 Hours

PASTORIAL 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.

REL 586. Ldrshp-Parish Mnstry. 2-3 Hours

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.

REL 589. Practicum. 3-6 Hours

PRACTICUM - Approved supervised pastoral involvement coupled with theological reflections.

REL 590. Selected Questions. 1-3 Hours

SELECTED QUESTIONS - Study of specific questions and developments in biblical, historical, systematic, or catechetical theology.

REL 591. Special Topics. 1-6 Hours

SPECIAL TOPICS - Graduate workshop and/or seminar investigating and analyzing a specific area of theology and interdisciplinary scholarship concerning contemporary issues.

REL 592. Contemporary Issues. 1-6 Hours

CONTEMPORARY ISSUES - Study of issues and subjects pertinent to theological studies and pastoral ministry.

REL 593. Directed Study. 1-3 Hours

DIRECTED STUDY - Directed study of a particular theologian, problem, or historical period.

REL 598. Comprehensive Proj. 3 Hours

COMPREHENSIVE PROJECT - Comprehensive project.

REL 599. Thesis. 6 Hours

THESIS - Thesis.

REL 601. Theo Meth:Tradition. 3 Hours

SEMINAR IN THEOLOGICAL RESEARCH METHODS: THE TRADITION - Examination of the methods and practices that comprise the most influential traditions of Christian theology. Students will gain a basic understanding of the theological approaches, methods, and practices as they have developed over time. Required of all entering doctoral students; open with permission to advanced master's students.

REL 602. Theorsch-Contemp. 3 Hours

SEMINAR IN THEOLOGICAL RESEARCH METHODS: CONTEMPORARY - Examination of methods and practices that exemplify the most influential contemporary theological work in the Christian tradition. Students will gain a basic understanding of the theological approaches, methods, and practices currently shaping the theological disciplines with a focus on theology as the center of a network of disciplines. Required of all entering doctoral students; open with permission to advanced master's students.

REL 603. Historiography. 3 Hours

SEMINAR IN THEOLOGICAL RESEARCH METHODS: HISTORIOGRAPHY - Examination of various historical accounts of U.S. Catholicism to gain familiarity with key events, persons, and movements in U.S. Catholicism and the historiography of the subject. Students will gain an understanding of the theological dimensions of U.S. Catholic history and historiography. Required of all entering doctoral students; open with permission to advanced master's students.

REL 604. Sem-Theo Rsrch Mthds. 3 Hours

SEMINAR IN THEOLOGICAL RESEARCH METHODS: AMERICAN CATHOLIC STUDIES - Examination of the most influential contemporary work in American Catholic Studies to highlight the interdisciplinary nature of the theology doctoral program. Students will gain a basic understanding of methods and practices currently shaping American Catholic Studies and its impact upon theological work. Required of all entering doctoral students; open with permission to advanced master's students.

REL 610. Gen Exam-Bibl St. 0 Hours

GENERAL EXAMINATION OF BIBLICAL STUDIES - Examination in Biblical Studies for Ph.D. students in Theology.

REL 611. Gen Exam-Hist Theo. 0 Hours

GENERAL EXAMINATION OF HISTORY OF THEOLOGY - Examination in Historical Theology for Ph.D. students in Theology.

REL 612. Gen Exam-Sys Theo. 0 Hours

GENERAL EXAMINATION OF SYSTEMATIC THEOLOGY - Examination in Systematic and Moral Theology for Ph.D. students.

REL 615. Qual Exam. 0 Hours

QUALIFYING EXAMINATION - Qualifying examination for Ph.D. students in Theology. Prerequisite(s): 60 credit hours in the Ph.D. program. Thirty credit hours may be from a MA in Theology or equivalent degree. Thirty credit hours of doctoral-level course work and language and additional research requirements.

REL 620. Sem:US Cath Exp/Hst. 3 Hours

SEMINAR - U.S. CATHOLIC EXPERIENCE IN HISTORICAL PERSPECTIVE - Examinations of the complex interactions between European-formed, medieval and post-Tridentine Catholic spiritualities, theologies and communities, in the early contact period with indigenous cultures and the later U.S. national context. A focus upon specific people, movements, thought, practices, and institutions prior to Vatican II will provide the content for considering enduring influences or decisive moments in shaping the contemporary U.S. Catholic experience. The seminars consider social, cultural, economic, political as well as the religious and theological influences that comprise the multiplicity of the U.S. Catholic experience.

REL 640. Sem:US Cath&Globl Chr. 3 Hours

SEMINAR: U.S. CATHOLIC AND GLOBAL CHRISTIANITY - Seminar on U.S. Catholic and global Christianity.

REL 645. Seminar. 3 Hours

SEMINAR - U.S. CATHOLIC EXPERIENCE IN THEOLOGICAL PERSPECTIVE - Examinations of the complex interaction between U.S. Catholic experience and theologies after Vatican II and social, cultural, economic, and political movements which influence and are influenced by contemporary theologies. Foci may include specific people, movements (e.g., ecumenism, feminism, ecological issues, multi-culturalism, restorationism, etc.), theologies, practices, or institutions.

REL 660. Sem:Ethc/Pract/Soc. 3 Hours

SEMINAR - ETHICS, PRACTICE, AND CONTEMPORARY SOCIETY - Examinations of specific foundational or applied questions in contemporary Christian ethics, especially in patterns of communal practices such as evangelization, catechesis, liturgy, etc. Issues with particular relevance for North America will be the focus of research in these seminars. Differing perspectives from diverse methodological traditions will be highlighted.

REL 670. Sem:Rel Plurifrm Soc. 3 Hours

SEMINAR - RELIGION IN A PLURIFORM SOCIETY - Examinations of how religion functions in a diverse society, drawing upon the social sciences. Foci can include the personal search for meaning, concern for the commonweal, church-state relations, the family, studies of specific religious practices or local communities, the influence of social location (e.g., race, class, gender) on religious experience.

REL 697. Directed Readings. 1-3 Hours

DIRECTED READINGS - Designed for individual, student-faculty study in a specialized area of interest. Topic and criteria for evaluation to be specified prior to registration. Students may take no more than two directed readings per term.

REL 699. Dissertation. 3-12 Hours

DISSERTATION - Research for an original research project for the doctoral degree, incorporating an appropriate review of theory and literature and demonstrating competence in the application of research methodology.

Visual Arts

Judith Huacuja, Department Chairperson

* There is no graduate program in visual arts at this time. Graduate courses offered support other graduate programs.

Courses

School of Business Administration

Paul Bobrowski, Dean

Paul Sweeney, Associate Dean

Janice Glynn, Director, MBA Program

Tel. 937-229-3733

Web site: <http://business.udayton.edu/mba>

Mission

The School of Business Administration offers an MBA curriculum that is multidisciplinary, integrative and flexible. The faculty and administrators in collaboration with the local business community believe that developing technologies, globalization, and workforce diversity have created a demand for change in higher education. Thus, UD has created an MBA program that includes an integrated core curriculum in which each course is built upon business themes rather than single business disciplines, better preparing students to solve complex business problems that straddle functional boundaries.

The mission of the Master of Business Administration (MBA) program is to develop students' business knowledge and skills to address critical business issues faced by enterprises. Through integrated and multidisciplinary educational experiences that place significant emphasis on critical thinking, our graduates become excellent candidates for key leadership roles within their organizations.

The MBA program develops graduates who have:

- An in-depth understanding of the functional areas of business
- An understanding of functional integration in the business enterprise
- An ability to visualize and conceptualize business opportunities, and provide effective leadership in pursuit of those opportunities
- An understanding of the relations between the firm and its stakeholders as well as balancing their needs
- An understanding of a commitment to ethical decision making

Accreditation

The University of Dayton's business programs including undergraduate, accounting and MBA, are fully accredited by the most rigorous accrediting body for business education programs, AACSB International - the Association to Advance Collegiate Schools of Business.

Transfer Credit

A maximum of six semester hours of appropriate graduate credit earned at another accredited graduate school may be applied toward the post-foundation requirements of the MBA Program at the University of Dayton. This transfer credit may be applied if the student graduates from the UD MBA Program within a maximum of seven years from the date such courses were completed.

In some cases, the credit will have been completed at another university prior to matriculation in the MBA Program. To transfer this credit, a letter of request must be initiated by the student and sent with course descriptions to the MBA Office. Official transcripts must accompany the letter. The request should be initiated during the first term of enrollment. If approved, the credit will be transferred upon completion of nine semester

hours of UD MBA coursework and if the student is in good academic standing.

In other cases, a student, having started the UD MBA Program, will seek to transfer credit from another university to satisfy academic requirements. In these cases, the student must obtain approval for transfer credit for the course(s) prior to enrollment. The catalog descriptions or syllabi of the intended course(s) should be submitted to the MBA Office. Consultation with an MBA advisor is also recommended. After course approval and completion, official transcripts are required. Transfer credit coursework must be of "B" quality or better. Quality points are not transferred.

MBA Multilateral Transfer Agreement

The University of Dayton is a member of a select group of AACSB-accredited AJCU business schools who have jointly agreed to a special transfer arrangement. A student may transfer up to half of the post-Foundation coursework to or from another MBA program at one of these universities. These programs are located in many major cities such as Baltimore, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, Milwaukee, New Orleans, Portland, St. Louis, San Diego, San Francisco, Santa Clara, Scranton, and Spokane. Please contact the MBA Office for more information.

Academic Standards

The faculty of the University of Dayton School of Business Administration is committed to a rigorous learning environment which challenges MBA students to achieve high levels of performance. This environment fosters the development of contemporary business skills and abilities among students.

Theory & Practice in the MBA

Foundation courses present fundamental knowledge about various business functions and provide a solid base for moving to higher-level MBA core classes. *Core and elective* courses expand students' knowledge and enhance their abilities to apply this knowledge. For these latter courses, the faculty use teaching methods that act to advance students' understanding of practical business situations. While students are exposed to the relevant concepts and theory in each course, experiences that complement this material engage students as active participants in the learning process. These may take the form of case analyses, teamwork, business simulations, projects, and consulting experiences with practicing business executives.

Expectations & Evaluation

Grading. The faculty maintains high expectations of students. By creating and maintaining a climate of challenge, faculty help students to demonstrate significant academic achievement. These expectations are shared with students early in each semester and those challenging goals are then reinforced as the term progresses. The faculty then carefully examines student performance in light of these objectives and will use the full range of possible grades below to evaluate that performance. A GPA of 3.0 or higher must be maintained and is the minimum required for graduation. Grading is based on a point system in which corresponding letter and quality points are the following:

- A Excellent (4.000 quality points)
- A- (3.667 quality points)
- B+ (3.333 quality points)

B Average (3.000 quality points)

B- (2.667 quality points)

C Poor (2.000 quality points)

F Failing (0 quality points)

If an "F" grade is received in a Foundation, Core, or Capstone class, the student must repeat the class and earn a passing grade. All retaken classes, including the original attempt, are shown on the student's transcript and in most cases the grades for both the original course and all retake attempt(s) are included in cumulative quality-point average calculations. Consistent with University policy, however, graduate students may retake a single course one time only during the course of their program and exclude the lower grade from the calculation of their cumulative quality-point average, although both attempts will be shown on the transcript. Please refer to the Graduate Retake Policy for more details.

Other Possible Grades Assigned

Withdrawal "W" Grade During the fall and spring terms, a student may withdraw from a full-semester course *without* record during approximately the first three weeks of the term. During the accelerated summer sessions, withdrawal without record may take place during approximately the first two weeks. Thereafter, a student in a full-semester course may withdraw *with* record through approximately the eleventh week of a regular term or the fourth week of a summer session. For half-semester courses, contact the MBA Office

Incomplete "I" Grade A student in good standing in a course may, after the official withdrawal deadline, petition to the professor for an "I" grade. This grade is appropriate only if extraordinary conditions beyond the control of the student have led to an inability to complete course requirements. This must be documented and approved by an instructor who may then assign an "I" grade if a) the reasons presented by the student are deemed acceptable, b) the student has completed a sufficient amount of coursework to justify this grade in anticipation of completion of the work, and c) the professor and student agree to a one-term plan of action for completing the coursework.

In the School of Business Administration, the additional coursework must be completed and graded within one regular (non-summer) academic term from the date listed on the grade report or that "I" grade will automatically change to an "F" on the student's transcript.

Audit "X" Grade The "X" grade indicates that the student has registered to audit the course. No credit hours or quality points are awarded. Any course taken for audit may not be retaken at a later date for credit. Therefore, a course required for graduation may not be audited.

No Grade "N" Grade The "N" grade indicates that no grade was reported by the instructor. Questions should be directed to the instructor.

Academic Probation

A student will be placed on probationary academic status if his or her cumulative grade point average falls below 3.0 (see University Academic Standards Policy). While on probation, a student may not transfer any coursework from another university or college and may not receive financial assistance administered by the School of Business Administration. That student must complete a written academic recovery contract, approved by their graduate program director. This plan will specify goals, expectations, and a timeline for achieving good academic standing. It must also specify the duration of the probationary period, which may not be shorter than one academic semester nor longer than one calendar year.

A student on academic probation will be returned to good academic standing if their cumulative grade point average reaches 3.0 or better at the end of the probationary period. If a student remains below a 3.0 upon completion of the academic probation period, they will be dismissed from the program. Finally, a student who has returned to good academic standing, but whose GPA again falls below 3.0, must complete a plan to return to good standing and have it approved by the program director if they wish to continue in the program. In no circumstances, however, will students be permitted to take more than 9 credits beyond initial degree requirements in order to return to good standing. Likewise, all must be eligible to graduate within the five-year limit for post-foundation credits. Failing this, a student will be dismissed.

Grade Appeals

A grade appeal may be initiated, provided that it is done within 30 calendar days following the end of that academic term in which the grade was assigned and provided further that one of the following three criteria is met:

1. That the grade received appears to be inconsistent with the performance of the work required and recorded for that course;
2. The grade is inconsistent with what has been recorded for the course;
3. The grade received was explicitly determined by criteria other than the stated criteria system for that course.

The appeal process must be initiated by consulting directly with the faculty member involved. No appeal will be further considered if this first step is not followed. If agreement is not reached at that point, however, the appeal may be submitted in writing by the student to the department chairperson(s) with fully supporting facts and documentation for review.

Financial Assistance

Graduate Assistantships

Graduate Assistants work in an academic department in exchange for part or all of their tuition. Graduate Assistants also receive a stipend. A typical Graduate Assistant will work 20 hours a week. If you are interested in applying for a Graduate Assistant position, please contact the MBA Office at (937) 229-3733 or visit the MBA website at <http://business.udayton.edu/mba>. Students must be fully accepted into the MBA program in order to qualify for a possible Graduate Assistantship position.

The usual appointment is for a period of nine months. Renewal may be awarded for a second year, contingent upon satisfactory performance. Assistantships are limited each year; therefore, competition is keen.

Individual Research

Students who have an interest in doing an in-depth study of a particular business topic can elect individual research with the approval of a faculty advisor. Individual research can qualify for one to six semester hours of credit; most studies are three semester hours. Typically, a student may take MBA 695 when 12 core hours (after foundation requirements) have been met.

Approval is obtained by completing a project proposal form, available online or from the MBA Office. A student works with a faculty member to agree on a topic and a project proposal. The faculty advisor and the MBA Director review and approve the proposal prior to registration. The student is expected to maintain close contact with the faculty member

who will provide guidance and evaluation. Individual research projects are to be completed within one term.

Post Master's Business Certification Program

The University of Dayton has designed a unique Post-Master's Business Certificate Program designed to enable business leaders to keep pace with today's changing business demands. The program allows professionals who have already achieved a master's degree in business to further advance their career development by earning a professional graduate certificate in an approved concentration field.

A Post-Master's Business Certificate may be earned in Accounting, Cyber-Security, Finance, or Marketing. In addition, students may choose any three electives to earn a certificate in contemporary topics. To attain a certificate, a student must complete a minimum of nine (9) semester hours of approved graduate elective credit at the University of Dayton in the chosen area of concentration (12.0 semester hours in Accounting). Additional prerequisite credits may be required via academic course work or placement exams if graduate studies were completed more than seven years ago.

Students have three years to fulfill the required credits. Upon completion, a Post-Master's Business Certificate noting professional competency in the chosen academic discipline is issued. For more information on how you may keep your professional skills updated and earn the recognition you are seeking, please contact the UD MBA Office at (937) 229-3733 or visit our website at <http://business.udayton.edu/mba>.

Academic Awards

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.

The Reverend Raymond A. Roesch, S.M., Award of Excellence for outstanding academic achievement is awarded each May to the MBA graduate from the preceding calendar year who, based on the judgment of the faculty, has demonstrated the highest level of academic achievement and contributions in his or her MBA program. The award consists of a plaque which is presented to the student plus an engraved plate displayed in the School of Business.

Programs of Study

To learn more about the available programs in the School of Business Administration, explore the departments in the menu on the right.

Certificate in Cyber-Security

The focus of the coursework is on both management and technical aspects to secure computer information systems and networks. It also focuses on aspects of information warfare that may be relevant to Department of Defense and other government entities, although skill sets acquired in the program are also useful in private industry (in particular for entities who work in defense and government-related industries and as well banks and credit unions, among others).

Curriculum

The Certificate Program is comprised of the following three courses:

MBA 662A	Security Mgt Inf Sys	3
MBA 662B	Man Telecom Net Sys	3
MBA 662C	Internet Security	3

Master of Business Administration (MBA)

MBA Curriculum

The MBA Program is a 30 semester credit hour program for the student with a recent undergraduate degree in business. For the student with a non-business degree, or who lacks coursework in key areas of undergraduate business study, foundation courses are required.

Eleven courses are required of all students consisting of eight Core courses (12 semester hours) and two Capstone courses (6 semester hours). The final required course is entitled "The Principled Organization Integrating Faith, Ethics and Work" (3 semester hours). Additionally, three Elective courses (9 semester hours) are required of all students. Three MBA Elective courses may be chosen in any area.

Foundation Courses

Students who need coursework in basic business knowledge and skills are required to take the appropriate course(s) from the following foundation courses. The Foundation courses consists of a variety of courses up to a maximum of 15 hours. All foundation courses are accelerated, half-semester courses.

A student applying to the MBA program may have foundation courses waived if appropriate undergraduate studies with earned grades of C or better have been completed within seven years. Grades earned from undergraduate coursework will not be calculated in the cumulative MBA grade point average. However, grades earned from MBA foundation courses will be calculated into the cumulative MBA grade point average. When foundation courses are required, they must, when offered, be completed before proceeding to core, elective, or capstone courses. For information on appropriate undergraduate courses to waive foundation requirements, contact the MBA office.

Placement exams, which waive foundation courses, are also available to students who can demonstrate experience or knowledge in a particular area. All placement exams should be taken prior to the second term of enrollment, and are offered at no cost to the student. They can be scheduled by calling the MBA Office at (937) 229-3733.

Core Courses (12 semester hours):

The core portion of the program consists of eight 1.5 credit hour required courses:

MBA 790	Manag Economics	1.5
MBA 791	Mdl&Anal for Bus Dec	1.5
MBA 792	Prf Meas&Ctrl Sys Pr	1.5
MBA 793	Operational Effect	1.5
MBA 794	Info Sys & Bus Dec	1.5
MBA 795	Org Behavior	1.5
MBA 796	Corporate Finance	1.5
MBA 797	Marketing Management	1.5
Total Hours		12

Capstone Courses (6 semester hours):

The Capstone sequence consists of two 3.0 credit hour required courses completed over two semesters:

MBA 798	Strategic Stkhld Mgmt	3
MBA 799	Capstone Integ Pjct	3
Total Hours		6

Required Course: MBA 758

The University of Dayton recognizes the critical significance of Business Ethics and Corporate Social Responsibility in graduate business education. To better equip our students to meet the challenges of ethical decision-making in the workplace and to enable developing solutions that demonstrate corporate social responsibility, a new curriculum emphasis in ethics was introduced Fall 2008. The following course is now required of all MBA students: **MBA 758 The Principled Organization, Integrating, Faith, Ethics And Work Requirement** (3 semester hours):

Elective Courses:

Nine semester hours of elective courses are required. They may be selected to obtain program breadth or depth in a particular area by choosing an optional concentration. The student may choose from among the MBA courses offered, or with approval by the MBA director, students may elect up to six semester hours of graduate courses from other programs at the University when these are appropriate to their education plans.

Electives		9
MBA 602A	Informatn Assurance	
MBA 602B	Fraud Examination	
MBA 603A	Adv Financial Acctg	
MBA 604A	Taxes & Bus Strategy	
MBA 604B	Adv Issues/Taxation	
MBA 605A	Contemp Iss-Acctng	
MBA 605B	International Acctng	
MBA 605C	Internatl Acc-IFRS (UD Students Only)	
MBA 605D	Internatl Acc-IFRS (Non UD Students Only)	
MBA 606A	Fin Stmnt/Rsk Anl	
MBA 607A	Cost Mgt Lean Prn&Apl	
MBA 608A	Acc Informtn Systems	
MBA 609A	SpTopics-Accounting	
MBA 609B	Acc Indiv Research	
MBA 613	JIT & Quality	
MBA 614	Anaylsis-Factry Sys	
MBA 617	Bus Process Improve	
MBA 618	Manufctrng Mgt Rs Sm	
MBA 619	Sp Tp-Operations Mgt	
MBA 621	Fin Deriva&Risk Mgt	
MBA 622	Adv Coporate Fin	
MBA 624	Comm Bank Mgt	
MBA 625	Investmnt&Fin Markts	
MBA 626	Interntl Finance Mgt	
MBA 628	Fixd Income Analysis	
MBA 629	Sp Tp-Finance	
MBA 632	Services Marketing	
MBA 633	Sales Management	
MBA 634	Consumer Behavior	
MBA 635	MKT Analysis & Rsrch	

MBA 636	Multicultl Marketing
MBA 637	Global MKT MGT
MBA 638	Product Planning Dev
MBA 639	Sp Top-Marketing
MBA 646	Intrnl Trd&Bus Appl
MBA 649	Sp Top in Economics
MBA 652	Soc Resp&Eth dm-Mgt
MBA 653	Corp Iss & Survy Pract
MBA 656	Intrnatl Culture&Mgt
MBA 659	ST:Orgn&Their Envirn
MBA 661	E-Commerce
MBA 662A	Security Mgt Inf Sys
MBA 662B	Man Telecom Net Sys
MBA 662C	Internet Security
MBA 663	Mgt-Info Resources
MBA 664	Database Managemnt
MBA 665	Systms Analysis&Dsgn
MBA 667A	Business Intelligence
MBA 667B	Data Warehousing
MBA 668	Adv Website Dev
MBA 669	Sp Top:Mgt Info Sys
MBA 676	International Mgt
MBA 679	Sp Top-Mgt&Org Behv
MBA 680	Entreprshp&Fmly Firm
MBA 682	New Venture Mangmnt
MBA 684	Competitive Analysis
MBA 695	Individual Research

Time Limitation

All coursework, exclusive of foundation courses, must be completed within five calendar years of enrollment.

Program Concentrations

Students may choose their electives to earn a program concentration. Specific concentrations are offered in:

- Accounting
- Cyber Security
- Finance
- Marketing

Selection of an area of concentration is the option of the student; however, it is the responsibility of the student to notify the MBA Office to "declare" the concentration. The area of concentration is noted on the student's transcript. A minimum of nine semester hours of concentration-based elective credit is required for each concentration selected, except for the accounting concentration, which requires 12 semester hours.

Courses

MBA 600A. Financial Accounting. 1.5 Hour

FINANCIAL ACCOUNTING - An introduction to the concepts and procedures underlying financial accounting and the use of financial accounting information for decision making.

MBA 601A. Managerial Accounting. 1.5 Hour

MANAGERIAL ACCOUNTING - An introduction to the concepts underlying the preparation and use of accounting data by managers as they plan, control, and make decisions within the organization. Prerequisite(s): MBA 600A.

MBA 602A. Informatn Assurance. 3 Hours

INFORMATION ASSURANCE - Study of current and emerging auditing and assurance standards and professional developments through case study, readings, and research projects. Prerequisite(s): ACC 401 or permission of instructor.

MBA 602B. Fraud Examination. 3 Hours

FRAUD EXAMINATION - Study of topics related to the detection, investigation, and prevention of accounting fraud within a legal and ethical environment. This course will concentrate on occupational fraud and financial statement fraud. Prerequisite(s): Permission of instructor.

MBA 603A. Adv Financial Acctg. 3 Hours

ADVANCED FINANCIAL ACCOUNTING - Study of consolidated financial statements and accounting for business combinations, government organizations, multinational subsidiaries, and foreign currency transactions. Selected IFRS issues are integrated into the course. Prerequisite(s): ACC 306 with a minimum grade of C or permission of department chairperson.

MBA 604A. Taxes & Bus Strategy. 3 Hours

TAXES & BUSINESS STRATEGY - Primary emphasis is given to developing a framework that articulates how effective tax planning affects business decisions. An advantage of the framework over a strictly rules-based course is that it can be applied to current and future tax regimes, as well as across tax jurisdictions. Significant emphasis is given to understanding how to account for income taxes for financial statement purposes. Although not primarily a rules-based course, application of the effective tax planning framework to cases and problem-solving exercises will increase students' knowledge of U.S. Tax rules and the factors that shape them. Prerequisite(s): MBA 600A and MBA 601A.

MBA 604B. Adv Issues/Taxation. 3 Hours

ADVANCED ISSUES IN ACCOUNTING - Study of the current federal income tax code and its application to individuals and business entities. Emphasis is placed on the technical issues and planning opportunities that businesses face. Prerequisite(s): ACC 420 or permission of instructor; MBA 600A, MBA 601A.

MBA 605A. Contemp Iss-Acctng. 3 Hours

CONTEMPORARY ISSUES IN ACCOUNTING - Seminar covering emerging or controversial accounting issues for the student who has a strong accounting background. Topics include the business and financial situations that underlie accounting problems and controversies, alternative accounting techniques which are accepted or proposed, and the consequences of various accounting practices. Prerequisite(s): ACC 306 or permission of instructor.

MBA 605B. International Acctng. 3 Hours

INTERNATIONAL ACCOUNTING - Study of current topics in international accounting. This course will typically include a week or more of study outside of the U.S. that will include lectures and relevant site visits. In addition to normal tuition, there may be travel and other costs or fees. Foreign locations, countries, topics, and duration may vary. Prerequisite(s): ACC 306 or permission of instructor.

MBA 605C. Internatl Acc-IFRS. 3 Hours

INTERNATIONAL ACCOUNTING-IFRS CERTIFICATE AND RESEARCH - This class includes a comprehensive study of International Financial Reporting Standards (IFRS). Students will complete the Institute of Chartered Accountants in England and Wales' (ICAEW) IFRS learning and assessment program and upon successful completion earn an IFRS certificate from this globally recognized professional accountancy body. Prerequisite(s): ACC 306 or equivalent; permission of instructor. ACC 408 / MBA 603 strongly recommended.

MBA 605D. Internatl Acc-IFRS. 3 Hours

INTERNATIONAL ACCOUNTING-IFRS CERTIFICATE AND RESEARCH - This class is for NON-UD degree seeking students. The class includes a comprehensive study of International Financial Reporting Standards (IFRS). Students will complete the Institute of Chartered Accountants in England and Wales' (ICAEW) IFRS learning and assessment program and upon successful completion earn an IFRS certificate from this globally recognized professional accountancy body. Prerequisite(s): ACC 306 or equivalent; permission of instructor. ACC 408 / MBA 603 strongly recommended.

MBA 606A. Fin Stmt/Rsk Anl. 3 Hours

FINANCIAL STATEMENT/RISK ANALYSIS - Study of the tools and techniques of financial statement analysis with an emphasis on earnings management. Prerequisite(s): ACC 306 or permission of instructor.

MBA 607A. Cost Mgt Lean Prn&Apl. 3 Hours

COST MANAGEMENT LEAN PRINCIPLE & APPLICATION - The design and use of performance measurement and control systems from an integrated systems view of an organization. An important aspect of the course is to 'think out of the box' in terms of how to design more flexible and adaptive cost management and performance measurement systems to help organizations become more flexible and responsive in meeting customer needs. Performance measurement and control are discussed in light of an integrated systems view of an organization, the principles of the Toyota Way, the Toyota Production System, and Lean Accounting. Prerequisite(s): ACC 303 and MBA 692. Or permission of instructor.

MBA 608A. Acc Informtn Systems. 3 Hours

ACCOUNTING INFORMATION SYSTEMS - Study of accounting information systems and their impact on management decision making and control. Emphasis on the systems approach to the collection and reporting of accounting data, system internal controls, and computer applications for managerial and financial accounting. Prerequisite(s): (ACC 341; MBA 660) or permission of instructor.

MBA 609A. SpTopics-Accounting. 3 Hours

SPECIAL TOPICS IN ACCOUNTING - Advanced and current topics in accounting. Topics vary. Prerequisite(s): Permission of instructor.

MBA 609B. Acc Indiv Research. 1-6 Hours

INDIVIDUAL RESEARCH IN ACCOUNTING - Individual research in accounting subjects under the guidance and direction of an accounting faculty member. A formal proposal must be completed and approved by the faculty member, Department Chair, and MBA Director prior to registration. Prerequisite(s): Permission of instructor; strong academic and/or professional background in accounting.

MBA 611. Stat Anly Bus Dcsn. 1.5 Hour

STATISTICAL TECHNIQUE FOR DECISION ANALYSIS - An introduction to methods that are central in generating information for decision analysis. Topics include hypothesis testing, regression analysis, and experimental design. Prerequisite(s): MBA 610.

MBA 612. Mfg/Service Systems. 1.5 Hour

MANUFACTURING & SERVICE SYSTEMS - An introduction to both traditional and modern manufacturing and service systems, including operating philosophies that drive these systems and the important tools and techniques used therein. Prerequisite(s): MBA 610 and MBA 611.

MBA 613. JIT & Quality. 3 Hours

JIT & QUALITY IN MANUFACTURING & SERVICES - Study of the concepts and techniques of just-in-time manufacturing, total quality systems, and statistical process control. Projects, tours, and guest speakers. Prerequisite(s): MBA 692.

MBA 614. Anlysis-Factry Sys. 3 Hours

ANALYSIS OF FACTORY SYSTEMS - Study of the concepts and techniques of analysis, design, and management of factory production systems. Work-flow layout, scheduling techniques, stochastic process models, simulations and computerized factory models. (May not be taken for credit if MBA 669 "Decision Support Systems" has been completed.) Prerequisite(s): MBA 610, MBA 611, MBA 612, MBA 691.

MBA 617. Bus Process Improve. 3 Hours

BUSINESS PROCESS IMPROVEMENTS - Study of the concepts and techniques of business process analysis and improvements as building blocks for all operations improvement strategies, using a range of tools from simple process-mapping to computer-based process-modeling. Balancing technical/analytical and organizational/behavioral aspects of business process improvements are highlighted. The class will include a business process analysis/improvement project using a process modeling software. Prerequisite(s): MBA 610, 611 and 612.

MBA 618. Manufctrng Mgt Rs Sm. 3 Hours

MANUFACTURING MANAGEMENT RESEARCH SEMINAR - Individual research effort in conjunction with a faculty member. The seminar will meet several times during the term for research progress presentations. Prerequisite(s): One OPM elective.

MBA 619. Sp Tp-Operations Mgt. 3 Hours

SPECIAL TOPICS IN OPERATION MANAGEMENT - Advanced or special topics in the analysis, design, operation, and maintenance of manufacturing and service systems. Topics vary. Prerequisite(s): Permission of instructor.

MBA 619A. Methods. 3 Hours

METHODS - Methods.

MBA 620. Financial Anlys&Mark. 3 Hours

FINANCIAL ANALYSIS & MARKETS - An overview of finance to include the analysis of financial statements, valuation concepts, capital budgeting techniques, capital structure analysis, working capital management, and capital market financing instruments. Prerequisite(s): MBA 600A.

MBA 620A. Prin of Corp Fin Mgt. 1.5 Hour

PRINCIPLES OF CORPORATE FINANCIAL MANAGEMENT - Principles of corporate financial management.

MBA 620B. Prn Crp Invnt&Ast Mgt. 1.5 Hour

PRINCIPLES OF CORPORATE INVESTMENT AND MANAGEMENT - Principles of corporate investment.

MBA 621. Fin Deriva&Risk Mgt. 3 Hours

FINANCIAL DERIVATIVES & RISK MANAGEMENT - This course provides a theoretical foundation for the pricing of contingent claims and for designing risk-management strategies. It covers option pricing models, hedging techniques, and trading strategies. It also includes portfolio insurance, value-at-risk measure, multistep binomial trees to value American options, interest rate options, and other exotic options. Prerequisite(s): FIN 480 or permission of instructor.

MBA 622. Adv Coporate Fin. 3 Hours

ADVANCED CORPORATE FINANCE - This course is focused upon interesting corporate finance issues addressing short term financial management, long term capital budgeting, and long term financing choices. The course requires that the students understand these issues through a series of cases and projects. A significant amount of spreadsheet modeling together with both individual and group work will be required to examine the cases and projects. Prerequisite(s): MBA 620.

MBA 623. Computational Finance. 3 Hours

COMPUTATIONAL FINANCE - The purpose of this course is to introduce students to numerical methods and various financial problems that include portfolio optimization and derivatives valuation that can be tackled by numerical methods. Students will learn the basics of numerical analysis, optimization methods, monte carlo simulations and finite difference methods for solving PDEs. Prerequisite(s): MBA 620; permission of instructor.

MBA 624. Comm Bank Mgt. 3 Hours

COMMERCIAL BANK MANAGEMENT - Explores the environment in which banks must operate, the financial statements of banks, and a thorough study of bank management topics, including asset-liability management, the investment portfolio, sources of funds, and the loan portfolio. Prerequisite(s): MBA 620.

MBA 625. Investmnt&Fin Markts. 3 Hours

INTERNATIONAL FINANCE MANAGEMENT - 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(s): MBA 620.

MBA 626. Interntl Finance Mgt. 3 Hours

INTERNATIONAL FINANCE MANAGEMENT - Integrates the international monetary environment with the multinational business firm and its operations. Analyzes the 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(s): MBA 620.

MBA 628. Fixed Income Analysis. 3 Hours

FIXED INCOME ANALYSIS - This class will expose students to a variety of fixed income instruments that are traded in the financial markets, their investment characteristics, the state-of-art technology for valuing them, technique for quantifying their interest rate risk, and portfolio strategies for using them. Great course for CFA candidates, Fund Managers, Credit Risk Managers, Commercial Bankers and anyone interested in investing in fixed income securities as alternatives to stocks. Prerequisite(s): MBA 610, 611, 620.

MBA 629. Sp Tp-Finance. 3 Hours

SPECIAL TOPICS IN FINANCE - In-depth application of financial principles to selected areas. Topics vary. Emphasis may be on working capital management, capital budgeting, applied portfolio management, mergers and acquisitions, corporate restructuring, or selected topics. Prerequisite(s): Permission of instructor.

MBA 629A. ST: Valuation. 3 Hours

VALUATION - Valuation.

MBA 629B. ST: Enrgy Porfl Mgt. 3 Hours

ENERGY PORTFOLIO MANAGEMENT - Energy portfolio management.

MBA 630. Marketing Essentials. 1.5 Hour

MARKETING ESSENTIALS - Fundamentals of marketing, including macro and micro concepts that affect marketing management. An introduction to marketing terminology, definitions, theories, concepts, and practices. Emphasis on decision variables used by marketing managers, both at the domestic and global level.

MBA 632. Services Marketing. 3 Hours

SERVICIES MARKETING - The course is designed to focus on marketing opportunities, challenges, methods, strategies, and other aspects of marketing that are unique to services oriented businesses. The course emphasizes the environmental approach to services marketing. The students are introduced to the basic concepts of services marketing. The course material focuses on environment and on the modifications of marketing theory and its applications in the services marketing organizations. Prerequisite(s): MBA 630.

MBA 633. Sales Management. 3 Hours

SALES MANAGEMENT - Study of the basic principles and practices of sales management. Rather than viewing sales management as containing separate functions and activities, (such as staffing, training, motivation), this course views them as having systemic relationships with each other. All functions and activities will be viewed as a dynamic process, composed of numerous interrelated parts; all aimed at helping the organization reach its sales objectives. Analyzes the structure of the sales organization, determination of sales policies, selection, training, and motivation of salesperson, and establishing sales territories, and quotas. Prerequisite(s): MBA 630.

MBA 634. Consumer Behavior. 3 Hours

CONSUMER BEHAVIOR - Consumer Behavior is the study of those actions directly involved in obtaining, consuming, and disposing of products and services, including the decision processes that precede and follow these actions. Consumer behavior is of particular interest to those who, for various reasons, desire to influence or change that behavior, including those whose primary concern is marketing, consumer education and protection, and public policy. Consumer behavior is studied within the context of marketing strategy, and market segmentation. Prerequisite(s): MBA 630.

MBA 635. MKT Analysis & Rsrch. 3 Hours

MARKET ANALYSIS & RESEARCH - The purpose of marketing research is to provide decision makers with useful consumer and customer information to reduce uncertainty about alternative courses of business action, and aid in marketing management decision making and planning. To make the wisest decisions and accomplish the best, this course focuses on showing decision makers how to effectively use information provided by marketing research. Prerequisite(s): MBA 611, MBA 630.

MBA 636. Multicultl Marketing. 3 Hours

MULTICULTURAL MARKETING - The course is designed to introduce students to the basic concepts and theories of multicultural marketing. The main goals of this course are for students to acquire a basic understanding of the elements of other cultures, to be aware of cultural differences, and to get students to appreciate the importance of cultural adaptation in the marketing program, especially as they relate to the development of marketing systems. Prerequisite(s): MBA 630.

MBA 637. Global MKT MGT. 3 Hours

GLOBAL MARKET MANAGEMENT - Integration of concepts, theories, and analytical procedures associated with market analysis of global markets. This course provides a managerial and strategic perspective on global marketing. It is designed to assist students in developing appropriate business skills and making marketing management decisions in the global context. Prerequisite(s): MBA 630.

MBA 638. Product Planning Dev. 3 Hours

PRODUCT PLANNING DEVELOPMENT - Integration of various product management processes and concepts as customer-focused problem solving. Using projects or simulations, provides an opportunity to practice skills in developing and introducing a new product in a competitive environment. Emphasis on how various techniques can be interpreted to answer questions about performance. Prerequisite(s): MBA 630.

MBA 639. Sp Top-Marketing. 3 Hours

SPECIAL TOPICS IN MARKETING - Advanced and current topics in marketing, such as product management, consumer behavior, services marketing, sales, and advertising. Prerequisite(s): Permission of instructor.

MBA 639A. ST:Mkt Intelligence. 3 Hours

MARKETING INTELLIGENCE - Marketing intelligence.

MBA 639B. Spec Top:Digital Mkt. 3 Hours

SPECIAL TOPICS: DIGITAL MARKETING - Special topic on digital marketing.

MBA 640. Prin of Economics. 1.5 Hour

PRINCIPLES OF ECONOMICS - Basic microeconomic principles and their applications. Topics include consumer behavior, production theory, and the interaction of buyers and sellers in various kinds of markets.

MBA 646. Intrnl Trd&Bus Appl. 3 Hours

INTERNATIONAL TRADE & BUSINESS APPLICATIONS - This course introduces a comprehensive and up to date exposition of the theories and applications of international trade that are essential for understanding and suggesting solutions to the important contemporary international trade problems facing firms and managers. Topics cover comparative advantage, gains from trade, imperfect competition and international trade, trade and economic growth, trade policies, economic integration, resource movements and multinational corporations. Prerequisite(s): MBA 640, MBA 641.

MBA 649. Sp Top in Economics. 3 Hours

SPECIAL TOPICS IN ECONOMICS - Advanced and current topics in economics. Topics vary. Prerequisite(s): Permission of instructor.

MBA 652. Soc Resp&Eth dm-Mgt. 3 Hours

SOCIAL RESPONSIBILITY & ETHICAL DIMENSIONS OF MANAGEMENT - Study of ethical responsibility in the business setting. Topics include the relationship of management to society, ethical issues in management, the virtues of leaders, strategic management for social responsiveness, management styles in the global marketplace, and the stakeholder management concept. Prerequisite(s): MBA 670.

MBA 653. Corp Iss & Survy Pract. 3 Hours

CORPORATE ISSUES & SURVEY PRACTICUM - An overview of management concepts, principles, and functionality as practiced by major corporations. Each student has the opportunity to develop an innovative alternative to a current issue related to corporate finance, marketing, and/or management. Includes presentations by a team of corporate executives. Prerequisite(s): Completion of all foundation courses.

MBA 656. Intrnatl Culture&Mgt. 3 Hours

INTERNATIONAL CULTURE & MANAGEMENT (STUDY ABROAD) - Study of international culture and business operations. This course will typically include a week or more of study outside of the U.S. that will include lectures and relevant site visits. In addition to normal tuition, there will be travel and other expenses. Locations, countries, and topics may vary. Prerequisite(s): Completion of all foundation courses or permission of faculty member.

MBA 659. ST:Orgn&Their Envirn. 3 Hours

SPECIAL TOPICS - ORGANIZATIONS AND THEIR ENVIRONMENTS - Advanced and current topics in organizations and their environments. Topics vary. Prerequisite(s): Permission of instructor.

MBA 660. Informtn Tech&Systems. 1.5 Hour

INFORMATION TECHNOLOGY & SYSTEMS - An introduction to the basic technology underlying information systems and to the concepts and techniques needed to analyze, design, and manage those systems.

MBA 661. E-Commerce. 3 Hours

E-COMMERCE - This course provides an understanding of the information technologies that enable business-to-business and business-to-consumer electronic commerce while focusing on the strategic, operational, management, and societal issues associated with such technology-based commerce. Business cases, experiential exercises, and guest speakers are utilized. This is a required course for the Technology-Enhanced Business/E-Commerce (TEB) concentration. Prerequisite(s): MBA 660.

MBA 662A. Security Mgt Inf Sys. 3 Hours

SECURITY MANAGEMENT FOR INFORMATIONAL SYSTEMS - Addresses issues relevant to creating and managing a systematic security process in organizations. Information security policy, assets, physical and logical information resource security, business continuity, and compliance with relevant security standards are covered. Prerequisite(s): MBA 660 or equivalent.

MBA 662B. Man Telecom Net Sys. 3 Hours

MANAGING TELECOMMUNICATION & NETWORK SYSTEMS - Introduction to management of computer-based communication networks. Includes underlying concepts; basic hardware components and operating systems; network architectures and protocols; data integrity and security; message routing; network resource management. Prerequisite(s): MBA 662A or instructor permission; U.S. Department of Defense Interim Secret Clearance or higher.

MBA 662C. Internet Security. 3 Hours

MANAGING INTERNET SECURITY - This course provides managers with an understanding of both defensive and offensive issues surrounding the security of computer-based information networks. The course includes instruction on theory about information security, psychological operations, hacking, viruses, and network systems management, and security for e-commerce on the Internet. Prerequisite(s): MBA 662B; U.S. Department of Defense Interim Secret Clearance or higher.

MBA 663. Mgt-Info Resources. 3 Hours

MANAGEMENT OF INFORMATION RESOURCES - Study of the strategic and management issues associated with the effective organizational use of information technology. Role of the chief information officer; strategic planning, impacts and alliances; information technology assimilation; information technology architectures, functional organization, and operational control; information systems project management. Cases and readings. Prerequisite(s): MBA 660. MBA 693 recommended.

MBA 664. Database Managemnt. 3 Hours

DATABASE MANAGEMENT - Introduction to databases and their management. File organization and data structures; database management systems; major data models; conceptual, logical, and physical database design; data definition and manipulation with SQL; data administration; and client/server and distributed databases. SQL-based software tool for database project. Prerequisite(s): MBA 660.

MBA 665. Systms Analysis&Dsgn. 3 Hours

SYSTEM ANALYSIS & DESIGN - Introduction to object-oriented concepts and techniques for analyzing and designing systems. Activities performed and models created during the different phases of the development life cycle. Systems development project using a CASE tool. Prerequisite(s): MBA 660.

MBA 667A. Business Intelligence. 3 Hours

BUSINESS INTELLIGENCE - This course is about developing a program for Business Intelligence in an organization. Will cover the framework, concepts, methods, people skills, and technologies necessary for making effective decisions fast. Also addresses issues from the capture of facts to the delivery of information and decision support systems, including data quality, data warehousing, business intelligence success factors and impact on organizations, business performance management (dashboards and scorecards), multi-dimensional data analysis and online analytic processing, data visualization, and applications of Business Intelligence. Prerequisite(s): MBA 610, MBA 611, MBA 660, and some SQL query language.

MBA 667B. Data Warehousing. 3 Hours

DATA WAREHOUSING - This course will emphasize the purpose, design, implementation, and effective use of data warehouses and data warehousing technologies. Various schemas for the design of a data warehouse, modeling time in a data warehouse, data quality management for building a data warehouse from operational data stores and legacy applications, and technologies to populate and retrieve information from data warehouses will be covered. Related topics of data marts, analytical processing, data mining, and active data warehousing will also be addressed. Prerequisite(s): MBA 660. MBA 664 also required unless student has database management coursework or relevant database management experience.

MBA 668. Adv Website Dev. 3 Hours

ADVANCED WEBSITE DEVELOPMENT - This course covers issues involved in developing Web sites for business usage. Issues covered or investigated include: site layout, implementation and management, good site design practices, connecting Web sites to company data, and processing secure transactions across the Web. Prerequisite(s): HTML and a high-level programming language required.

MBA 669. Sp Top:Mgt Info Sys. 3 Hours

SPECIAL TOPICS IN MANAGEMENT INFORMATION SYSTEMS - Advanced and current topics in management information systems. Topics vary. Prerequisite(s): Permission of instructor.

MBA 670. Prin of Org Behvr. 1.5 Hour

ORGANIZATIONAL THEORY & BEHAVIOR - An introduction to management topics conceptualized at the organization and subunit levels of analysis with primary focus on how organizations generate capacities for change in response to their environments. Emphasis on organizational design as a means of adaptation.

MBA 676. International Mgt. 3 Hours

INTERNATIONAL MANAGEMENT - This course focuses on international aspects of organizational behavior, human resource management, labor relations, corporate strategy, and ethical issues and revolves around three objectives: examining the applicability of theory and research in the international management area; surveying topical issues in international management; and developing students' international management skills. Prerequisite(s): MBA 670.

MBA 679. Sp Top-Mgt&Org Behv. 3 Hours

SPECIAL TOPICS IN MANAGEMENT & ENTREPRENEURSHIP - Analysis and interpretation of research studies as applied to management and entrepreneurship. Coverage of issues such as leadership, interpersonal conflict resolution, competitive analysis, new venture issues, resistance to change, managerial development, organizational growth, effects of technology, and emergence of new control systems. Role playing, small group exercises and applications. Prerequisite(s): Permission of instructor.

MBA 680. Entreprshp&Fmly Firm. 3 Hours

ENTREPRENEURSHIP & THE FAMILY FIRM - Covers phases in the life span of the owner-managed enterprise and ending with succession to a next generation of management through any of a variety of means. Major topic areas include startup issues, business planning, financing, marketing, managing the growing firm, and succession in a family business context. Prerequisite(s): Completion of all foundation courses.

MBA 682. New Venture Mangmnt. 3 Hours

NEW VENTURE MANAGEMENT - Study of entrepreneurship and development of opportunities in new or renewed businesses. Focus is on identifying and analyzing business opportunities, locating and obtaining venture capital, developing a business plan, managing growth in the enterprise, and the decision-making, risk-taking, and leadership styles of entrepreneurs. Prerequisite(s): MBA 620 and MBA 630.

MBA 684. Competitive Analysis. 3 Hours

COMPETITIVE ANALYSIS - An in-depth exposure to the theory and tools of competitive analysis and provide practice in their application. Learn to use various models and analysis tools for interpreting tactical and strategic implications of evolutionary and revolutionary shifts in competitive environments, including entrepreneurial and international situations.

MBA 695. Individual Research. 1-6 Hours

INDIVIDUAL RESEARCH - Individual research in subjects encompassed by the MBA curriculum under the guidance and direction of a faculty member. Research may be undertaken on completion of 12 hours of post-foundation coursework. A formal proposal must be completed and approved by the faculty advisor and the MBA Director prior to registration. Prerequisite(s): Permission of faculty advisor and MBA Director.

MBA 699. Capstone Inegrtv Prj. 3 Hours

CAPSTONE INTEGRATIVE PROJECT - Second of the two-course set of capstone integrative experiences that explores the process of creating, sustaining, and growing successful businesses in an era of change. Students work in teams to analyze the strategic environment of a firm and develop a series of recommended actions. Students gain experience in working in a team environment in a non-academic setting, and experience the pressure of delivering a high-quality product to company leaders. The approach taken is tailored to the specific needs of the business as well as the talents of the particular student team. Prerequisite(s): MBA 698 and completion of the four core courses. Or permission from MBA Office.

MBA 758. Principled Organization. 3 Hours

PRINCIPLED ORGANIZATION: INTEGRATING FAITH, ETHICS, AND WORK - Students draw on our Catholic Social Teaching and Marianist Heritage to explore issues related to the role of business as a high calling, a critical profession for the good of society and its citizens. Besides the importance of contributing and acting ethically, we delve into the benefit of integrating these values with current issues in business and its relationship to society. To do so extensive conversations with active business people and reflections on relevance of ideas discussed to personal goals and beliefs are central to the course.

MBA 790. Manag Economics. 1.5 Hour

MANAGERIAL ECONOMICS - Application of economic models to managerial decision making. Topics include basic estimation techniques, demand analysis and forecasting, production and cost estimation, profit maximization in competitive markets and in markets where firms have market power, and game theory basics with attention to strategic decision-making in oligopoly market and duopoly models.

MBA 791. Mdl&Anal for Bus Dec. 1.5 Hour

MODELING AND ANALYSIS FOR BUSINESS ANALYTICS - This course examines the role of analytic thinking and analytic models/techniques in providing support and insight for business decisions. An overall framework for quantitative analysis within business decision-making is presented. Both optimization and descriptive modeling are studied. Analysis techniques such as linear programming, integer and nonlinear optimization, and simulation modeling are covered. The course will emphasize the application of analytic techniques to business decisions with cases and executive partners from the business community. Prerequisite(s): MBA 611.

MBA 792. Prf Meas&Ctrl Sys Pr. 1.5 Hour

PERFORMANCE MEASUREMENT AND CONTROL SYSTEMS PERSPECTIVE - This core MBA course addresses the important cost management and measurement issues relevant to any organization. The competitive and rapidly changing environment faced by most organizations has rendered most traditional cost management, accounting control systems, and methods of performance measurement and analysis ineffective and in some cases even dysfunctional. Prerequisite(s): MBA 600A, MBA 601A.

MBA 793. Operational Effect. 1.5 Hour

OPERATIONAL EFFECTIVENESS - Operational effectiveness is a multidimensional concept that industry has approached in a variety of ways. This course focuses on the underlying principles that drive operational improvements. These principles are used as a basis to develop skills in identifying improvement opportunities, analytical tools to quantify the problem and solution set, and quantitative and policy approaches to maintaining performance once improved. Prerequisite(s): MBA 612.

MBA 794. Info Sys & Bus Dec. 1.5 Hour

INFORMATION SYSTEMS AND TECHNOLOGY MANAGEMENT - Information is a key organizational asset. Information systems and technology are pervasive in organizations with the goal of enabling efficiency, effectiveness, and adaptability. Through the analysis of case studies, this course covers what general managers need to know: 1) to make decisions about information systems to achieve organizational goals and 2) to fulfill their role in managing information assets in organizations. It emphasizes the role of information and technology in organizational decision-making. Prerequisite(s): MBA 660.

MBA 795. Org Behavior. 1.5 Hour

ORGANIZATIONAL BEHAVIOR - The Organizational Behavior course focuses on what makes a workplace effective, efficient, positive, and pleasant. Topics covered include how people make decisions, how employees work together, and how employers can manage employees for maximum productivity. Students will learn about employee compensation and motivation, team dynamics, and what makes a good leader. Students will also learn how norms, values, incentives, and rewards shape behavior in organizations. The course also includes topics such as organizational behavior in the world of the internet, and how the globalization of business impacts communication within an organization. Organizational Behavior is interdisciplinary, involving the fields of psychology, sociology, gender studies, labor economics, business, human resources, management, and many others. As such, the course will study theories in many interdisciplinary fields. Ultimately, the course focuses on how managers become effective leaders by addressing the human side of enterprise. Prerequisite(s): MBA 670.

MBA 796. Corporate Finance. 1.5 Hour

CORPORATE FINANCE - Advanced discussion of financial markets, models, cost of capital computations, valuing real assets, capital budgeting, raising capital, incentives and corporate control, and risk management. Prerequisite(s): MBA 620A and MBA 620B.

MBA 797. Marketing Management. 1.5 Hour

MARKETING MANAGEMENT - Effective marketing is a customer-focused process that pervades an organization. This course focuses on strategic decision making and explores marketing opportunities through product development, pricing strategies, customer communications and channel management. Students learn how to assess business opportunities, research a market, segment markets, and position a firm's offerings in order to create long-term customer and shareholder value. Prerequisite(s): MBA 630.

MBA 798. Strategic Stkhld Mgmt. 3 Hours

BUSINESS STRATEGY - First of a two-course set of capstone integrative experiences which explores the process of creating, sustaining, and growing successful businesses in an era of change. The course deals with strategic decision making and stakeholder management related to competitive, economic, political, social, cultural, and technological environments in small, medium, and large companies in service and manufacturing settings. Prerequisite(s): MBA 790, MBA 791, MBA 792, MBA 793, MBA 794, MBA 795, MBA 796, MBA 797.

MBA 799. Capstone Integ Pjct. 3 Hours

INTEGRATIVE PROJECT - Second of the two-course set of capstone integrative experiences that explores the process of creating, sustaining, and growing successful businesses in an era of change. Students work in teams to analyze the strategic environment of a firm and develop a series of recommended actions. Students gain experience in working in a team environment in a non-academic setting, and experience the pressure of delivering a high-quality product to company leaders. The approach taken is tailored to the specific needs of the business as well as the talents of the particular student team. Prerequisite(s): MBA 798 and completion of all eight core courses, or permission of MBA Office.

School of Education and Allied Professions

Kevin R. Kelly, Dean

Kathryn Kinnucan-Welsch, Associate Dean for Undergraduate Learning and Community Partnerships

Barbara De Luca, Associate Dean for Graduate Education and Research

Jayne Brahler, Interim Associate Dean for Graduate Health Programs

The basic mission of the graduate programs in the School of Education & Allied Professions (SOEAP) is to prepare competent and compassionate professionals in several fields. Specifically, the mission is to prepare teachers and administrative leaders, exercise scientists, and human service specialists. The School is further committed to preparing scholar-practitioners at the Ph.D. level in the area of educational leadership. The SOEAP programs leading to graduate degrees are designed primarily to meet the following purposes:

1. To develop advanced proficiency in early, middle, and secondary school teachers who have completed recognized baccalaureate teacher education programs.
2. To enable individuals to qualify for licensure as principals and superintendents.
3. To prepare school counselors; school psychologists who will be working in state, county, local school systems; and counselors who will work in community and other agency settings to be highly competent and exemplary in their chosen profession.
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 licensure.
7. To prepare leaders in Allied Profession fields such as Exercise Science and Physical Therapy.

In implementing these graduate programs, faculty members are committed to help students:

- understand the knowledge base that integrates their field of interest
- apply their knowledge base to practice
- value the relationship of theory to practice
- reflect mindfully upon professional practice
- value community and collaboration
- appreciate the moral dimensions of their work
- commit themselves to improving the quality of life within schools and the larger community

In working to address the mission, faculty and staff members in all departments endeavor to:

- create a supportive environment for learning
- respond to individual students' program needs
- draw upon the knowledge base of their field in providing quality instruction
- maintain high academic standards
- provide students the opportunity to choose a research or a practice emphasis in their academic program
- contribute to the knowledge base of their field
- assist the community in translating the knowledge base of their field to everyday practice

- serve as responsible social critics
- demonstrate collaborative teaching and inquiry behaviors
- engage in professional activity focused on the improvement of school and community life

Most graduate programs lead to the Master of Science in Education and Allied Professions degree. Other degree programs include the Educational Specialist degree and the Ph.D. in Educational Leadership.

Authorization

The University of Dayton's Graduate offerings leading to the Master of Science in Education and Allied Professions degree have the "official" approval of the State of Ohio Department of Education and of the National Council for the Accreditation of Teacher Education, and of the North Central Association.

General Requirements

Transcript Evaluations for Licensure

Teacher Education License - Prospective students wishing to have transcripts evaluated for a teaching license, endorsement, or validation program need to submit the Transcript Evaluation Form [Transcript_Eval_Request.doc](https://catalog.udayton.edu/graduate/schoolofeducationandalliedprofessions/generalrequirements/Transcript_Eval_Request.doc) (catalog.udayton.edu/graduate/schoolofeducationandalliedprofessions/generalrequirements/Transcript_Eval_Request.doc) along with a copy of all transcripts. After students have received a completed transcript evaluation, students can make an appointment with the advisor. For further information, please contact the Transcript Evaluation Coordinator, Ms. Martha L Meyer at: meyermal@notes.udayton.edu.

School Counseling License - Prospective students wishing to earn a school counseling license need to contact Ms. Gina Seiter at the following address: gina.seiter@notes.udayton.edu.

School Administrator License - Prospective students wishing to earn a school administrator license need to contact Ms. Gina Seiter at the following address: gina.seiter@notes.udayton.edu.

Academic Standing

To qualify for graduation, a student must maintain a grade point average of at least 3.0 (B) in all work undertaken toward the degree.

Employed Graduate Students

The maximum course load permitted for any graduate student who is fully employed is six semester hours for the first and second terms and for the first half of the third term. Adjustments to this policy are made on an individual basis in the case of applicants who are not employed or employed part-time.

Workshop Credit

No more than six semester hours of workshop credit may be applied toward a degree; assuming the course work is appropriate to the program.

Registration Dates For Courses At Off-Campus Sites

Students taking graduate courses at off-campus sites 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.

"I" and "IP" Grades

The "I" (incomplete) grade may stand for a period of no more than one year from the end of the term in which the grade was assigned. If the

grade is unchanged after one year, it becomes an "F" and the student must re-register to re-take the course.

The "IP" (in progress) grade is used in lieu of a grade for courses which have not terminated at the end of a semester.

Assistantships

The School of Education & Allied Professions offers a limited number of assistantships. For information about these assistantships, call Julie Slife, Graduate Assistantship Program Coordinator at #937-229-3348 or email: jslife1@udayton.edu.

Office of Educational Services

The Office of Educational Services provides assistance to Catholic schools, public school districts, and other educational providers to enable school personnel to reach policy decisions based on relevant knowledge and value commitments. "Relevant knowledge" includes financial studies, needs assessments, attitude surveys, enrollment projections, and other information necessary for making intelligent decisions about specific policies. "Value commitments" include consideration of educational aims and ethical questions inherent in policy decisions. One of the priorities of the office is service to Catholic schools. Another is its effort to act as a network to link those who share/value concerns as they relate to educational policy-making. The office is located in, draws support from, and uses the resources of the School of Education and Allied Professions. For more information contact Dr. C. Daniel Raisch, Director, Office of Educational Services at craisch1@udayton.edu.

Programs of Study

To learn more about the available programs in the School of Education and Allied Professions, explore the departments in the menu on the right.

Counselor Education and Human Services

- Master of Science in Education and Education Specialist, School Psychology
- Master of Science in Education, College Student Personnel
- Master of Science in Education, Clinical Mental Health Counseling
- Master of Science in Education, Higher Education Administration
- Master of Science in Education, Human Services
- Master of Science in Education, School Counseling
- Certificate, Pastoral Counseling for Enhancement

FACULTY

Molly A. Schaller, Ph.D., Chairperson
 Kelli Jo Arndt, Ph.D.
 Elana Bernstein, Ph.D.
 Susan Davies, Ed.D.
 Alan Demmitt, Ph.D.
 Alexandra Hall, Ph.D.
 Scott E. Hall, Ph.D.
 Eugene K. Moulin, Ph.D.
 Patricia J. Polanski, Ph.D.
 Michele M. Welkener, Ph.D.

The goals of the Department of Counselor Education and Human Services are:

1. To prepare elementary and secondary school counselors; student service personnel in higher education; school psychologists; and counselors for community, mental health and other agency settings to reflect the human service practitioner as a facilitator of individual and community growth.
2. To provide teachers and other helping professionals with specific course offerings designed to build skills and develop understanding relative to identified professional functions within the learning communities. These two missions are conducted at the University of Dayton campus, Columbus, and other sites as approved.

The department offers six programs at the graduate level:

1. College Student Personnel
2. Clinical Mental Health Counseling
3. Higher Education Administration
4. Human Services
5. School Counseling
6. School Psychology

In addition, selected courses in behavioral and social science and other related disciplines lead to certification/licensure as a school counselor or school psychologist, as well as to Professional Counselor licensure and Professional Clinical Counselor licensure for social agency personnel. True to Marianist ideals, the faculty are committed to developing the human service practitioner as a skilled facilitator of individual and community growth and as a person knowledgeable of self and children, and youth and adults from varying socioeconomic backgrounds.

Master of Science IN EDUCATION (M.S.E.) and Educational Specialist (Ed.S.) in School Psychology (ESP)

The purpose of the NASP-approved school psychology program is to train school psychologists to assist educators and parents in problem-solving efforts to meet the educational and mental health needs of children and youth in Ohio schools. The program prepares school psychology practitioners to use intervention-based consultation and assessment approaches in the specialist-level training.

Program and licensure standards require completion of both the master's degree and specialist-level training. Students pursue studies leading first to a master's degree and then to an educational specialist degree. The degree programs are not offered separately. The full-time program includes two years of full-time study followed by a ten-month, full-time supervised internship. The part-time track includes three years of part-time study followed by a ten-month, full-time supervised internship. Students on both tracks complete a master's degree in the course of their program and an educational specialist degree at the conclusion of their program.

General Requirements

Master of Science (30 semester hours)

1. Successful completion of specified 30 semester hours
2. Successful completion of practica
3. Successful completion of comprehensive examination

Ohio Licensure and Completion of Specialist-Level Training (52 semester hours; 82 semester hours total with completion of master's program)

1. Successful completion of specified 52 semester hours.
2. Successful completion of internship
3. Successful completion of thesis
4. Development, presentation and approval of professional portfolio

School Psychology

EDC 508	Thr Lrng/Hum Dev	3
EDC 510	Consultation-Schools	3
EDC 511	Prac: Consultation	1
EDC 512	Cognitiv Assm/Interv	1-6
EDC 513	Prac: Cog Assmt/Intr	1
EDC 514	Acad Assess/Intervn	3
EDC 515	Prac:Acad Assess/Int	1-6
EDC 516	Acad/Behav Asses Ins	1-6
EDC 517	Sch Psy Prac: Shdwng	1-6
EDC 537	Statistics	3-4
EDC 538	Chld/Adl Psychothry	3
EDC 541	Curr Ins/Div Lrnrs	3
EDC 542	Crisis Intervn/Prev	2
EDC 543	Theories&Technq-Coun	3
EDC 548	Cns Cldrn&Adlsnts	2
EDC 568	Research/Eval/HS	3
EDC 571	Biol Bases Behav	1-3
EDC 572	Role&Func-Sch Psych	3
EDC 573	Orient-The Edu Proc	1
EDC 575	Coun Diverse Pop	3
EDC 583	Thr&Tchnq-Grp Couns	3
EDC 593	Erly Chldhd Dev & As	3
EDC 610	Social&Behav As Intr	3
EDC 611	Prac Social&Beh AF	1
EDC 612	Asses-Intr&Accblty	3
EDC 613	Prac:Assess/Intr/Acc	1-6
EDC 615	Sch Psy Culmin Sem	3
EDC 710	Intern: Sch Psych	1-5
EDC 711	Intern:Sch Psych	5
EDC 712	Intern/Sch Psych	1-6
EDC 800	Thesis	1-6
Total Hours		67-109

Master of Science IN EDUCATION (M.S.E.) in College Student Personnel (ECP)

The master's degree program in college student personnel is designed to assist students in gaining the practice, theoretical perspectives, and appropriate integration to be successful in working on college and university campuses in a variety of positions. The program follows CAS Standards as established by our professional organizations. Coursework emphasizes the development of the professional, working with individual and groups of students, and designing campus environments. Students complete three internships at surrounding colleges and universities. Many of our students hold graduate assistantships in Student Development at the University of Dayton.

College Student Personnel

Foundational Studies		3
EDC 540	Persp-Higher Ed	
Professional Studies		12
EDC 550	Stdt Dv Role in Lrng	
EDC 557	Learng in Community	
EDC 560	Ldrs-Coll&Unv Envir	
EDC 568	Research/Eval/HS	
Advanced Studies		9
EDC 551	Stdt Clt&Devlpmnt	
EDC 555	Adm&Orgn-CSP	
EDC 562	Learning Design	
Supervised Practice *		2
EDC 553	Intern-Coll Std Pers *	
Electives **		6
EDC 565	Ed Strct Pst Sec Ed	
EDT 672	History of Higher Ed	
Culmination ***		
EDC 569	Scholarly Project ***	
Total Hours		32

* Students may begin taking internships in their second semester. Must be taken three times for a total of 6 semester hours.

** Select from the following courses or advanced studies in Higher Education Administration or College Student Personnel.

*** To be taken during final term.

Master of Science in Education (M.S.E.) IN Clinical Mental Health Counseling (ECC)

The 60 semester hour master's program in clinical mental health counseling prepares students pursuing counseling licensure. In Ohio, licensure as a professional counselor requires a master's degree in counseling with clinical coursework totaling 60 semester hours. Traditional counseling will be the focus of 40 of the hours, while 20 hours will emphasize clinical counseling with persons who have a diagnosed mental disorder. The master's degree includes all of the traditional coursework and clinical requirements. Upon completing the 60 semester hour requirement and passing the required test by the Counselor, Social Worker and Marriage and Family Therapy Board, the candidate receives the Professional Counseling License (PC). After completing two additional years of supervised experience, the counselor is licensed as a Professional Clinical Counselor (PCC).

The following course outline does not reflect the order in which classes are to be taken. To develop a program of study please consult your advisor.

Clinical Mental Health Counseling

EDC 521	Intro CMH Couns (Introduction to Clinical Mental Health Counselig (new course))	3
EDC 529	Career Counseling	2
EDC 531	Pers&HumDvlpAcrrsLfSp	2
EDC 535	Assess/Cnslg	2
EDC 543	Theories&Technq-Coun	3
EDC 545	Counslng Technq Lab	2
EDC 571	Biol Bases Behav	1-3

EDC 575	Coun Diverse Pop	3
EDC 583	Thr&Tchnq-Grp Couns	3
EDC 623	Foundtns-Abnrml Psy	3
EDC 631	Diag-Emotnl&Mntl Dis	3
EDC 635	Couples&Fmly Couns	3
EDC 568	Research/Eval/HS	3
EDC 584	Practicum-CommCnslg	2
EDC 598	Intern-Commnty Couns *	2-6
EDC 600	Culminating Seminar	1-3
EDC 630	Evl-Mntl&Emotnl Cond	3
EDC 681	Integ App-Clin Coun	3
EDC 683	Trt-Mntl&Emotnl Dis	3
EDC 686	Addictions Counseling	3
Electives		4
EDC 605	Professional Seminars	1-6
EDC 548	Cns Cldrn&Adlsnts	2
Total Hours		57-70

* Must be taken three times for a total of 600 total clock hours.

Certificate in Pastoral Counseling for Enhancement

Must include Master's Degree in Clinical Mental Health Counseling.

REL 500B	Fdns Bible St	2
REL 500C	Fdns Ch Hs/Hs Theo	2
REL 500D	Fdns Theo & Ethics	2
REL 540	Ecclesiology	2-3
or REL 543	Sacramental Theology	
REL 561	Catholic Moral Theol	2-3
or REL 562	Theo-ethic Reasoning	
REL 581	Pastoral Ministry Sem *	0-3
REL 582	Intro to Spir Dir	2-3
REL 584	Canon Law	2-3
Total Hours		14-21

* Pastoral Ministry Seminar - Students are required to enroll in this no credit seminar at least four semesters during their pursuit of the Pastoral Ministry master's degree. The seminar provides students to engage in those practices critical for ongoing development as a minister. Among those practices are theological reflection at least twice each semester with other students (in addition to the theological reflection integrated into the other courses) and attendance of one to two workshops focusing on practical skills like the RCIA process, managerial skills, practices of faith formation, evangelization process, Bible study, managing a budget and interpersonal skills such as instruction in specific communication techniques in areas like group building, pastoral consultation, conflict management, ministering to youth, community organizing. Over the four semesters students should attend at least ten different workshops evenly distributed among the various skills needed for effective ministry.

Strongly Recommended/Regularly Available

- Mentor/Internship (no credit)

- Faith Sharing in Small Groups (no credit)
- Spiritual Direction (no credit)

Master of Science IN EDUCATION (M.S.E.) in Higher Education Administration (EAH)

The master's program in higher education administration consists of coursework that integrates theory and research with practice. The program is designed to prepare students for a variety of academic and non-academic positions in higher education. The curriculum includes historical perspectives, law, finance, student issues, and organization and governance. Students complete a practicum and a culminating scholarly project. This program accommodates students holding full-time jobs.

Higher Education Administration

Foundational Studies		3
EDC 540	Persp-Higher Ed	
Professional Studies		12
EDC 550	Stdt Dv Role in Lrng	
EDC 557	Learnng in Community	
EDC 560	Ldrs-Coll&Unv Envir	
EDC 568	Research/Eval/HS	
Advanced Studies		9
EDC 556	Adm&Org-Hghr Edu	
EDC 561	Finance in Higher Ed	
EDC 563	Law/Ethics-Highr Ed	
Supervised Practice *		3
EDC 564	Practicum in Hghr Ed	
Electives **		6
EDC 565	Ed Strct Pst Sec Ed	
EDT 672	History of Higher Ed	
Culmination ***		3
EDC 569	Scholarly Project	
Total Hours		36

* For those students in full-time professional positions in higher education. All others must complete six hours of internship.

** Select from the following courses or advanced studies in Higher Education Administration or College Student Personnel.

*** To be taken during final term.

Master of Science IN EDUCATION (M.S.E.) in Human Services (EHU)

This master's degree program is designed for persons who do not hold a teaching license and who do not wish to pursue licensure as a counselor, but who are interested in enhancing their human service skills for employment in other settings. The program is appropriate for persons in the clergy, nursing, criminal justice and other related fields.

Note: This degree does not lead to obtaining Ohio's Professional Counseling license, Professional Clinical Counseling license, or School Counseling license. Students who intend to obtain these credentials must enroll in the 48-hour community counseling master's degree program and also complete the additional 12 hours in clinical coursework for professional counseling licensure for a PC or PCC license. To obtain Ohio's School Counseling license students must enroll in the 48 hour school counseling master's degree program.

Human Services

Foundational Courses	11
EDC 531 Pers&HumDvlpAcrrsLfSp	
EDC 568 Research/Eval/HS	
EDC 575 Coun Diverse Pop	
EDC 525 Human Services Admin	
Human Development Services Core	13
EDC 529 Career Counseling	
EDC 543 Theories&Technq-Coun	
EDC 545 Counslng Technq Lab	
EDC 583 Thr&Tchnq-Grp Couns	
EDC 635 Couples&Fmly Couns	
Electives* May include other EDC coursework approved by advisor.	6
EDC 605 Professional Seminars	
Total Hours	30

Master of Science IN EDUCATION (M.S.E.) in School Counseling (EDC)

The school counseling degree provides preparation for individuals who desire to be school counselors. Prerequisites for school counselor licensure include either: (1) a master's degree in counseling and two years of successful teaching experience under a standard teacher certificate or provisional or professional teacher license, and successful completion of internship consisting of six hundred contact hours in a school setting, OR (2) a master's degree in counseling, successful completion of an internship consisting of six hundred contact hours in a school setting, and a one-year induction under the supervision of a licensed school counselor. Upon completion of the master's degree, the Ohio Department of Education requires the PRAXIS specialty examination in school counseling. The degree program consists of 30 semester hours of coursework aligned with the CACREP eight common core areas and 18 semester hours our coursework in school counseling.

General Requirements

1. 48 semester hours
2. 600 clock hour internship
3. Scholarly project

The following course outline does not necessarily reflect the order in which classes are to be taken. To develop a program of study please consult your advisor.

School Counseling

Professional Orientation and Ethical Practice	3
EDC 501 Orientn to Sch Cous	
EDC 544 Phi,Prf,Et,Lg Asp-Cn	
Social and Cultural Diversity	3
EDC 575 Coun Diverse Pop	
Human Growth and Development	2
EDC 531 Pers&HumDvlpAcrrsLfSp	
Career Development	3
EDC 529 Career Counseling	
Helping Relationships	5
EDC 543 Theories&Technq-Coun	
EDC 545 Counslng Technq Lab	
Group Work	3

EDC 583 Thr&Tchnq-Grp Couns	
Assessment	2
EDC 535 Assess/Cnslg	
Research and Program Evaluation	6
EDC 568 Research/Eval/HS	
School Counseling	12
EDC 522 Intro-Sch Couns	
EDC 532 Spc Ed&the Sch Cnslr **	
EDC 542 Crisis Intervn/Prev	
EDC 546 Sch Cns Prg Dev/Impl	
EDC 547 Cnsltn/Ldrshp Schls	
EDC 548 Cns Cldrn&Adlnts	
Clinical Experience	4-6
EDC 585 Prac --Sch Counseling	
EDC 599 Internshp-Schl Couns **	
Total Hours	43-45

* Students certified in L.D. will take another counseling course.

** Must be taken three times for a total of 600 total clock hours.

At the beginning of the first term of enrollment in the program, students will be oriented to the program requirements and will develop a planned program of study as part of the EDC 501 Orientn to Sch Cous

Courses**EDC 500. Orientn to Comm Cous. 1 Hour**

ORIENTATION TO COMMUNITY COUNSELING - This course will introduce students to the expectations and requirements of the community counseling program and give them an introduction to the profession of counseling. A holistic approach to counseling will be used.

EDC 501. Orientn to Sch Cous. 1 Hour

ORIENTATION TO SCHOOL COUNSELING - This course will introduce master's degree students to the University of Dayton's school counseling program including program study requirements and expectations. Issues related to professional identity development will also be addressed.

EDC 508. Thr Lrng/Hum Dev. 3 Hours

THEORIES OF LEARNING & HUMAN DEVELOPMENT - The purpose of this course is to increase knowledge and understanding of the theories, principles, and research about learning and development of school-age youth.

EDC 510. Consultation-Schools. 3 Hours

CONSULTATION SCHOOLS - The role of the school psychologist as a consultant in a school setting is examined with emphasis on acquiring effective consultation skills. A school-based, problem-solving model is presented that requires development of appropriate consultant skills. (Practicum is EDC 511).

EDC 511. Prac: Consultation. 1 Hour

SCHOOL PSYCHOLOGY PRACTICUM: CONSULTATION - Practicum for EDC 510.

EDC 512. Cognitiv Assm/Interv. 1-6 Hours

COGNITIVE ASSESSMENT FOR INTERVENTION - Development of proficiency in administration, scoring, and interpreting intelligence tests to be used in conjunction with other assessment information for completing multifaceted evaluations and developing interventions for assisting children and youth, birth through age 21. (Practicum is EDC 513).

EDC 513. Prac: Cog Assmt/Intr. 1 Hour

SCHOOL PSYCHOLOGY PRACTICUM: COGNITIVE AFI - Practicum for EDC 512.

EDC 514. Acad Assess/Intervn. 3 Hours

ACADEMIC ASSESSMENT FOR INTERVENTION - This course provides students with the knowledge and skills necessary for the effective evaluation of the academic strengths. The emphasis is on the completion of a case study within the context of the Response to Intervention model of practice. (Practicum is EDC 515).

EDC 515. Prac:Acad Assess/Int. 1-6 Hours

SCHOOL PSYCHOLOGY PRACTICUM: ACADEMIC AFI - Practicum for EDC 514.

EDC 516. Acad/Behav Asses Ins. 1-6 Hours

ACADEMIC & BEHAVIORAL ASSESSMENT INSTRUMENTS - School psychology graduate students learn to administer, score and interpret academic and behavioral instruments. The instruments are limited to those that can be used with pre-school to 12th grade children and adolescents.

EDC 517. Sch Psy Prac: Shdwng. 1-6 Hours

SCHOOL PSYCHOLOGY PRACTICUM: SHADOWING - Practicum for EDC 572.

EDC 521. Intro CMH Couns. 3 Hours

INTRODUCTION TO COMMUNITY AND MENTAL HEALTH COUNSELING - Examines the historical, philosophical and theoretical underpinnings of the mental health field and the role and function of mental health counselors within that context.

EDC 522. Intro-Sch Couns. 3 Hours

INTRODUCTION TO SCHOOL COUNSELING - This course is designed to assist graduate students in building skills and developing an understanding relative to the guidance and counseling role of human service practitioners. Essentially, this role consists of assisting children, youth, and adults from diverse backgrounds in reaching their maximum academic and personal development within various educational and community settings.

EDC 523. Delinquents&Juv Cr. 1 Hour

DELINQUENTS & JUVENILE COURT - This course examines (1) the juvenile court system, (2) underlying ideologies and current debates concerning treatment and/or punishment decisions, and (3) children and families at risk of juvenile court involvement.

EDC 525. Human Services Admin. 3 Hours

HUMAN SERVICES ADMINISTRATION - This course will help graduate students increase knowledge, theory, and skills in the administrative aspects of the human services delivery system. Students will gain knowledge and understanding of community, environmental, and institutional opportunities that enhance, as well as barriers that impede, overall leadership in human services administration. Prerequisite(s): Graduate Standing.

EDC 529. Career Counseling. 2 Hours

CAREER COUNSELING - Focuses on theories, strategies, information, assessment, and resources to be used in the career counseling of children, youth, and adults.

EDC 529L. Career Counseling Lab. 1 Hour

CAREER COUNSELING LAB - Course content focuses on theories, strategies, information, assessments, and resources to be used in the career counseling of children and youth in the K-12 setting.

EDC 531. Pers&HumDvlpAcrrsLfSp. 2 Hours

PERSONALITY & HUMAN DEVELOPMENT ACROSS THE LIFESPAN - Individual growth and development across the lifespan with emphasis on the dynamic of personal behavior. This course emphasizes the integrating theme that cognitive structure is an important director of human behavior, and that the understanding of personality requires that we understand the role of cognitive structure personality. While this cognitive perspective is emphasized, the course covers a wide range of concerns to the student of personality across the lifespan. It discusses a representative selection of personality theories, personality structure, development, dynamics, maladaptive behavior, and personality change.

EDC 532. Spc Ed&the Sch Cnslr. 3 Hours

COUNSELING CHILDREN WITH LEARNING DISABILITIES & OTHER EXCEPTIONALITIES - Designed to provide an overview of the range of handicapping conditions for which educational program standards have been developed. Emphasis is given to the cognitive and affective impact upon the individual and family.

EDC 535. Assess/Cnslg. 2 Hours

ASSESSMENT AND COUNSELING - Understanding of the individual through the appraisal techniques of individual and group testing and case study. Tests include a wide range of educational and psychological instruments. Individual differences influenced by elements such as ethnic, cultural, and gender factors are considered.

EDC 537. Statistics. 3-4 Hours

STATISTICS - This course provides an introduction to descriptive and inferential statistics and to SPSS. Much of the course learning activities are computer and Web based.

EDC 538. Child/Adl Psychothrp. 3 Hours

CHILD & ADOLESCENT PSYCHOPATHOLOGY - This course provides an overview of the normal and abnormal development of child and adolescent personality. Distinctions between disorders and special education disabilities are made. Each of the several aspects of child and adolescent psychopathologies are examined and prevention approaches are introduced.

EDC 540. Persp-Higher Ed. 3 Hours

PERSPECTIVES IN HIGHER EDUCATION - This course provides an in depth study of the philosophy guiding higher education, a directed study of the history of higher education, and examination of the ethical and philosophical foundations of student affairs practice within current higher education structures.

EDC 541. Curr Ins/Div Lnrs. 3 Hours

CURRICULUM & INSTRUCTION FOR DIVERSE LEARNERS - This course provides students with the foundation knowledge necessary for understanding the diverse learning needs of children and adolescents. Topics include types of handicapping conditions, gifted and talented, instructional settings, curriculum and instructional methods, and classroom management techniques.

EDC 542. Crisis Intervn/Prev. 2 Hours

CRISIS INTERVENTION & PREVENTION IN EDUCATIONAL SETTINGS - This course will review crisis counseling theory and basic crisis prevention and response skills. The concept of crisis will be considered broadly. The focus will be on the promotion of health and mental health in schools and the enhancement of student competence following a crisis event. The course will explore specific examples of techniques and programs designed to intervene before, during and after a crisis event. Also covered will be policy questions, evaluation issues, and systems change. Specific attention will be given to concepts of stress, coping, and resiliency.

EDC 543. Theories&Technq-Coun. 3 Hours

THEORIES & TECHNIQUES OF COUNSELING - Through analysis of varied theoretical models, skills in counseling will be developed in an integrated approach for modifying the behavior of children, youth, and adults through individual and system change.

EDC 544. Phi,Prf,Et,Lg Asp-Cn. 2 Hours

PHILOSOPHICAL, PROFESSIONAL, ETHICAL, & LEGAL ASPECTS IN COUNSELING - Study of philosophical assumptions of the various theories of counseling and psychotherapy. Treatment of counseling ethics and professional practices; laws and court decisions pertaining to counseling.

EDC 545. Counseling Technq Lab. 2 Hours

COUNSELING TECHNIQUES LAB - Supervised experience in counseling. Both group and individualized instruction and supervision. Prerequisite(s): EDC 531, EDC 543.

EDC 546. Sch Cns Prg Dev/Impl. 3 Hours

SCHOOL COUNSELING PROGRAM DEVELOPMENT & IMPLEMENTATION - Course content focuses on the development, implementation and evaluation of comprehensive developmental school counseling programs, including the knowledge, skills and practices necessary for engaging in an ongoing process of needs assessment, program development and implementation and program evaluation geared toward promoting the academic achievement, career planning and personal/social development of all PreK-12 students.

EDC 547. Cnslttn/Ldrshp Schls. 3 Hours

CONSULTATION & LEADERSHIP IN SCHOOL COUNSELING - Course content focuses on preparing school counseling candidates to become effective educational leaders, advocates and collaborators through exposure to current educational leadership and advocacy models and through active involvement in relevant skill building exercises. School counseling candidates will learn to lead and consult effectively with diverse students, parents, teachers, administrators, and various other educational stakeholders. Prerequisite(s): EDC 501, EDC 522, EDC 531, EDC 543, EDC 545, EDC 546, and EDC 583.

EDC 548. Cns Cldrn&Adlsnts. 2 Hours

COUNSELING CHILDREN AND ADOLESCENTS - This course is intended to provide foundational knowledge and skill development for counseling children and adolescents. Foundational knowledge will include historical and current trends of counseling children and adolescents, multicultural and ethical considerations, expressive techniques, solution focused therapy, play therapy, REBT therapy, reality therapy, counseling at-risk children, crisis counseling, working with parents and family systems. Skills will include general counseling skills, crisis counseling skills, and collaboration skills. Prerequisite(s): EDC 543 and 545.

EDC 548L. Cns Cldrn&Adlsnts Lb. 1 Hour

COUNSELING CHILDREN AND ADOLESCENTS LABORATORY - Laboratory.

EDC 550. Stdt Dv Role in Lrng. 3 Hours

STUDENT DEVELOPMENT'S ROLE IN LEARNING - The study of basic theoretical perspectives underlying college student development and assessment of development to the practice of college student personnel.

EDC 551. Stdt Clt&Devlpmnt. 3 Hours

STUDENT CULTURES & DEVELOPMENT - In-depth study and critique of selected student and adult development theories, assessment of students' development on those theories, and application to the practice of College Student Personnel. Prerequisite(s): EDC 550.

EDC 553. Intern-Coll Std Pers. 2 Hours

INTERNSHIP IN COLLEGE STUDENT PERSONNEL - Participate as a professional to gain significant practical experience in a student affairs office under the supervision of a practicing professional. The student is required to take a total of six semester hours over three semesters. Each internship experience must be at a different site.

EDC 555. Adm&Orgn-CSP. 3 Hours

ADMINISTRATION & ORGANIZATION OF COLLEGE STUDENT PERSONNEL PROGRAMS - This course deals with issues related to the administration of student personnel programs in colleges and universities and examines the organizational structures associated with the delivery of these programs in the context of current higher education administrative environments. Prerequisite(s): EDC 554.

EDC 556. Adm&Org-Hghr Edu. 3 Hours

ADMINISTRATION & ORGANIZATION IN HIGHER EDUCATION - This course deals with the administration of broad areas of colleges and universities by examining the organizational structure and culture associated with the delivery of programs and services. Prerequisite(s): EDC 554.

EDC 557. Learning in Community. 3 Hours

LEARNING IN COMMUNITY - In-depth study of college student cultures and their impact on the individual college student experience. Particular attention will be paid to understanding the student culture in student personnel work.

EDC 559. Intl&Global Hghr Ed. 3 Hours

INTERNATIONAL AND GLOBAL HIGHER EDUCATION - International and global higher education.

EDC 560. Ldrs-Coll&Unv Envir. 3 Hours

LEADERSHIP IN COLLEGE & UNIVERSITY ENVIRONMENT - Study of the concepts, literature, and research in leadership and their relationship to the development and maintenance of the organization. Higher education and college student personnel examples will be emphasized.

EDC 561. Finance in Higher Ed. 3 Hours

FINANCE IN HIGHER EDUCATION - Study and analysis of the planning, methodologies, financial strategies, and evaluative systems for university systems and subsystems. Prerequisite(s): EDC 554.

EDC 562. Learning Design. 3 Hours

LEARNING DESIGN - Theories and practice of group interventions in student personnel settings; conceptualization and assessment of interventions appropriate to human and organizational student personnel settings. Course includes development of intervention skills.

EDC 563. Law/Ethics-Highr Ed. 3 Hours

LAW & ETHICS IN HIGHER EDUCATION - Through study and reflection in the fields of law and ethics, students are asked to consider the kinds of administrative actions that lead people and institutions into court and to develop alternative approaches and attitudes.

EDC 564. Practicum in Hghr Ed. 3 Hours

PRACTICUM IN HIGHER EDUCATION - Supervised experience in higher education administration with faculty and on-site supervisor. Topics and requirements will vary with experience and placement area. Designed for students working in full-time positions in higher education settings.

EDC 565. Ed Strct Pst Sec Ed. 3 Hours

EDUCATIONAL STRUCTURES IN POST SECONDARY EDUCATION A - study of federal, state, and local public policy and its impact on public and private higher education. Specific attention will be paid to financial aid, admission, and accreditation issues.

EDC 566. Case Studies High Ed. 3 Hours

CASE STUDIES IN HIGHER EDUCATION - Case studies in higher education.

EDC 568. Research/Eval/HS. 3 Hours

RESEARCH & EVALUATION IN HUMAN SERVICES - This course provides professionals in the public schools, higher education institutions, and community agencies with the basic quantitative and qualitative tools of inquiry and when to use them to answer research questions. Emphasis also includes critiquing research studies and applying research results to practice. College Student Personnel and Higher Education Administration students must have 21 Hours.

EDC 569. Scholarly Project. 3 Hours

SCHOLARLY PROJECT IN CSP/HE A - culminating course in which students in their final term integrate, synthesize, and apply the academic work and professional experiences gathered during their program. Students will complete a project designed with the assistance of faculty and campus administrators and present it along with their peers in a supportive learning community. Taken toward the end of the program. Prerequisite(s): EDC 568.

EDC 571. Biol Bases Behav. 1-3 Hours

BIOLOGICAL BASES OF BEHAVIOR - Survey of three biological bases of behavior, including neuropsychology, genetics, and psychopharmacology.

EDC 572. Role&Func-Sch Psych. 3 Hours

ROLE AND FUNCTION OF THE SCHOOL PSYCHOLOGIST - Topics of significance in the profession of school psychology, with emphasis on history and foundations of school psychology, legal and ethical issues, professional issues and standards, roles and functions of the school psychologist. Students are expected to develop knowledge and skills in using APA format in the context of a literature review.

EDC 573. Orient-The Edu Proc. 1 Hour

ORIENTATION TO THE EDUCATIONAL PROCESS & TECHNOLOGY - Directed observation of and participation in the normal school process under supervision within the school. Required of all school psychology candidates who do not have a teaching certificate.

EDC 574. Indep Study-Counselng. 1-3 Hours

INDEPENDENT STUDIES IN COUNSELING - Independent study.

EDC 575. Coun Diverse Pop. 3 Hours

COUNSELING DIVERSE POPULATIONS - Designed to develop sensitivity and awareness in human diversity; introduce multicultural concepts, competencies, and research; and provide an experiential component.

EDC 583. Thr&Tchnq-Grp Couns. 3 Hours

THEORIES & TECHNIQUES OF GROUP COUNSELING - Course content focuses on the stages, theories, strategies, and applications of the group counseling process. Prerequisite(s): EDC 531 and EDC 543.

EDC 584. Practicum-CommCnslg. 2 Hours

PRACTICUM IN COMMUNITY COUNSELING - Supervised practice and observation in group and individual counseling techniques. Prerequisite(s): EDC 500, EDC 529, EDC 535, EDC 544, EDC 575, EDC 631.

EDC 585. Prac --Sch Counseling. 2 Hours

PRACTICUM IN SCHOOL COUNSELING - Supervised practice and observation in group and individual counseling techniques. Prerequisite(s): EDC 501, EDC 522, EDC 531, EDC 543, EDC 545, EDC 546, and EDC 583.

EDC 593. Erly Chldhd Dev & As. 3 Hours

EARLY CHILDHOOD DEVELOPMENT AND ASSESSMENT - The purpose of this course is to provide graduate students in school psychology with knowledge in developmental norms for students in early childhood and implications for assessment and instruction. Students will review several early childhood assessment instruments and methodologies and understand how to use them as appropriate in a variety of settings in accordance with legal guidelines and best practice.

EDC 598. Intern-Commnty Couns. 2-6 Hours

INTERNSHIP IN COMMUNITY COUNSELING - Directed experience in professional functions within cooperating social and clinical agencies in the community. Must be taken three times. Prerequisite(s): EDC 584.

EDC 599. Internshp-Schl Couns. 2-6 Hours

INTERNSHIP IN SCHOOL COUNSELING - Extensive directed experience in professional functions within cooperating schools and community organizations. Must be taken three times. Prerequisite(s): EDC 585.

EDC 600. Culminating Seminar. 1-3 Hours

CULMINATING SEMINAR - This course prepares students to take a comprehensive examination covering the course content of their masters degree program. In addition for students who will seek certification as school counselors or licensure as professional counselors or professional clinical counselors, the course serves as a preparation for the competency exams related to these credentials.

EDC 602. Counseling Seminar. 1-6 Hours

COUNSELING SEMINARS A - series of specific courses designed to present topics of unique interest to students in a variety of professional areas. Areas often include state-of-the-art assessment and intervention methods presented by community experts.

EDC 605. Professional Seminars. 1-6 Hours

PROFESSIONAL SEMINARS WITH CLINICAL IMPLICATIONS - Learner-oriented courses in which a group of students focus on a specific topic related to the professional, ethical, or practical applied aspects of clinical counseling as implemented in a clinical setting.

EDC 610. Social&Behav As Intr. 3 Hours

SOCIAL BEHAVIOR ASSESSMENT FOR INTERVENTION - This course and its practicum (EDC 611) provide instruction and practice in the data-based, problem-solving, intervention-based assessment of the social and behavioral functioning of preschool children and of school-age children and adolescents. Course content includes various models and methods of assessment, sources of assessment data, and intervention planning.

EDC 611. Prac Social&Beh AF. 1 Hour

SCHOOL PSYCHOLOGY PRACTICUM: SOCIAL/BEHAVIORAL AFI - Practicum for EDC 610.

EDC 612. Asses-Intr&Accblty. 3 Hours

ASSESSMENT FOR INTERVENTION & ACCOUNTABILITY - The focus of this course is accountability in the schools with emphases on legal bases, standards of practice, individual and group accountability, and program evaluation. Students complete program evaluation project in this course. (Practicum is EDC 613).

EDC 613. Prac:Assess/Intr/Acc. 1-6 Hours

SCHOOL PSYCHOLOGY PRACTICUM: ASSESSMENT FOR INTERVENTION AND ACCOUNTABILITY - Practicum for EDC 612.

EDC 615. Sch Psy Culmin Sem. 3 Hours

SCHOOL PSYCHOLOGY CULMINATING SEMINAR - This course employs a seminar format to discuss current issues in the practice of school psychology.

EDC 623. Foundtns-Abnrml Psy. 3 Hours

FOUNDATIONS IN ABNORMAL PSYCHOLOGY - Description of the specific aspects of personality theory and cultural and biological factors that lead to an understanding of abnormal behavior and psychopathology as it affects a wide range of individuals from children through the aged. The relevance of these concepts and theories to clinical counseling is explored. This course incorporates theory (quantitative) and group exercises (qualitative and performative knowledge). Prerequisite(s): EDC 531.

EDC 630. Evi-Mntl&Emotnl Cond. 3 Hours

EVALUATION OF EMOTIONAL & MENTAL CONDITIONS - Includes the use of assessment procedures in diagnosis, treatment planning, and outcome measurement. Methods of administering and interpreting individual and group standardized tests of mental ability interest and personality are emphasized. Prerequisite(s): Master's degree in community counseling.

EDC 631. Diag-Emotnl&Mntl Dis. 3 Hours

DIAGNOSIS OF EMOTIONAL & MENTAL DISORDERS - Presentation of the mental status exam and other means of developing a diagnosis as described in the current edition of the 'Diagnostic and Statistical Manual for Mental Disorders.' Special problems including mental retardation, psychosexual disorders, substance abuse, and addiction are also considered. This course incorporates theory (quantitative knowledge) and case studies (qualitative and performative knowledge). The use of the diagnosis in developing treatment plans will be emphasized. Prerequisite(s): EDC 623.

EDC 635. Couples&Fmly Couns. 3 Hours

COUPLES & FAMILY COUNSELING - This course is designed to introduce students to systems theory, the dynamics of human relationships, theories and techniques of marital and family counseling, and professional and legal issues in marital and family counseling. Students will acquire skills and understanding relative to the role of the counselor in assisting families to develop new strategies, solve problems, and facilitate individual and family growth.

EDC 673. Cn Multetc Pop-Dm&Gb. 3 Hours

COUNSELING MULTI-ETHNIC POPULATIONS - Counseling multi-ethnic populations.

EDC 681. Integ App-Clin Coun. 3 Hours

INTEGRATIVE APPROACH TO CLINICAL COUNSELING - Assistance for the students in selecting that theory or those aspects of various theories of clinical counseling that best characterize their approach to clients. Emphasis is on the integration of theories with the counselor's personal characteristics and experience. This includes emphasis on self reflection (qualitative knowledge), theory (quantitative knowledge), and counseling exercises (performative knowledge). Prerequisite(s): Master's degree in community counseling.

EDC 683. Trt-Mntl&Emotnl Dis. 3 Hours

TREATMENT OF MENTAL & EMOTIONAL DISORDERS - Presentation of methods used in treatment and management of mental disorders including treatment planning, counseling techniques, record keeping, referral procedures, and use of psychotropic medication. Prerequisite(s): Master's degree in community counseling.

EDC 686. Addictions Counseling. 3 Hours

ADDICTIONS COUNSELING - Course content focuses on theories, strategies, information, assessments, and resources to be used in addictions counseling of persons over the lifespan. Prerequisite(s): EDC 630.

EDC 700. Scholarly Project. 3 Hours

SCHOLARLY PROJECT - To familiarize the student with the scientific literature of the counseling profession in a more focused way and utilize their research of the literature in one of three specific alternatives: (1) Thesis - literature search and inquiry; (2) Project of Excellence - literature search and counseling competence; (3) Transformative project - literature search and social action application.

EDC 710. Intern: Sch Psych. 1-5 Hours

INTERNSHIP IN PSYCHOLOGY - Semester I of a nine month, 1200-hour field experience under the direct supervision of certified school psychologists as well as the supervision of university faculty.

EDC 711. Intern:Sch Psych. 5 Hours

INTERNSHIP IN SCHOOL PSYCHOLOGY - Semester II of a nine month, 1200-hour field experience under the direct supervision of certified school psychologists as well as the supervision of university faculty.

EDC 712. Intern/Sch Psych. 1-6 Hours

INTERNSHIP IN SCHOOL PSYCHOLOGY - Semester III of a nine month, 1200-hour field experience under the direct supervision of certified school psychologists as well as the supervision of university faculty.

EDC 800. Thesis. 1-6 Hours

THESIS - This 2 semester course series provides support to students who are completing their school psychology thesis.

Educational Leadership

- Educational Specialist, Educational Leadership
- Master of Science, Educational Leadership
- Principal Licensure
- Superintendent Licensure

faculty

David Dolph, Ph.D., Department Chairperson
 Barbara De Luca, Ph.D., Associate Professor
 Timothy Ilg, Ph.D., Associate Professor
 Theodore Kowalski, Ph.D., Professor and Kuntz Family Chair in Education
 Rev. Joseph Massucci, Ph.D., Associate Professor
 Br. Thomas Oldenski, S.M., Ph.D., Associate Professor
 A. William Place, Ph.D., Associate Professor and Director of Doctoral Studies
 C. Daniel Raisch, Ph.D., Associate Professor
 Carolyn Ridenour, Ed.D., Professor and Joseph J. Panzer, S.M., Chair in Education
 Charles J. Russo, Ed.D., J.D., Professor and Panzer Chair in Education
 Pamela Young, Ph.D., Assistant Professor and Director of Accreditation
 Please visit our department website at www.udayton.edu/education/edl.

Through its Marianist traditions and principles, the mission of the Department of Educational Leadership at the University of Dayton is threefold. The first charge is to prepare scholar-practitioners to serve effectively in administrative roles and other leadership positions in PK-12 public, Catholic, and other non-public schools. The second task is to contribute to the knowledge base in school administration. The third responsibility is to provide service to PK-12 public, Catholic, and other non-public schools.

The Department of Educational Leadership 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 licensure program, or (3) are interested in earning the Educational

Specialist degree or the Ph.D., or (4) wish to improve their educational leadership knowledge and skills.

Advising

Upon acceptance into the program, the student will be assigned a faculty advisor who will be available to assist the student with information relative to their course of study. Students needing registration or program evaluation information should contact the department office.

Curriculum, Instruction, and Professional Development Licensure

A total of 45 semester hours is required to obtain the curriculum, instruction, and professional development licensure. Students may earn this licensure by completing the Educational Leadership master's degree, or its approved equivalent, plus 15 additional semester hours of coursework as listed below. Students applying for an initial administrative license must pass, with a minimum score of 610, the "Educational Leadership: Administrative and Supervision" (0411) Praxis II test. The Curriculum, Instruction, and Professional Development (CIPD) license is a five year license and requires two years teaching experience.

Required Courses

EDA 852	Assess&Instr Sch Impr	3
EDA 710	Curr Eval&Instruct	3
EDA 733	Internship III	3
EDA 762	Plcy,Poltics&Dcs Mkg	3
Electives		
Select one (1) from the following:		3
EDA 711	Curr Devlp&Ldrshp	
EDA 712	Program & Staff Dev	
Total Hours		15

Educational Specialist in Educational Leadership

David Dolph, Ph.D., Department Chairperson

The Educational Specialist degree is offered jointly by 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. The areas of staff/organizational development, curriculum development, program development and evaluation, law/finance/facilities, public relations, assessment and research are included. Emphasis is given to preparing individuals for central office positions.

The planned program of study requires a minimum of 33 semester hours of designated graduate work beyond the master's degree. The program may be completed either at the University of Dayton or at Wright State University. Previous post-master's coursework may be transferred into the program if it supports the objectives of the overall program and is in accordance with the university transfer credit guidelines.

Course List

Required Courses

EDA 807	Eds Project Seminar	3
EDA 812	Program&Staff Dev	3
EDA 818	Superintendency	3
EDA 833	Internship III *	3
EDA 851	Research	3
or EDU 990	Rsch Methods & Design	

EDA 852	Assess&Instr Sch Impr	3
Prereq: EDA 851 or other approved research course. Project must be completed within 12 months of starting date. Students who have taken EDA 551 or its equivalent should take EDU 990.		
Educational Specialist Electives		
Select five of the following:		15
EDA 810	Curric Eval&Instruct	
EDA 811	Curr Devlp&Ldrshp	
EDA 855	Legal Issues-Sch Ldr	
EDA 859	Law of Special Educ	
EDA 860	District Level Mgt	
EDA 861	Distr Level Leadrshp	
EDA 862	Plcy,Poltics&Dsc Mkg	
Total Hours		33

Master of Science in Educational Leadership

To earn a master's degree in educational leadership, the student is required to successfully complete a minimum of 30 semester hours from the courses listed below and achieve a grade point average of 3.0 or better. Students have the opportunity to pursue coursework via the Internet or by combining distance learning and traditional courses in pursuit of the Master's Degree.

The Department of Educational Leadership offers an online master's degree with a Catholic school leadership concentration. Tuition scholarships are available to teachers and administrators working full time in Catholic schools or diocesan offices. For further program and scholarship information, contact David Dolph, Chair at ddolph1@udayton.edu. A three summer traditional program is also available for Catholic school educators.

EDA 505	Educational Leadrshp	3
EDA 507	Internship I *Prereq EDA 551	3
EDA 509	Supervisin&Prof Dvlp	3
EDA 510	Instructional Ldrshp	3
EDA 511	Curriculum	3
EDA 515	School Law	3
EDA 551	Research	3
EDA 555	Cmmnty Rel-Sch Ldrs	3
EDA 556	Ldrshp-Divrs Comm	3
EDA 557	School Finance	3
Total Hours		30

Principal Licensure

Students may earn a Principal license by completing the University of Dayton Master of Science degree in Educational Leadership, or its approved equivalent; successfully completing the 12 semester hours of designated Principal license coursework; providing evidence of two years of successful teaching experience under a standard teaching credential on the level for which the administrative license is sought; and obtaining a passing score (minimum score of 610) on the "Educational Leadership: Administrative and Supervision (0411) Praxis II test.

Students have the opportunity to pursue coursework via the Internet or by combining distance learning and traditional courses in pursuit of the Principal license.

EDA 607	Internship II Prereq. EDA 507	3
EDA 611	Assess&Instr/Sch Imp	3
EDA 626	Staff Personnel	3
EDA 655	Principalship	3
Total Hours		12

Superintendent Licensure

Students may earn a Superintendent license by completing both the University of Dayton Master of Science degree in Educational Leadership and the Principal licensure, or their approved equivalent, plus the 15 additional semester hours of designated coursework as listed below. In addition, students must have successfully completed three years of administrative experience under a standard administration credential.

Required

EDA 718	Superintendency	3
EDA 733	Internship III	3
EDA 760	Sem:Dist Lev Mgt	3
EDA 761	Distr Level Leadrshp	3
Total Hours		12

Courses

EDA 505. Educational Leadrshp. 3 Hours

EDUCATIONAL LEADERSHIP - The focus of this course is leadership within schools and the role of the educational leader as scholar/practitioner emphasizing excellence in the educational organization through the effective integration of theory and practice.

EDA 507. Internship I. 3 Hours

INTERNSHIP I - This course provides opportunities for the student to experience administrative responsibilities. Emphasis is placed on practicing the skills learned in the master's program, receiving feedback on efforts, and relating practice to theory. Prerequisite(s): EDA 551.

EDA 509. Supervisin&Prof Dvlp. 3 Hours

SUPERVISION & PROFESSIONAL DEVELOPMENT - This course in the theory and practice of supervision is designed to explore essential concepts and skills necessary in providing leadership in the area of formative and summative evaluation for the improvement of teaching and learning. Emphasis will be placed on concepts and means of the scholar-practitioner providing leadership in the supervisory task areas and building learning communities through critical reflection.

EDA 510. Instructional Ldrshp. 3 Hours

INSTRUCTIONAL LEADERSHIP - The course focus is on developing knowledge, skills, attitudes, and values essential in helping others to expand/refine their instructional effectiveness. Emphasis is placed on helping teachers use alternating models of instruction, diagnosing learner needs, prescribing appropriate learner instructional strategies, and accommodating learner needs based upon the concept of diversity.

EDA 511. Curriculum. 3 Hours

CURRICULUM - The focus of this course is on the development of an understanding of the history, purposes, and practices of the school curriculum. Within the course, emphasis is placed on helping students personally integrate the scholarly and practical dimensions and on demonstrating that integration.

EDA 515. School Law. 3 Hours

SCHOOL LAW - This course addresses legal issues pertinent to teacher, administrator, and student legal rights and responsibilities in the school building. The legal process, structures of the law, legislation/litigation, and practices to avoid legal infringements are addressed.

EDA 551. Research. 3 Hours

RESEARCH - This course will equip school leaders with the tools of research. Emphasis will be placed on becoming frequent and knowledgeable users of research on schools, developing skills in critiquing research, and applying the tools of research to address issues that face school leaders. This course is a prerequisite for EDA 507.

EDA 555. Cmmnty Rel-Sch Ldrs. 3 Hours

COMMUNITY RELATIONS FOR SCHOOL LEADERS - This course is designed to assist school administrators in refining their communication skills and political understanding. Provisions are made for the development of guidelines, techniques, and practices that facilitate wholesome relationships between school and community.

EDA 556. Ldrshp-Divrs Comm. 3 Hours

LEADERSHIP IN DIVERSE COMMUNITIES - This course will promote understanding of differences in race, gender, social class, religious affiliation, and sexual orientation and the implications of these differences for leadership in the school setting. Emphasis will be on promoting understanding and managing diversity within schools as learning organizations.

EDA 557. School Finance. 3 Hours

SCHOOL FINANCE - This course addresses topics such as equity, adequacy, efficiency in school funding; local, state, and federal funding sources; funding methods; and budgeting emphasizing features unique to Ohio.

EDA 607. Internship II. 3 Hours

INTERNSHIP II - The internship is intended to provide the participant an opportunity to relate the coursework, research, simulation, and independent study in which he/she has engaged to actual problems encountered in administering the elementary or secondary school building/program.

EDA 611. Assess&Instr/Sch Imp. 3 Hours

ASSESSMENT & INSTRUCTION FOR SCHOOL IMPROVEMENT - This course focuses on the role of educational leaders with setting and attaining high academic goals for the primary purpose of maximized student learning outcomes, thus improving the practices of instruction and assessment. Educational leaders need an understanding of the best practices for enhancing teaching, curriculum, supervision, assessment and professional development. Educational leaders also need to know how to collect, interpret and analyze what's been assessed and to use this data with reporting to various constituents of the learning community. The focus of this course is the integration of theory with the practices of instruction and assessment for improving the teaching/learning process.

EDA 614. Variable: Workshop. 1-6 Hours

VARIABLE TOPICS - Variable topics workshop.

EDA 626. Staff Personnel. 3 Hours

STAFF PERSONNEL - This course emphasizes the systematic selection, evaluation, assignment and development of both professional and classified school personnel. Scholar-practitioners participating in this class will develop an understanding of the associated task areas.

EDA 654. School Finance. 3 Hours

SCHOOL FINANCE - This course addresses topics such as equity, adequacy, efficiency in school funding; local, state, and federal funding sources; funding methods; and budgeting emphasizing features unique to Ohio.

EDA 655. Principalship. 3 Hours

PRINCIPALSHIP - This course centers on the application of leadership and management principles to the elementary, middle, and secondary school settings. Emphases include developing vision and mission statements, reflecting on the leadership role of the principal, and reviewing the process for the daily administration of the total school program.

EDA 659. Law of Special Educ. 3 Hours

LAW OF SPECIAL EDUCATION - Review of pertinent legislation and litigation and litigation impacting on the rights of parents, students, and teachers involved in the process of providing a free appropriate public education for children with disabilities. Emphasis is placed on how teachers can, through an understanding of the law, facilitate active parent participation in the developmental progress of students. Teachers' specific responsibilities are described in relation to current requirements for development of appropriate educational programs.

EDA 710. Curr Eval&Instruct. 3 Hours

CURRICULUM EVALUATION AND INSTRUCTION - This course is designed to refine participant understanding of the realms of meaning, characteristics of effective programs, research findings on effective instruction, and curriculum management.

EDA 711. Curr Devlp&Ldrshp. 3 Hours

CURRICULUM DEVELOPMENT AND LEADERSHIP - The major focus of the course will be how an educational leader at the district level designs and implements curriculum based upon philosophical, psychological, and historical underpinnings of curriculum theory. A recurring focus in the course is the relationship of practice and scholarship and practice and theory as the educational leader creates a learning community.

EDA 712. Program & Staff Dev. 3 Hours

PROGRAM AND STAFF DEVELOPMENT - This course is designed to strengthen student competence with program development and evaluation processes. Major emphasis is focused on staff development planning, program implementation, and program assessment.

EDA 718. Superintendency. 3 Hours

SUPERINTENDENCY - This course addresses the duties and responsibilities of central office administrators, especially those of the superintendent. Emphasis is placed on board of education relations, communication, and an analysis of the political structures within which the superintendent operates.

EDA 733. Internship III. 3 Hours

INTERNSHIP III - This internship provides significant opportunities for candidates to synthesize and apply the knowledge and practice and develop the skills identified in the ELCC standards through, substantial, sustained, standards-based work in real setting, planned and guided cooperatively by the institution and school district personnel. This course is intended to provide the participants with an opportunity to relate the coursework, research, simulation, and independent study in which they have engaged in real problems encountered in administration, supervision and instructional programs primarily in a district level/central office setting.

EDA 760. Sem:Dist Lev Mgt. 3 Hours

SEMINAR: DISTRICT LEVEL MANAGEMENT - This course is intended to provide the participants with the knowledge and understanding of practical issues necessary for school superintendents to successfully manage a school district. These issues include matters relevant to managing a school district as an organization, managing the various operational components of the district, and managing district resources. Prerequisite(s): Admitted to Superintendent licensure program or permission of department chairperson.

EDA 761. Distr Level Leadrshp. 3 Hours

SEMINAR: DISTRICT LEVEL LEADERSHIP - This course addresses current topics related to district level issues including curriculum and instruction leadership (planning, goals, alignment, staff development), technology, accreditation, staff-personnel (hiring and supervision of district and building level administrators), community partnerships, capacity building, contract issues, ethics, and legal issues (focusing on special education) appropriate to each section along with other related areas associated with successful instructional leadership at the district level. Emphasis is placed on meeting the needs of each group of students in the district and the relationships that must be developed in order to achieve these ends.

EDA 762. Plcy,Poltics&Dcs Mkg. 3 Hours

SEMINAR: POLICY, POLITICS, AND DECISION MAKING - The course is required for students seeking a district superintendent license. The curriculum is both explanatory and exploratory and includes the following general topics: recommending, enforcing, and evaluating school district policy; political dimensions of district administration in the context of representative democracy; and, the application of problem solving and decision making paradigms in district administration. Focused attention is given to local stakeholder involvement in policy development and problem solving.

EDA 807. Eds Project Seminar. 3 Hours

EDS PROJECT SEMINAR - Completion of the research project is an integral part of this degree program. Students earn three semester hours of credit for the completion of their research project. This project will relate to the individual's coursework, interest, and work responsibilities.

EDA 810. Curric Eval&Instruct. 3 Hours

CURRICULUM EVALUATION AND INSTRUCTION - See EDA 710.

EDA 811. Curr Devlp&Ldrshp. 3 Hours

CURRICULUM DEVELOPMENT AND LEADERSHIP - See EDA 711.

EDA 812. Program&Staff Dev. 3 Hours

PROGRAM AND STAFF DEVELOPMENT - See EDA 712.

EDA 818. Superintendency. 3 Hours

SUPERINTENDENCY - See EDA 718.

EDA 833. Internship III. 3 Hours

INTERNSHIP III - This experience is intended to provide the participant with an opportunity to relate the coursework, research, simulation, and independent study in which he/she has engaged to actual problems encountered in administration.

EDA 851. Research. 3 Hours

RESEARCH - This course is designed to provide practical application and issues in research as they relate to the educational leader. The objective of the course is the development of a proposal to conduct a research project which the student will finish prior to completion of the Educational Specialist degree program.

EDA 852. Assess&Instr Sch Impr. 3 Hours

ASSESSMENT AND INSTRUCTION FOR SCHOOL IMPROVEMENT - This course focuses on the role of educational leaders with setting and attaining high academic goals for the primary purpose of maximized student learning outcomes, thus improving the practices of instruction and assessment. Educational leaders need an understanding of the best practices for enhancing teaching, curriculum, supervision, assessment and professional development. Educational leaders also need to know how to collect, interpret and analyze what's been assessed and to use this data with reporting to various constituents of the learning community. The focus of this course is the integration of theory with the practices of instruction and assessment for improving the teaching/learning process.

EDA 855. Legal Issues-Sch Ldr. 3 Hours

LEGAL ISSUES IN SCHOOL LEADERSHIP - This course addresses the statutes and judicial decisions which relate to schools and the responsibilities of boards of education, teachers, and administrators. Emphasis is placed on understanding the legal framework as it relates to providing quality education.

EDA 859. Law of Special Educ. 3 Hours

LAW OF SPECIAL EDUCATION A - review of pertinent legislation and litigation and litigation impacting on the rights of parents, students, and teachers involved in the process of providing a free appropriate public education for children with disabilities. Emphasis is placed on how teachers can, through an understanding of the law, facilitate active parent participation in the developmental progress of students. Teachers' specific responsibilities are described in relation to current requirements for development of appropriate educational programs.

EDA 860. District Level Mgt. 3 Hours

SEMINAR: DISTRICT LEVEL MANAGEMENT - See EDA 760.

EDA 861. Distr Level Leadrshp. 3 Hours

SEMINAR: DISTRICT LEVEL LEADERSHIP - This course addresses current topics related to district level issues including curriculum and instruction leadership (planning, goals, alignment, staff development), technology, accreditation, staff-personnel (hiring and supervision of district and building level administrators), community partnerships, capacity building, contract issues, ethics, and legal issues (focusing on special education) appropriate to each section along with other related areas associated with successful instructional leadership at the district level. Emphasis is placed on meeting the needs of each group of students in the district and the relationships that must be developed in order to achieve these ends.

EDA 862. Plcy,Poltics&Dsc Mkg. 3 Hours

SEMINAR: POLICY, POLITICS, AND DECISION MAKING - The course is required for students seeking a district superintendent license. The curriculum is both explanatory and exploratory and includes the following general topics: recommending, enforcing, and evaluating school district policy; political dimensions of district administration in the context of representative democracy; and, the application of problem solving and decision making paradigms in district administration. Focused attention is given to local stakeholder involvement in policy development and problem solving.

Health and Sport Science

Until further notice, applications are not being accepted for the Master of Science in Education, Physical Education Specialization.

Faculty

- Lloyd L. Laubach, Interim Department Chairperson
- Philip A. Anloague, PT, DHSc, OCS, MTC, Program Director
- C. Jayne Brahler, Ph.D., Research Coordinator
- Harold Merriman, PT, Ph.D., CLT, Assistant Professor, General Medicine Coordinator
- Kurt Jackson, PT, Ph.D., GCS, Assistant Professor , Neurology Coordinator
- Joaquin A. Barrios, PT, DPT, Ph.D.
- Betsy Donahue-Fillmore, PT, PhD., PCS
- Terri Glenn, PT, Ph.D
- Mary Insana Fisher, PT, MSPT, OCS, Advanced Therapy Coordinator
- Sean P. Gallivan, PT, MS, NCS, CBIS, C/NDT

The Department of Health and Sport Science offers a Doctor of Physical Therapy (DPT) and a Master of Science in Education (M.S.Ed.) in exercise science. The DPT is a fully accredited professional program that aims to graduate knowledgeable, service-oriented, self-assured, adaptable, reflective practitioners who, by virtue of critical and integrative thinking, lifelong learning, and ethical values, render independent judgments concerning patient/client needs that are supported by evidence; promote the health of the client; and enhance the professional, contextual, and collaborative foundations for practice. The M.S.Ed. in exercise science is designed to prepare individuals for careers in exercise science, corporate fitness, wellness, or personal training as well as for doctoral study in the exercise sciences. It has a scientific base which includes a substantive research emphasis. Graduates will also be prepared for the American College of Sports Medicine or National Strength and Conditioning Association certification exams. The degree requires a research/capstone project that must be submitted to a professional journal for publication prior to graduation.

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 the first term of enrollment in an effort to meet the student’s 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.

Assistantships

There are several graduate assistantships (GA) available within the Department of Health and Sport Science. In return for tuition remission and a stipend, GAs teach courses, labs, assist faculty with research,

and participate in other departmental activities as appropriate. Those interested in GA positions should contact the department chair.

Master of Science in Exercise Science

A minimum of 30 semester hours is required. Students must achieve an average of at least B (3.0) in all work undertaken to qualify for graduation. Students who receive grades of C or less in two courses will be dismissed from the program.

Research Component

Select one of the following:		3
EDU 990	RsSch Methods & Design	
EDT 660	Intro to Ed Research	
HSS 555	Srv-Rs Prc/Dsn-Sp Sc	

Select one of the following:		3
EDU 992	Quant RsSch&Stats	
HSS 560	Evl&Appl Stat-Sp Sci	

Select one of the following:		3
EDU 993	Adv Res Stat&Data Anl	
HSS 563	Adv Stats/Sport Sci	

Educational Component

EDT 500	Models of Teaching	3
HSS 540	Instructnl Stratgies	3

Professional Component

Select five of the following: *		15
HSS 531	Nutrition-Ex&Sport	
HSS 537	Biomechanics	
HSS 548	Safy&Law-Sprt Sci	
HSS 550	Physio Resp-Exercise	
HSS 551	Lab Technqs-Sprt Sci	
HSS 556	Issues-Sport Sci Sem	
HSS 591	Research Project	

Total Hours		30
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* HSS 591 Research Project and HSS 550 Physio Resp-Exercise are required.

Courses

HSS 531. Nutrition-Ex&Sport. 3 Hours

NUTRITION: EXERCISE AND SPORTS - Investigates the latest research trends in the nutritional assessment of the athlete. Topics will pertain to dietary needs, fluid replenishment, pre-game meals, and 'fad' diets for the athlete.

HSS 537. Biomechanics. 3 Hours

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.

HSS 540. Instructnl Stratgies. 3 Hours

INSTRUCTIONAL STRATEGIES - Contemporary research on teaching in physical education, sport instruction, and an in-depth study of Mosston's Spectrum of Teaching Styles serve as the primary foci of this course.

HSS 548. Safty&Law-Sprt Sci. 3 Hours

SAFETY AND LAW: SPORT SCIENCE - Study of basic safety measures to prevent injuries and avoid legal suits. Investigation of the fundamental principles involved in the legal aspects of sports in contemporary society. Analysis of specific court cases dealing with negligence in physical education and sport.

HSS 550. Physio Resp-Exercise. 3 Hours

PHYSIOLOGICAL RESPONSE IN EXERCISE - Study of the physiological changes that occur during exercise and training.

HSS 551. Lab Technqs-Sprt Sci. 3 Hours

LABORATORY TECHNIQUES IN SPORT SCIENCE - The practical application of selected sport science tests and measurements. Emphasis will be placed on human performance (strength, cardiovascular, flexibility, and body composition) testing.

HSS 555. Srv-Rs Prc/Dsn-Sp Sc. 3 Hours

SPORT SCIENCE RESEARCH AND DESIGN PROCESSES - This course is designed to develop an understanding of the nature of the general field of sport science research. It emphasizes the application of various research processes and design, learning by doing, and learning through example. Intended for use by individuals who have minimal knowledge of statistics.

HSS 556. Issues-Sport Sci Sem. 2 Hours

ISSUES IN SPORT SCIENCE - Seminar to investigate and report on a specific issue in sport science.

HSS 560. Evi&Appl Stat-Sp Sci. 3 Hours

EVALUATION AND APPLICATION OF STATISTICS IN SPORT SCIENCE - Application of descriptive and inferential statistics to sport science tests and measurements. Quantitative analysis of selected physical fitness, motor performance, and body composition data.

HSS 563. Adv Stats/Sport Sci. 3 Hours

ADVANCED STATISTICS IN SPORT SCIENCE - The theory and hands-on applications of various social science statistical analyses to include: independent and dependent groups t-test, analysis of variance and covariance, multiple regression and non-parametric analyses. Students will use selected statistical software packages to execute real-world analyses problems.

HSS 575. Ind Std-Phy Ed/Sp Sc. 1-6 Hours

INDEPENDENT STUDY IN PHYSICAL EDUCATION AND SPORT SCIENCE - Individual investigations of a problem in sport science. Students may not register for HSS 575 without having completed HSS 555 and HSS 560.

HSS 582. Intrnshp-Sport Sci. 1-4 Hours

INTERNSHIP IN SPORT SCIENCE - Job-related experience under the immediate supervision of personnel from a local sport science agency.

HSS 591. Research Project. 1-6 Hours

RESEARCH PROJECT - The development, planning, execution, analysis and manuscript completion of a research thesis in the sport sciences. The specific research question will be the student's choice with concurrence from his/her project advisor. Submission of the written product to a peer-reviewed research journal of at least national distribution is required before graduation. Students will also complete a successful oral defense of the thesis before the predesignated thesis team of at least three graduate faculty members from the School of Education & Allied Professions, two of which are from the Department of Health & Sport Science.

Teacher Education

Degrees:

- Master of Science in Education, Specialization in Transdisciplinary Early Childhood Education
- Master of Science in Education, Concentration in Interdisciplinary Educational Studies
- Master of Science in Education, Concentration in Literacy
- Master of Science in Education, Concentration in Teacher as Leader
- Master of Science in Education, Concentration in Early Childhood Leadership and Advocacy
- Master of Science in Education, Concentration in Technology-Enhanced Learning
- Master of Science, Music Education

Licenses:

- Early Childhood Education
- Adolescence to Young Adult Education
- Intervention Specialist Mild/Moderate
- Middle Childhood Education
- Multi-age Education

Endorsements:

- Computer Technology
- Early Childhood Generalist
- Middle Childhood Generalist
- Reading
- Pre-Kindergarten Special Needs

Certificate:

- Technology-Enhanced Learning
- Early Childhood Leadership and Advocacy
- Early Intervention

Connie Bowman, Department Chairperson

The mission of the Department of Teacher Education is the development of reflective, competent, and humane teachers. Recognizing the value of balancing theory and practice in professional education, the department provides candidates and faculty with the opportunity to be of service and to do research in P-12 settings. It dedicates itself to the discovery, construction, and development of the knowledge, skills, and dispositions that enable teachers to become educational leaders. The goal is to be a center of excellence in teacher education, thereby supporting continuing professional development and advocacy within the profession of teaching.

Students pursuing graduate work in the Department of Teacher Education have two options.

1. For those persons who are already licensed and wish to extend their knowledge, skills, and dispositions in a specialized field, the department offers several concentrations, identified by the admission code MSE.
2. For those persons seeking licensure information, please see the section labeled "Licensure Requirements."

All students completing the Master of Science in Education must complete a minimum of 30 semester hours including the following core requirements.

Core Requirements

EDT 500	Models of Teaching	3
EDT 502	Philosophy Study-Edu	3
or EDT 503	History of Educ-US	
EDT 660	Intro to Ed Research	3
Select one of the following options:		3-4
Option A		
EDT 662	Thesis	
EDT 663	Thesis	
Option B		
EDT 667	Ed Research Seminar	
Total Hours		12-13

Licensure Requirements

For those persons who have an undergraduate degree in a field other than education, the Department of Teacher Education offers programs leading to teacher licensure at the graduate level, identified by the admission code LIC. These licensure programs include early childhood education (LIC.ECE), middle childhood education (LIC.EMS), adolescence to young adult education (LIC.EYA), multiage education (LIC.EAG), and intervention specialist (LIC.EIS). All licensure programs include coursework, corresponding lab courses requiring field hours between 20-90 hours, and a clinical experience of 12 weeks full time in a classroom. Candidates who complete the requirements for licensure may choose to complete the core requirements for the master's degree, but it is not mandatory. Although candidates typically complete licensure prior to completing the master's degree, the coursework may be taken concurrently. If the candidate does wish to pursue the master's degree after completing the requirements for licensure, application to the appropriate master's degree program must be made.

In addition to the coursework required for the various licensure programs, the State of Ohio requires candidates to pass Praxis II Exams as a condition for license. Praxis requirements are specific to each licensure program. See advisor for details.

If candidates have student teaching as part of their program, they must apply for an assignment in the term prior to the student teaching term and must have satisfied all prerequisites and program requirements. Credit earned for student teaching does not apply to a master's degree program. Candidates must meet the approved reading requirements to qualify for the professional license.

The Department of Teacher Education also offers endorsement programs that can be added to an existing license or certificate. These programs are identified by the admission code END, and include reading endorsement (END.ERE), computer/technology endorsement (END.TEC), middle childhood generalist endorsement (END.EMS.GEN),

prekindergarten special needs endorsement (END.ECE.PSN) and early childhood generalist endorsement (END.ECE).

The Department of Teacher Education also issues the following certificates:

- Early Childhood Leadership and Advocacy (CER.ECL)
- Technology Enhanced Learning (CER.TEL)

Adolescence to Young Adult Education (LIC.EYA and MSE.EYA)

Completion of the program requirements for adolescence to young adult education leads to provisional licensure in the State of Ohio for grades 7 - 12. Candidates must complete approved licensure program coursework in one of the following teaching concentration areas: earth sciences, integrated language arts, integrated mathematics, integrated science, integrated social studies, life sciences, and physical sciences. Concentration requirements also include professional education coursework. Candidates must pass the required PRAXIS II specialty area exam(s) prior to and the clinical experiences. Candidates must also pass the PRAXIS II Principles of Learning and Teaching prior to licensure.

Candidates may choose to complete the master's degree after completing the requirements for licensure by completing the core requirements for the master's degree. Student teaching hours will not count toward the 30 semester hour requirement for a master's degree.

Adolescence to Young Adult Education

Professional Education Requirements

EDT 502	Philosophy Study-Edu	3
or EDT 503	History of Educ-US	
EDT 507	Profession of Tchng	2
EDT 507L	Prof of Teaching Lab	0-1
EDT 508	Thr Lrng&Hum Dev	3
EDT 509	Instrct, Asmnt&Mgt	3
EDT 570	Ed Dvse St Pop-Incl	3
EDT 602	Crtl Rdg-Cntnt Areas	3

Methods Courses

EDT 550	Mthds Tchng-LA (AYA)	3
EDT 551	Mthds Soc Std (AYA)	3
EDT 553	Mthds Math (AYA)	3
EDT 554	Mthds Science (AYA)	3
EDT 569	Student Teaching-AYA	3-7

Total Hours 32-37

Computer Technology Endorsement (END.TEC)

The State of Ohio Computer Technology Endorsement can be added only to an existing standard teaching certificate/license. The endorsement is for grades K-12. To obtain the Computer Technology Endorsement candidates must take the following 18 hours of coursework.

Program Requirements

EDT 629	Cognition Learn&Tech	3
EDT 630	Multimedia Productn	3
EDT 631	Pln/Asg Tch Enhd Lrn	3
EDT 632	Dist Learn-Dglt Age	3
EDT 633	Web Design/Develop	3

EDT 634	Bcm Eff Bldg Tech Ld	1-4
Total Hours		16-19

Early Childhood Education (LIC.ECE and MSE.ECE)

This graduate program, designed to prepare individuals who seek to work with young children and their families, leads to a Master of Science in education with a specialization in Transdisciplinary Early Childhood Education as well as the two Ohio Department of Education teaching licenses listed below. Coursework leading to the Pre-kindergarten Special Needs Endorsement is also available. It is also possible to meet the requirements for the Early Intervention Specialist Certificate for working with infants and toddlers and their families.

The Transdisciplinary Early Childhood Program is a blended program meaning that special education and regular education coursework is blended and cannot be separated. Students can seek to pursue the master's degree and any or all of the certificate/licensure options. Candidates must pass appropriate PRAXIS exams prior to licensure. Student teaching hours will not count toward the 30 semester hour requirement for a master's degree.

Early Childhood License (LIC.ECE)

Valid for teaching children who are typically-developing, at-risk, gifted, and who have mild to moderate educational needs. Licenses are issued for ages three through eight (prekindergarten through grade three).

Early Intervention Specialist License (LIC.ECE.EIS)

Valid for teaching children who have mild, moderate to intensive educational needs, including service coordination. Licenses are issued for ages three through eight (pre-kindergarten through grade three).

Pre-Kindergarten Special Needs Endorsement (END.ECE.PSN)

Formerly the Early Education of the Handicapped Validation (VAL.ECE.EEH). Valid teaching children ages 3-5 who have mild, moderate, to intensive needs. Must be attached to pre-kindergarten, certificate, a special education certificate, or a intervention specialist, or early childhood license.

Early Intervention Certificate (CER.ECE.EIC)

Valid for servicing infants and toddlers, ages birth through two, who have an identified developmental delay or who are at risk for developing such a delay. The young child is served within the context of its family.

Prerequisites/Co-requisites Coursework*

EDT 507	Profession of Tchng	2
EDT 507L	Prof of Teaching Lab ***	0-1
EDT 508	Thr Lrng&Hum Dev **	3
EDT 518	Intgrtd Curr&Inst-Kn ***	3
EDT 527	Studnt Tchng: K-Prim +	3-7
EDT 570	Ed Dvse St Pop-Incl ***	3
EDT 571	Lng Dvlp&Emergnt Lit **	3
EDT 600	Reading Methods ***	3
EDT 601	Phonics	3

EDT 602	Crtl Rdg-Cntnt Areas	3
EDT 603	Found of Literacy	3
Total Hours		29-34

Early Childhood Cohort Group Coursework+

EDT 510	Int Trn-Erly Chl Ed	2
EDT 511	Ingrtd Curric ECE ***	2
EDT 512	Summer Play Inst	2
EDT 513	Dvlp&Indv Appr Prac ***	3
EDT 516	Assmnt Brth to Age 8	3
EDT 517	E C Sem/Med&Hlth Iss ***	2
EDT 528	Intrn Trnsds ECE 3-5 ***	3
EDT 573	Collbrtng W/Fam-Agnc ***	3
EDT 605	Adv Stdy-Rdg-Lng Art ††	3
Total Hours		23

Pre-Kindergarten Special Needs Endorsment

Pre-requisites/Co-requisite Coursework

EDT 507	Profession of Tchng	2
EDT 507L	Prof of Teaching Lab ***	0-1
EDT 570	Ed Dvse St Pop-Incl ***	3
EDT 571	Lng Dvlp&Emergnt Lit	3
Total Hours		8-9

Coursework

EDT 510	Int Trn-Erly Chl Ed	2
EDT 511	Ingrtd Curric ECE	2
EDT 512	Summer Play Inst	2
EDT 513	Dvlp&Indv Appr Prac	3
EDT 516	Assmnt Brth to Age 8	3
EDT 517	E C Sem/Med&Hlth Iss ***	2
EDT 528	Intrn Trnsds ECE 3-5	3
EDT 573	Collbrtng W/Fam-Agnc	3
Total Hours		20

Early Intervention Certification

Prerequisites/Co-requisites Coursework

EDT 508	Thr Lrng&Hum Dev	3
EDT 570	Ed Dvse St Pop-Incl ***	3
EDT 571	Lng Dvlp&Emergnt Lit	3
Total Hours		9

Coursework†

EDT 510	Int Trn-Erly Chl Ed	2
EDT 511	Ingrtd Curric ECE ***	2
EDT 512	Summer Play Inst	2
EDT 514	Cur&Inst Inf&Tod SPN ***	3
EDT 516	Assmnt Brth to Age 8	3
EDT 517	E C Sem/Med&Hlth Iss	2
EDT 529	Intrn Erly Intrn EI ***	3-10

EDT 573	Collbrtng W/Fam-Agnc	3
Total Hours		20-27

- * To be eligible for either the Early Childhood or the Early Intervention Specialist licenses, 16 hours of the following coursework must be satisfied (undergraduate or graduate), before beginning coursework in a Cohort Group. The remaining courses can be taken as co-requisites during the Cohort Group coursework.
- ** If not previously completed, these courses must be taken during the first three terms of coursework. EDT 508 and EDT 570 must have been taken within the past five years. Evidence of 300 field hours must be provided.
- *** Field experience required.
- + EDT 527 may be taken later in the program during the same term as EDT 528.
- + EDT 517 is required only for Early Intervention Specialist License.
- ++
- † To be eligible for the Early Intervention Certificate from MR/DD the following coursework must be satisfied as a part of the cohort group.
- †† Only required for students who have not taken EDT 600 and EDT 600L, EDT 601, EDT 602, or EDT 603

Early Childhood Generalist Endorsement (END.ECE.GEN)

The Department of Teacher Education offers the Early Childhood Generalist Endorsement. This endorsement can be added to any existing Early Childhood (pk-3) license. The endorsement will allow teachers in self-contained 4th and 5th grade classrooms to teach the concentration areas of math, science and social studies.

Program Requirements		
EDT 519	Soc Std 4&5 Grade	3
EDT 523	Math 4&5 Grade	3
EDT 524	Science 4&5 Grades	3
Total Hours		9

Intervention Specialist Mild/Moderate (LIC.EIS.EMM and MSE.EIS.EMM)

Completion of this program leads to a license in Intervention Specialist Mild/Moderate. This program is for individuals wishing to teach students with mild/moderate disabilities (learning disabilities, mild cognitive disabilities, and emotional disturbance). Candidates must pass the PRAXIS II specialty area exam prior to Intervention Specialist licensure. Candidates may choose to complete the Master's Degree after completing the requirements for licensure by completing the core requirements for the master's degree. Student teaching hours will not count toward the 30 semester hour requirement for a master's degree.

Prerequisites, Teaching certificate/license and the following co-requisites:

Twelve semester hours in the teaching of Reading:

EDT 600	Reading Methods	3
EDT 600L	Reading Methods lab	0
EDT 450/601	Phonics, Spell, Voc	3
EDT 452/602	Readng-Contnt Areas	3
EDT 350/603	Find Literacy Thr Lit	3
Total Hours		12

Teachers holding an Adolescence to Young Adult, Middle School or Secondary License must have coursework in EDT 571 Lng Dvlp&Emergt Lit.

Professional Education Requirements

EDT 570	Ed Dvse St Pop-Incl	3
EDT 572	Intro Ed Mld/Mod Nds	3-10
EDT 573	Collbrtng W/Fam-Agnc	3
EDT 574	Behavior Management	3
EDT 575	Assessmnt:Mild/Mod	3
EDT 576	Curriculum:Mild/Mod	2
EDT 577	Career Ed/Spec Ed	2
EDT 578	Appl-Comp/Tech-Sp Ed	2
EDT 579	Inst Str/Mld/Mod	2
EDT 587	Stdnt Tchng Mild.Mod	1
or EDT 589	Std Tchng:Mild/Mod	
Total Hours		24-31

Literacy Specialist Certificate (CER.LTS) Endorsement (END.LTS)

The Literacy Specialist Endorsement offered by a consortium of eight Ohio universities including the University of Dayton is an advanced program in reading education. The program is designed as a one-year program, consisting of 18 semester-hours including both online coursework and a university based internship. Candidates holding a current professional teaching certificate or license in Ohio would complete the Endorsement option and apply the Literacy Specialist Endorsement credential to the existing certificate or license. Educators who do not hold a professional teaching certificate or license in Ohio would complete the university issued Certificate option.

Program Requirements

EDT 680	LTS Diverse Classrm	2
EDT 681	LTS Eff Assessment	2
EDT 682	LTS Pdgy Instruction	2
EDT 683	LTS Profssnl Dvlpmnt	2
EDT 684	Adv Lit Research	2
EDT 685	LTS Internship	4
Total Hours		14

Master of Science in Art Education (MSE.EAR)

The concentration in art education is designed to help individuals gain perspective in the teaching of art in a larger community as well as teach candidates how to research issues in art education.

Professional Education Requirements

EDT 590	Curr & Theory/Art Ed	3
EDT 591	Curr Issues Art Ed	3
EDT 629	Cognition Learn&Tech	3
VAH 500	Dir Resrch/Art Hst	3
Electives		6
Total Hours		18

Master of Science in Education and Allied Professions, concentration in Interdisciplinary Educational Studies (MSE.EIP)

A concentration in interdisciplinary studies offers the graduate candidate flexibility to design a program to meet diverse professional goals.

Candidates must select coursework from both the School of Education and Allied Professions and from at least one department outside of the SOEAP.

Interdisciplinary Educational Studies

Approved Concentration Courses in Education	6-12
Approved Concentration Courses outside of the SOEAP	6-12
Total Hours	12-24

Master of Science in Education and Allied Professions, concentration in Literacy (MSE.ERE)

The master's degree concentration in literacy prepares a candidate to assume professional and leadership roles related to literacy in a school setting. The coursework in this concentration supports the performance outcomes as outlined by the Standards for Reading Professionals as adopted by the International Reading Association. Candidates must have already completed prerequisite reading requirements:

EDT 600	Reading Methods	3
EDT 600L	Reading Methods lab	0
EDT 601	Phonics	3
EDT 602	Crtl Rdg-Cntnt Areas	3
EDT 603	Found of Literacy (or equivalent)	3
Total Hours		12

Concentration Requirements

EDT 605	Adv Stdy-Rdg-Lng Art	3
EDT 606	Assess&Eval /Rd Diff	3
EDT 607	Prac In Rd Intgrv Tch	3
EDT 608	The Writing Classrm	3
EDT 609	Iss,Trnds&Res in Rdg	3
EDT 650	Prf Dev-Teach Ldrs	3
Total Hours		18

Master of Science in Education and Allied Professions, concentration in Teacher as Leader (MSE.ETL)

The teacher as leader concentration offers teachers an opportunity to pursue professional development and leadership opportunities other than building and district administration. Teachers pursuing this degree would likely fulfill roles such as instructional leader, lead teacher, mentor teacher and curriculum committee member. All candidates in this concentration must complete the teacher leader core sequence; several options are available for specialty areas.

Professional Education Requirements

EDA 505	Educational Leadrshp	3
EDA 556	Ldrshp-Divrs Comm	3
EDT 650	Prf Dev-Teach Ldrs	3

Choose from one of the following specialty areas 9

Leadership

EDA 509	Supervsn&Prof Dvlp
EDA 511	Curriculum
EDA 515	School Law

Literacy

EDT 605	Adv Stdy-Rdg-Lng Art
EDT 609	Iss,Trnds&Res in Rdg
Elective	

Special Education

EDT 572	Intro Ed Mld/Mod Nds
EDT 573	Collbrtng W/Fam-Agnc
EDT 574	Behavior Management

Technology

EDT 629	Cognition Learn&Tech
EDT 631	Pln/Asg Tch Enhd Lrn
Elective	

Total Hours 18

Master of Science in Education, concentration in Early Childhood Leadership and Advocacy (MSE.ECL)

The Early Childhood Leadership and Advocacy concentration is designed for experienced early childhood professionals, such as program administrators, supervisors, teacher leaders and other professionals who work with and advocate for young children and their families. This program prepares candidates with the knowledge and skills required to be effective leaders and advocates in the field of early care and education. All candidates in this concentration must complete the graduate leadership core sequence and either the administration strand or the advocacy strand.

Graduate Leadership Requirements

EDA 505	Educational Leadrshp	3
EDA 509	Supervsn&Prof Dvlp	3
EDA 556	Ldrshp-Divrs Comm	3
EDT 565E	ECL Internship Sem	3

Choose from one of the following focus areas 11-18

Early Childhood Administration Strand

EDT 560E	ECEPrgmPrsnlMngt
EDT 560EL	ECPrgrmPrsnlMgtLab
EDT 561E	SptQtyClminsElyCrEd
EDT 561EL	SptQtyClminsElyCrEd
EDT 562E	RgnsLcsLwElyCreEd
EDT 562EL	RgnsLcsLwElyCrEdLb
EDT 563E	MngFnCsMktElyCareEd
EDT 563EL	MngFnCsMktElyCrEdLb

Early Childhood Advocacy Strand

EDT 510	Int Trn-Erly Chl Ed
EDT 561E	SptQtyClminsElyCrEd
EDT 561EL	SptQtyClminsElyCrEd
EDT 564E	AdvcyElyCreEd
EDT 573	Collbrtng W/Fam-Agnc

Early Childhood Leadership and Advocacy Certificate

EDT 560E	ECEPrgmPrsnlMngt	
EDT 560EL	ECPrmPrsnlMgtLab	
EDT 561E	SptQtyClminsElyCrEd	
EDT 561EL	SptQtyClminsElyCrEd	
EDT 562E	RgnsLcsLwElyCreEd	
EDT 562EL	RgnsLcsLwElyCrEdLb	
EDT 563E	MngFnscMktElyCareEd	
EDT 563EL	MngFnscMktElyCrEdLb	
EDT 564E	AdvcyElyCreEd	
EDT 565E	ECL Internship Sem	
Total Hours		23-30

Master of Science in Music Education (MSE.EUS)

The concentration in music education is offered collaboratively through the School of Education and Allied Professions and the College of Arts & Sciences. This program is designed for music educators and focuses on practical applications to the music classroom and rehearsal room.

Prerequisite: Candidates must have a bachelor's degree or licensure in music education.

Concentration Requirements

MUS 501	Grad Sem in Musiclgy	2
MUS 503	Teaching World Music	2
MUS 511	Music Theory	2
MUS 531	Current Issues Mus	2
Select one of the following:		1
MUS 535	Lit/Resrc for Classrm Music	
MUS 536	Lit Res Choral Music	
MUS 537	Lit & Res Instr Ens	
Select one of the following:		2
MUS 544	Adv. Tech. for Classrm Music	
MUS 545	Adv Choral Cond	
MUS 546	Adv Instr Cond	
MUS 599	Grad Perf Studies	1-2
Electives (courses in MUS, EDT, EDW or EDA)		6
Total Hours		18-19

Middle Childhood Education (LIC.EMS and MSE.EMS)

Completion of the program requirements for middle childhood education leads to provisional licensure in the State of Ohio for grades 4-9.

Candidates must complete approved licensure program coursework in two teaching concentration areas for initial licensure and one area for additional licensure. The teaching concentration areas include: mathematics, science, social studies, and reading/language arts. Concentration requirements also include professional education coursework. Candidates must pass the required PRAXIS II specialty area exam(s) prior to EDT 509 Instrct, Asmnt&Mgt and the clinical experiences. Candidates must also pass the PRAXIS II Principles of Learning and Teaching prior to licensure.

Candidates may choose to complete the master's degree after completing the requirements for licensure by completing the core requirements for the master's degree. Student teaching hours will not count toward the 30 semester hour requirement for a master's degree.

Professional Education Requirements

EDT 502	Philosphcl Study-Edu	3
or EDT 503	History of Educ-US	
EDT 507	Profession of Tchng	2
EDT 507L	Prof of Teaching Lab	0-1
EDT 508	Thr Lrng&Hum Dev	3
EDT 509	Instrct, Asmnt&Mgt	3
EDT 530	Mdle Sch Prin&Prac	3
EDT 570	Ed Dvse St Pop-Incl	3

Reading Course Requirements

EDT 600	Reading Methods	3
EDT 601	Phonics	3
EDT 602	Crtl Rdg-Cntnt Areas	3
EDT 603	Found of Literacy	3

Methods Courses

Select two of the following:		6-7
EDT 532	MC Lang&Arts Mthds	
EDT 533	MC Math Methods	
EDT 534	MC Science Methods	
EDT 535	MC Social St Mthds	
EDT 549	Student Teachng-MC	

Total Hours 35-37

Middle Childhood Generalist Endorsement (END.EMS.GEN)

The Department of Teacher Education offers the Middle Childhood Generalist Endorsement. This endorsement can be added to any existing Middle Childhood License for any combination of the four areas of concentration. The generalist endorsement will allow teachers to teach grades 4-6 only. Candidates must pass the required PRAXIS II exam(s).

Additional prerequisites or equivalents may be required. Transcript 11 evaluation may be necessary.

Language and Reading Requirements

EDT 532	MC Lang&Arts Mthds *	3
EDT 608	The Writing Classrm	3

Mathematics Requirements

EDT 533	MC Math Methods **	3
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Science Requirements

EDT 534	MC Science Methods +	3
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Social Studies Requirements

EDT 535	MC Social St Mthds ***	3
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Total Hours 26

* Can also be taken as EDT 426.

** Can also be taken as EDT 427.

*** For more information about this course, please see the current issue of the Undergraduate Bulletin.

+ Can also be taken as EDT 429.

Multi-age Education (LIC.EAG and MSE.EAG)

Completion of the program requirements for multi-age education leads to license in the State of Ohio for grades pre-kindergarten through twelve.

Candidates must complete approved licensure program coursework in one of the following teaching concentration areas: foreign language, visual arts, and music. Concentration requirements also include professional education coursework. Candidate must pass required PRAXIS II specialty area exam(s) or other required state of Ohio licensure exams prior to EDT 509 Instrct, Asmnt&Mgt and the clinical experiences. Candidates must also pass the PRAXIS II Principles of Learning and Teaching prior to licensure.

Candidates may choose to complete the master's degree after completing the requirements for licensure. Student teaching hours will not count toward the 30 semester hour requirement for a master's degree. See specific program requirements for details.

Professional Education

EDT 502	Philosphcl Study-Edu	3
or EDT 503	History of Educ-US	
EDT 507	Profession of Tchng	2
EDT 507L	Prof of Teaching Lab	0-1
EDT 508	Thr Lrng&Hum Dev	3
EDT 509	Instrct, Asmnt&Mgt	3
EDT 570	Ed Dvse St Pop-Incl	3
EDT 602	Crtl Rdg-Cntnt Areas	3
Methods courses specific to licensure: See advisor for specific courses.		3
Student teaching specific to licensure: See advisor for specific courses.		3-7
Total Hours		23-28

Reading Endorsement (END.ERE)

The Reading Endorsement can be added only to an existing standard teaching certificate/license. The endorsement is for grades k - 12. To obtain the Reading Endorsement, candidates must have taken the required twelve hours in the teaching of reading as outlined by the State of Ohio Licensure Requirements. These may be taken at the graduate or undergraduate level. In addition to the required coursework, candidates must pass the PRAXIS II specialty area exam prior to receiving the endorsement.

EDT 605	Adv Stdy-Rdg-Lng Art	3
EDT 606	Assess&Eval /Rd Diff	3
EDT 607	Prac In Rd Intgrv Tch	3
Total Hours		9

Technology-Enhanced Learning (CER.TEL and MSE.TEL)

This graduate program prepares in-service teachers to integrate technology-enhanced learning into their own teaching and to assist other professionals in their buildings in accomplishing the same. The courses focus on helping master's candidates increase teacher and student learning in the context of a technology-enhanced, problem-based learning environment. Some courses for this degree apply to the Computer Technology Endorsement from the State of Ohio.

Concentration Requirements

EDT 629	Cognition Learn&Tech	3
EDT 630	Multimedia Productn	3
EDT 631	Pln/Asg Tch Enhd Lrn	3
EDT 632	Dist Learn-Dglt Age	3

EDT 633	Web Design/Develop	3
EDT 634	Bcm Eff Bldg Tech Ld	1-4
Total Hours		16-19

Courses

EDT 500. Models of Teaching. 3 Hours

MODELS OF TEACHING - This course is a study of eight instructional models specifically designed to meet the needs of diverse learners. Candidates will be expected to design instructional units that integrate the models.

EDT 502. Philosophcl Study-Edu. 3 Hours

PHILOSOPHICAL STUDIES IN EDUCATION - This course is a study of the 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, educational administration, and psychological services.

EDT 503. History of Educ-US. 3 Hours

HISTORY OF EDUCATION IN THE UNITED STATES - This course is a study of the relationship of schools and social change in the United States from Colonial times to the present. Interpretations of changes in educational policies for the development of a critical theory of education are discussed.

EDT 506. Hist Cath K12 Sch US. 3 Hours

HISTORY OF CATHOLIC K12 SCHOOLS IN THE US - History of Catholic K12 Schools in the United States.

EDT 507. Profession of Tchng. 2 Hours

THE PROFESSION OF TEACHING - This course is designed to study the principal components of effective teaching that facilitate the learning of all students. Current educational issues, the PRAXIS III/ Pathwise framework, INTASC standards, other professional standards, developing a community of learners, service learning and teaching incorporating the Marianist traditions are other topics of the course. Field experience required. Prerequisite(s): Acceptance to Teacher Education. Corequisite(s): EDT 507L.

EDT 507L. Prof of Teaching Lab. 0-1 Hours

PROFESSION OF TEACHING LAB - This course accompanies EDT 507, and is designed to study the principal components of effective teaching and will serve primarily, initial licensure candidates. Corequisite(s): EDT 507.

EDT 508. Thr Lrng&Hum Dev. 3 Hours

THEORIES OF LEARNING & HUMAN DEVELOPMENT - This course is a study of theories of learning and human development (physical, social, emotional, intellectual, and moral) as they relate to PK - 12 practices, including early, middle, and adolescent/young adult licensure areas.

EDT 509. Instrct, Asmnt&Mgt. 3 Hours

INSTRUCTION, MANAGEMENT, AND ASSESSMENT - This course is a study of curriculum, instruction, management styles, and assessment techniques that promote student learning and achievement. Emphasis is on classroom-based theory-to-practice connections. This course is primarily intended for initial licensure candidates. Field experience required. Prerequisite(s): EDT 508; a passing score on the PRAXIS II specialty area exam(s).

EDT 509L. Inst Mgt & Asmt Lab. 0 Hours

INSTRUCTION, MANAGEMENT, AND ASSESSMENT LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to instruction, management, and assessment in school settings. Corequisite(s): EDT 509.

EDT 510. Int Trn-Erly Chl Ed. 2 Hours

INTRODUCTION TO TRANSDISCIPLINARY EARLY CHILDHOOD EDUCATION - This course is an introduction to the early childhood cohort group and to transdisciplinary methods of teaming and collaboration. Candidates will work in teams to explore educational models and current issues associated with the field of early childhood education. This course is technology enhanced. Early childhood cohort application must have been submitted and approved before registering for this course. Prerequisite(s): (EDT 504 or EDT 508); EDT 570.

EDT 510L. Int Tran EC Lab. 0-1 Hours

INTRODUCTION TO TRANSDISCIPLINARY EARLY CHILDHOOD EDUCATION LABORATORY - This lab supports is designed for international students who are new to American culture and educational practice. Students will develop field related vocabulary while exploring schools and centers in the Miami Valley and processing what they see.

EDT 511. Ingrtd Curric ECE. 2 Hours

INTEGRATED CURRICULUM FOR YOUNG CHILDREN - This course introduces and develops the theoretical and practical bases for the creation of integrated curriculum for infants, toddlers, and preschoolers using a play-based approach. The content areas of mathematics and science provide opportunities for Reggio style documentation, and the Ohio Early Learning Academic Content Standards are emphasized.

EDT 512. Summer Play Inst. 2 Hours

SUMMER PLAY INSTITUTE - The Summer Play Institute is a field-based forum in which candidates implement the integrated curriculum activities developed in EDT 511. Candidates will engage in child-initiated play sessions that will be videotaped and reviewed by members of the cohort and the instructor. Supported play which facilitates development will be emphasized. Prerequisite(s): EDT 510 (may be taken as a corequisite).

EDT 513. Dvlp&Indv Appr Prac. 3 Hours

DEVELOPMENTALLY & INDIVIDUALLY APPROPRIATE PRACTICE - The course shifts focus from the age-appropriate practice to the needs of the individual child and family. Candidates will learn to develop practice that supports and facilitates the development of young children ages birth to 8 - specifically those with disabilities. Significant review of related research drives this course. Field experience required. Prerequisite(s): EDT 510.

EDT 514. Cur&Inst Inf&Tod SPN. 3 Hours

CURRICULUM & INSTRUCTION FOR INFANTS & TODDLERS WITH SPECIAL NEEDS - This course focuses on the planning and instructional methods, materials and evaluation techniques for working with young children who are at risk for or who have been identified with developmental delays (birth-age 3) and their families. Field experience required. Prerequisite(s): EDT 510.

EDT 514L. cur/Inst Sp Need Lab. 0 Hours

CURRICULUM AND INSTRUCTION FOR INFANTS AND TODDLERS WITH SPECIAL NEEDS LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to planning, instruction, and assessment for children with special needs. Corequisite(s): EDT 514.

EDT 515. Inf/Tod Dvlpmt Prac. 2 Hours

INFANT AND TODDLER DEVELOPMENT PRACTICUM 2 - sem. hrs. This guided practicum will provide an opportunity for candidates to develop and apply their knowledge of typical and atypical development from conception to age 3 as they observe young children in both structured and naturalistic settings. Developmental milestones as well as related risk factors will be emphasized. Field experience required. Prerequisite(s): EDT 510.

EDT 516. Assmnt Brth to Age 8. 3 Hours

COLLABORATIVE ASSESSMENT BIRTH TO AGE 8 - This course is the study of the transdisciplinary and collaborative nature of assessment in diagnosis, screening, and instruction of young children (birth to age 8) who are typically developing as well as those with disabilities. The course will focus on the role of the family in the assessment process. Systemic observation using a play-based approach will be emphasized. Prerequisite(s): EDT 510.

EDT 517. E C Sem/Med&Hlth Iss. 2 Hours

EARLY CHILDHOOD SEMINAR ON MEDICAL AND HEALTH ISSUES - This course is the study of the health care and medical needs associated with young children with disabilities. Prerequisite(s): EDT 510.

EDT 518. Intgrtd Curr&Inst-Kn. 3 Hours

INTEGRATED CURRICULUM & INSTRUCTION FOR KINDERGARTEN-PRIMARY GRADES - This course will focus on integrating curriculum and instruction for kindergarten and the primary grades. Special attention will be paid to the Ohio academic content standards with an emphasis on science, social studies, and math instruction. Planning, instructional methods, materials, and evaluation techniques for teaching children on the kindergarten-primary levels will be covered. Field experience required. Prerequisite(s): EDT 509.

EDT 518L. Int Cur&Inst K-P Lab. 0 Hours

INTEGRATED CURRICULUM & INSTRUCTION FOR KINDERGARTEN-PRIMARY GRADES LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to integrated planning, instruction, and assessment in elementary school settings. Corequisite(s): EDT 518.

EDT 519. Soc Std 4&5 Grade. 3 Hours

SOCIAL STUDIES FOR FOURTH & FIFTH GRADES A - course designed to address social studies content including social aspects of learning, and pedagogy specific to 4th/5th grades. Prerequisite(s): ECE licensure or permission of instructor.

EDT 523. Math 4&5 Grade. 3 Hours

EARLY CHILDHOOD MATHEMATICS GRADES FOURTH & FIFTH METHODS - Planning, diagnosis, instructional methods, materials, assessment, and evaluation techniques for teaching mathematics to students in grades 4 and 5 with varied needs and abilities using a tier method. Topics include: Ohio Academic Content Standards, applications and instructional techniques that address proficiency testing, resources, technologies, manipulatives, interdisciplinary connections, grouping techniques, current research, and 21st Century Skills. Prerequisite(s): Ohio, Licensed PK-3 teacher or Junior standing in UD ECE program.

EDT 524. Science 4&5 Grades. 3 Hours

EARLY CHILDHOOD SCIENCE GRADES FOUR & FIVE METHODS - Planning, diagnosis, instructional methods, materials, assessment, and evaluation techniques for teaching science to students in grades 4 and 5 with varied needs and abilities using a tier method. Topics include: Ohio Academic Content Standards, applications and instructional techniques that address proficiency testing, resources, technologies, manipulatives, interdisciplinary connections, grouping techniques, current research, and 21st Century Skills. Prerequisite(s): Ohio, Licensed PK-3 teacher or Junior standing in UD ECE program.

EDT 526. Student Teach-K-Prim. 1 Hour

STUDENT TEACHING-K-PRIM - Student Teaching K-Prim.

EDT 527. Student Tchng: K-Prim. 3-7 Hours

STUDENT TEACHING K-PRIMARY - Full-time supervised and evaluated teaching in a K-3 setting. The candidate will demonstrate the knowledge, skills, attitudes and dispositions required of a beginning K-Primary teacher. Prerequisite(s): Registration for the course and approved student teaching/internship application packet submitted to the Department of Teacher Education at the beginning of the term prior to the student teaching experience.

EDT 528. Intrn Trnsds ECE 3-5. 3 Hours

INTERNSHIP IN TRANSDISCIPLINARY EARLY CHILDHOOD EDUCATION (AGES 3-5) - Supervised and evaluated teaching in a preschool special needs setting. The candidate will demonstrate the knowledge, skills, attitudes and dispositions needed to comply with the National Association for the Education of Young Children (NAEYC) and the Division for Early Childhood of the Council of Exceptional Children (DEC) guidelines for appropriate practice. Field experience required. Prerequisite(s): Registration for the course and approved student teaching/internship application packet submitted to the Department of Teacher Education at the beginning of the term prior to the student teaching experience.

EDT 529. Intrn Eryl Intrn El. 3-10 Hours

INTERNSHIP IN EARLY INTERVENTION - Supervised and evaluated teaching in an infant/toddler educational setting. Candidates are to demonstrate the knowledge, skills, attitudes and dispositions needed to comply with the National Association for the Education of Young Children (NAEYC) and the Division for Early Childhood and the Council of Exceptional Children (DEC) guidelines for appropriate practice. Field experience required. Prerequisite(s): Registration for the course and approved student teaching/internship application packet submitted to the Department of Teacher Education at the beginning of the term prior to the student teaching experience.

EDT 530. Mdle Sch Prin&Prac. 3 Hours

THE MIDDLE SCHOOL PRINCIPLES & PRACTICES - This course is primarily a study of organization (school structure), philosophy, and curriculum of middle-level education (9-14 year olds), grades 4-9. It is designed to present the theoretical knowledge base about middle-level (school) education. Issues and concerns, current trends and the essential elements relating to middle level education will be discussed throughout the semester of study. A variety of inquiry methods will be modeled that encourage critical thinking skills.

EDT 530L. Mid Sch Prin & Prac. 0 Hours

MIDDLE SCHOOL PRINCIPLES AND PRACTICES - Middle school principles and practices.

EDT 532. MC Lang&Arts Mthds. 3 Hours

READING/LANGUAGE ARTS FOR MIDDLE CHILDHOOD - This course focuses on the planning, diagnosis, instructional methods, materials, assessment, and evaluation techniques for teaching reading/language arts to students in the middle schools with varied needs and abilities. The topics emphasized in this course include: an understanding of Ohio's academic content standards for grades 4-9, applications and instructional techniques that address the Ohio achievement tests, various resources, technologies, interdisciplinary connections, various grouping techniques, and current research. Prerequisite(s): EDT 530; (EDT 531 or EDT 509 and EDT 509L); EDT 603; passing score on PRAXIS II specialty area exam.

EDT 532G. MC LA 4-6 Gen Meth. 3 Hours

MIDDLE CHILDHOOD LANGUAGE ARTS 4-6 GENERAL METHODS - Middle Childhood Language Arts 4-6 General Methods.

EDT 532L. Rgd/LA Meth MC Lab. 0 Hours

READING/LANGUAGE ARTS METHODS FOR MIDDLE CHILDHOOD EDUCATION LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to teaching reading/language arts to students in middle schools. Corequisite(s): EDT 532.

EDT 533. MC Math Methods. 3 Hours

MATH FOR MIDDLE CHILDHOOD - This course focuses on the planning, diagnosis, instructional methods, materials, assessment and evaluation techniques for teaching mathematics to students in the middle schools with varied needs and abilities. The topics emphasized in this course include: an understanding of Ohio's academic content standards for grades 4-9, applications and instructional techniques that address the Ohio achievement tests, various resources, technologies, manipulatives, and other visuals, interdisciplinary connections, various grouping techniques, and current research. Prerequisite(s): EDT 530; (EDT 531 or EDT 509 and EDT 509L); EDT 603; passing score on PRAXIS II specialty area exam.

EDT 533G. MC Math 4-6 Gen Meth. 3 Hours

MIDDLE CHILDHOOD MATH 4-6 GENERAL METHODS - Middle Childhood Math 4-6 General Methods.

EDT 533L. Math Medhods MC Lab. 0 Hours

MATH METHODS FOR MIDDLE CHILDHOOD EDUCATION LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to teaching math to students in middle schools. Corequisite(s): EDT 533.

EDT 534. MC Science Methods. 3 Hours

SCIENCE FOR MIDDLE CHILDHOOD - This course focuses on the planning, diagnosis, instructional methods, materials, assessment, and evaluation techniques for teaching science to students in the middle schools with varied needs and abilities. The topics emphasized in this course include: an understanding of Ohio's academic content standards for grades 4-9, applications and instructional techniques that address the Ohio achievement tests, various resources, technologies, experiments, and other hands-on experiences, interdisciplinary connections, various grouping techniques, and current research. Prerequisite(s): EDT 530; (EDT 531 or EDT 509); EDT 603; passing score on PRAXIS II specialty area exam. Corequisite(s): A second content methods course.

EDT 534G. MC Sci 4-6 Gen Meth. 3 Hours

MC SCI 4-6 GEN METH MC - Sci 4-6 Gen Meth.

EDT 534L. Science Meth MC Lab. 0 Hours

SCIENCE METHODS FOR MIDDLE CHILDHOOD EDUCATION LAB - Science Methods for MCE Lab: Corequisite(s): EDT 534.

EDT 535. MC Social St Mthds. 3 Hours

SOCIAL STUDIES FOR MIDDLE CHILDHOOD - This course focuses on the planning, diagnosis, instructional methods, materials, assessment, and evaluation techniques for teaching social studies to students in the middle schools with varied needs and abilities. The topics emphasized in this course include: an understanding of Ohio's academic content standards for grades 4-9, applications and instructional techniques that address the Ohio achievement tests, various resources, technologies and active hands-on experiences, other visuals, interdisciplinary connections, various grouping techniques, and current research. Prerequisite(s): EDT 530; (EDT 531 or EDT 509); EDT 603; passing score on PRAXIS II specialty area exam. Corequisite(s): A second content methods course.

EDT 535G. MC SocS 4-6 Gen Meth. 3 Hours

MIDDLE CHILDHOOD SOCIAL STUDIES 4-6 GENERAL METHODS - Middle Childhood Social Studies 4-6 General Methods.

EDT 535L. Soc Stud Meth MC Lab. 0 Hours

SOCIAL STUDIES METHODS FOR MIDDLE CHILDHOOD EDUCATION LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to teaching social studies to students in middle schools. Corequisite(s): EDT 535.

EDT 549. Student Teachng-MC. 3-7 Hours

STUDENT TEACHING - MIDDLE CHILDHOOD - Full-time supervised and evaluated teaching in grades 4-9 in at least one of the two candidate's concentration subjects. The candidate will demonstrate the knowledge, skills and dispositions required of a beginning middle-level teacher. Attendance at weekly seminars is required. Prerequisite(s): (Two of the following: EDT 532, EDT 533, EDT 534, EDT 535); formal admission to student teaching a full term in advance.

EDT 550. Mthds Tchg-LA (AYA). 3 Hours

INTEGRATED LANGUAGE ARTS METHODS FOR ADOLESCENT TO YOUNG ADULT - This course focuses on planning, diagnosis, instructional methods, materials, assessment, and evaluation techniques for teaching all levels of integrated language arts to students in grades 7-12 with varied needs and abilities. Topics include: understanding Ohio's academic content standards for grades 7-12, applications and instructional techniques that address the Ohio achievement and competency tests, various resources, technologies, interdisciplinary connections, various grouping techniques, best practices, and current research. This course is for initial licensure candidates. Field experience required. Prerequisite(s): EDT 508, EDT 509; passing score on PRAXIS II specialty area exam.

EDT 550L. Int Lang/Art AYA Lab. 0 Hours

INTEGRATED LANGUAGE ARTS METHODS FOR ADOLESCENT TO YOUNG ADULT LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to teaching integrated language arts to students in grades 7-12. Corequisite(s): EDT 550.

EDT 551. Mthds Soc Std (AYA). 3 Hours

INTEGRATED SOCIAL STUDIES METHODS FOR ADOLESCENT TO YOUNG ADULT - This course focuses on planning, diagnosis, instructional methods, materials, assessment, and evaluation techniques for teaching all levels of integrated social studies to students in grades 7-12 with varied needs and abilities. Topics include: understanding Ohio's academic content standards for grades 7-12, applications and instructional techniques that address the Ohio achievement and competency tests, various resources, technologies, hands-on activities, interdisciplinary connections, various grouping techniques, best practices, and current research. This course is for initial licensure candidates. Field experience required. Prerequisite(s): EDT 508, EDT 509; passing score on PRAXIS II specialty area exam .

EDT 551L. In Soc StdMth AYA lab. 0 Hours

INTEGRATED SOCIAL STUDIES METHODS FOR ADOLESCENT TO YOUNG ADULT LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to teaching integrated social studies to students in grades 7-12. Corequisite(s): EDT 551.

EDT 552. Foreign Lang for AYA. 3 Hours

FOREIGN LANGUAGE METHODS FOR ADOLESCENT TO YOUNG ADULT - This course focuses on planning, diagnosis, instructional methods, materials, assessment, and evaluation techniques for teaching all levels of foreign language to students in grades 7-12 with varied needs and abilities. Topics include: understanding Ohio's academic content standards for grades 7-12, applications and instructional techniques that address the Ohio achievement and competency tests, various resources, technologies, hands-on activities and other visuals, interdisciplinary connections, various grouping techniques, best practices, and current research. This course is for initial licensure candidates. Field experience required. Prerequisite(s): EDT 508, EDT 509; passing score on PRAXIS II specialty area exam .

EDT 552L. Frgn Lang Meth AYA. 0 Hours

FOREIGN LANGUAGE METHODS FOR ADOLESCENT TO YOUNG ADULT LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to teaching foreign language to students in grades 7-12. Corequisite(s): EDT 552.

EDT 553. Mthds Math (AYA). 3 Hours

MATH METHODS FOR ADOLESCENT TO YOUNG ADULT - This course focuses on planning, diagnosis, instructional methods, materials, assessment, and evaluation techniques for teaching all levels of mathematics to students in grades 7-12 with varied needs and abilities. Topics include: understanding Ohio's academic content standards for grades 7-12, applications and instructional techniques that address the Ohio achievement and competency tests, various resources, technologies, manipulatives, hands-on activities, and other visuals, interdisciplinary connections, various grouping techniques, best practices, and current research. This course is for initial licensure candidates. Field experience required. Prerequisite(s): EDT 508, EDT 509; passing score on PRAXIS II specialty area exam.

EDT 553L. Math Meth AYA Lab. 0 Hours

MATH METHODS FOR ADOLESCENT TO YOUNG ADULT LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to teaching mathematics to students in grades 7-12. Corequisite(s): EDT 553.

EDT 554. Mthds Science (AYA). 3 Hours

SCIENCE METHODS FOR ADOLESCENT TO YOUNG ADULT - This course focuses on planning, diagnosis, instructional methods, materials, assessment, and evaluation techniques for teaching all levels of science to students in grades 7-12 with varied needs and abilities. Topics include: understanding Ohio's academic content standards for grades 7-12, applications and instructional techniques that address the Ohio achievement and competency tests, various resources, technologies, hands-on activities, and interdisciplinary connections, various grouping techniques, safety issues, best practices, and current research. This course is for initial licensure candidates. Field experience required. Prerequisite(s): EDT 508, EDT 509; passing score on PRAXIS II specialty area exam .

EDT 554L. Science Meth AYA Lab. 0 Hours

SCIENCE METHODS FOR ADOLESCENT TO YOUNG ADULT LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to teaching science to students in grades 7-12. Corequisite(s): EDT 554.

EDT 556. Whole Language III. 4 Hours

WHOLE LANGUAGE III - Whole Language III.

EDT 559. Music Stdnt Teaching. 3-7 Hours

MUSIC STUDENT TEACHING - Full-time supervised and evaluated teaching in music classes in schools (P-12). The candidate will demonstrate the knowledge, skills and dispositions required of a beginning music teacher. Attendance at a weekly seminar is required. The student teaching seminar is designed so that student teachers may reflect and share experiences with one another and with experienced teachers. Each seminar will include informal sharing/discussion sessions as well as formal presentations on topics of importance related to the practice of music education as well as securing a teaching position.

EDT 560E. ECEPrgmPrsnmMngt. 3 Hours

EARLY CHILDHOOD PROGRAM & PERSONNEL MANAGEMENT - This course is the first in the Early Childhood Leadership program. Students will explore program and personnel management and human relations in early care and education. Prerequisite(s): Admittance to the Graduate ECE Leadership program Corequisite(s): EDT 560E Lab.

EDT 560EL. ECPrgmPrsnmMgtLab. 0 Hours

EARLY CHILDHOOD PROGRAM & PERSONNEL MANAGEMENT - This lab course is a corequisite the first in the Early Childhood Leadership program. Students will explore program and personnel management and human relations in early care and education. Prerequisite(s): Admittance to the Graduate ECE Leadership program Corequisite(s): EDT 560E.

EDT 561E. SptQtyClmnsElyCrEd. 3 Hours

SUPPORTING QUALITY CURRICULUM & INSTRUCTION IN EARLY CARE & EDUCATION - This course provides opportunities for students to use research to identify and support quality early childhood curriculum, instruction and assessment Prerequisite(s): EDT 560E Corequisite(s): EDT 561E LAB.

EDT 561EL. SptQtyClmnsElyCrEd. 0 Hours

SUPPORTING QUALITY CURRICULUM & INSTRUCTION IN EARLY CARE & EDUCATION - This course provides opportunities for students to use research to identify and support quality early childhood curriculum, instruction and assessment. Prerequisite(s): EDT 560E Corequisite(s): EDT 561E.

EDT 562E. RgnsLcsLwErlyCreEd. 3 Hours

REGULATIONS, LICENSING AND THE LAW IN EARLY CARE & EDUCATION - This course addresses ethics in early care and education as well as issues related to health, safety and nutrition regulations including first aid, communicable disease, safety policies and practices. Reporting and recognizing child abuse is addressed. Students will learn to respond to regulations, licensing and laws that impact programs for young children. Prerequisite(s): EDT 560E Corequisite(s): EDT 562E Lab.

EDT 562EL. RgnsLcsLwErlyCrEdLb. 0 Hours

REGULATIONS, LICENSING AND THE LAW IN EARLY CARE & EDUCATION - This lab course addresses ethics in early care and education as well as issues related to health, safety and nutrition regulations including first aid, communicable disease, safety policies and practices. Reporting and recognizing child abuse is addressed. Students will learn to respond to regulations, licensing and laws that impact programs for young children. Prerequisite(s): EDT 560E Corequisite(s): EDT 562.

EDT 563E. MngFnscMktErlyCareEd. 3 Hours

MANAGING FINANCES & MARKETING IN EARLY CARE & EDUCATION - Students will explore strategies for managing finances and developing marketing plans in the field of early care and education. Field Experience required. Prerequisite(s): EDT560E Corequisite(s): EDT 563 Lab.

EDT 563EL. MngFnscMktErlyCrEdLb. 0 Hours

MANAGING FINANCES & MARKETING IN EARLY CARE & EDUCATION - This lab supports students in EDT 563E as they explore managing finances and developing marketing plans in the field of early care and education. Prerequisite(s): EDT 560E Corequisite(s): EDT 563E.

EDT 564E. AdvcyErlyCreEd. 3 Hours

ADVOCACY IN EARLY CARE & EDUCATION - This course explores current political, educational and societal issues related to early care and education and examines how teachers develop leadership skills to become better advocates for children, families, and the profession. Prerequisite(s): EDT 560E.

EDT 565E. ECL Internship Sem. 3 Hours

INTERNSHIP & PRACTICUM IN EARLY CHILDHOOD LEADERSHIOP - This internship serves as the culminating experience where students demonstrate the knowledge, skills and disposition addressed in the 4 preceding early childhood leadership courses. Students complete a 6 week full time internship working with/as a early childhood director or administrator. Prerequisite(s): EDT 560E, EDT 561E, EDT 562E, EDT 563E.

EDT 568. Stdnt Tch-Lng Pk-12. 3-7 Hours

STUDENT TEACHING LANGUAGES PK-12 - Student Teaching Languages PK-12.

EDT 569. Student Teachng-AYA. 3-7 Hours

STUDENT TEACHING - ADOLESCENT TO YOUNG ADULT - Full-time supervised and evaluated teaching in the content area in a junior or senior high school classroom. The candidate will demonstrate the knowledge, skills, and dispositions required of a beginning secondary teacher. Attendance at weekly seminars is required. Prerequisite(s): Passing score on PRAXIS II specialty area exam; completion of 80% of content area courses; formal admission to student teaching a semester in advance.

EDT 570. Ed Dvse St Pop-Incl. 3 Hours

EDUCATING DIVERSE STUDENT POPULATIONS IN INCLUSIVE SETTINGS - This course is the study of the characteristics, legal aspects, and educational needs of students with challenges in learning. The role of the general educator in making curricular modifications and accommodations, adapting instruction and collaborating with other educators to facilitate learning in the general classroom for these students is examined. Field experience required.

EDT 570L. Ed Dvrs St Pop Lab. 0-1 Hours

EDUCATING DIVERSE STUDENT POPULATIONS IN INCLUSIVE SETTINGS LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to educating students with special needs in school settings. Corequisite(s): EDT 570.

EDT 571. Lng Dvlp&Emergnt Lit. 3 Hours

LANGUAGE DEVELOPMENT & EMERGENT LITERACY - This course is the study of oral language and literacy development in children, with implications for all learners, including children with special needs. Prerequisite(s): EDT 570.

EDT 572. Intro Ed Mid/Mod Nds. 3-10 Hours

INTRODUCTION TO EDUCATION OF LEARNERS WITH MILD/MODERATE NEEDS LAB - This course is the study of the role and function of the intervention specialist. This course presents issues of definition, identification, and placement procedures. The candidate will acquire knowledge of major researchers and history, variations in belief, traditions and values across cultures, and current practices in the field. Field experience required. Prerequisite(s): EDT 570.

EDT 572L. Int Ed Mid/Mod Lab. 0 Hours

INTRODUCTION TO EDUCATION OF LEARNERS WITH MILD/MODERATE NEEDS LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to the role and function of the intervention specialist. Corequisite(s): EDT 572.

EDT 573. Collbrtng W/Fam-Agnc. 3 Hours

COLLABORATING WITH FAMILIES, PROFESSIONALS, AND AGENCIES - This course examines theories and techniques to assist teachers in working with professionals, families and agency personnel to provide an appropriate educational program, improve home-school relationships and develop family-professional partnerships. Historical and legal perspectives of parental influence on special education services are examined. Prerequisite(s): EDT 570.

EDT 574. Behavior Management. 3 Hours

BEHAVIORAL MANAGEMENT - This course examines the principles and methods of observing, recording, assessing, and managing human behavior with emphasis on students with disabilities. Prerequisite(s): EDT 570.

EDT 575. Assessmnt:Mild/Mod. 3 Hours

ASSESSMENT: MILD/MODERATE - This course is the study of the multidisciplinary use of assessment instruments and techniques in the diagnosis, planning and evaluation of the special needs learner and the development of individual education programs. Field experience required. Prerequisite(s): EDT 570, EDT 572, EDT 573, EDT 574.

EDT 575L. Assmnt Mild/Mod Lab. 0 Hours

ASSESSMENT: MILD/MODERATE - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to use of assessment instruments and techniques in the school setting. Corequisite(s): EDT 575.

EDT 576. Curriculum:Mild/Mod. 2-3 Hours

CURRICULUM: MILD/MODERATE - This course is the study of curriculum development considering the motor, cognitive, academic, social, language, affective, functional, life skills, and individual programming of students with mild/moderate disabilities. Field experience required. Prerequisite(s): EDT 570, EDT 572, EDT 573, EDT 574, EDT 575. Corequisite(s): EDT 579.

EDT 576L. Currclm Mild Mod Lab. 0 Hours

CURRICULUM: MILD/MODERATE - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to curriculum development for students with mild/moderate disabilities. Corequisite(s): EDT 576.

EDT 577. Career Ed/Spec Ed. 2 Hours

CAREER EDUCATION/SPECIAL EDUCATION - This course examines the theories and techniques of job classification, assessment, selection, placement, and activities related to work experience. Career development and transition needs are examined for teachers working with preschoolers to adults. Prerequisite(s): EDT 570.

EDT 578. Appl-Comp/Tech-Sp Ed. 2 Hours

APPLICATION OF COMPUTERS/TECHNOLOGY IN SPECIAL EDUCATION - This course is the study of basic computer applications in special education, including instructional programs, software evaluation, telecommunications, multimedia and hypermedia, assistive technology, augmentative devices, resources, and legal/ethical issues. Prerequisite(s): EDT 570; basic computing/technology skills.

EDT 579. Inst Str/Mild/Mod. 2-3 Hours

INSTRUCTIONAL STRATEGIES: MILD/MODERATE - This course examines the strategies, materials, and evaluation techniques for teaching students with mild/moderate learning needs. Field experience required. Prerequisite(s): EDT 570, EDT 572, EDT 573, EDT 574, EDT 575. Corequisite(s): EDT 576, EDT 589.

EDT 579L. Inst Str Mild/Mod Lab. 0 Hours

INSTRUCTIONAL STRATEGIES: MILD/MODERATE LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to planning, instruction, and assessment for students with mild/moderate learning needs. Corequisite(s): EDT 579.

EDT 580. Intro-Mod to Intern. 5-10 Hours

INTRO-MOD TO INTERN - Intro-Mod To Intern.

EDT 583L. Tchng Vis Arts Lab. 0 Hours

TEACHING VISUAL ARTS LAB - This laboratory course is the field experience portion of VAE 583, and consists of activities related to curriculum, planning, theory, and practice for teaching visual arts to students, grades kindergarten through twelve. Corequisite(s): VAE 583.

EDT 587. Stndt Tchng Mild.Mod. 1 Hour

STUDENT TEACHING: MILD/MODERATE - Supervised and evaluated teaching with students demonstrating mild/moderate learning needs. The candidate will demonstrate the knowledge, skills, and dispositions of an intervention specialist. Attendance at seminars may be required. Prerequisite(s): EDT 575, EDT 576, EDT 579 and approval of faculty.

EDT 589. Std Tchg:Mild/Mod. 3-7 Hours

STUDENT TEACHING: MILD/MODERATE - Supervised and evaluated teaching with students demonstrating mild/moderate learning needs. The candidate will demonstrate the knowledge, skills and dispositions of an intervention specialist. Attendance at seminars may be required. Prerequisite(s): EDT 575, EDT 576, EDT 579.

EDT 590. Curr & Theory/Art Ed. 3 Hours

CURRICULUM THEORY IN ART EDUCATION - This course is an analysis of critical, aesthetic, artistic, and historical theories in the education curriculum, with emphases on planning, diagnosis, instructional methods, evaluation techniques and the interdependence of the community, school, art educator and students in diverse settings.

EDT 591. Curr Issues Art Ed. 3 Hours

CURRENT ISSUES IN ART EDUCATION - This course is a study and analysis of literature on teaching approaches to art education. The role of the art teacher is examined with an emphasis on developing an awareness of various philosophical positions on current issues in art education.

EDT 599. Stndt Tch-Art PK-12. 3-10 Hours

STUDENT TEACHING - ART (P-12) - Full-time supervised and evaluated teaching in art classes in school (P-12). The candidate will demonstrate the knowledge, skills, and dispositions required of a beginning art teacher. Attendance at weekly seminars is required. Prerequisite(s): Passing score on PRAXIS II specialty area exam; completion of 80% of content area courses; formal admission to student teaching a semester in advance.

EDT 600. Reading Methods. 3 Hours

READING METHODS - An integrated language arts course focusing on the knowledge base underpinning the teaching of reading and related language arts processes within the language arts and across curriculum to students of various ages, needs, and abilities. Topics include: planning, instructional methods, materials, assessment, and evaluation techniques. Early childhood, middle childhood, and intervention specialist licensure candidates must meet program requirement in reading. Adolescence/young adult candidates are also required to meet this requirement if working toward Ohio's Reading Endorsement. Field experience required.

EDT 600L. Reading Methods lab. 0 Hours

READINGS METHODS LAB - This lab consists of planned field experiences providing candidates the opportunity for field reflections in regard to planning, instruction, and assessment of language arts across the curriculum in school settings. Corequisite(s): EDT 600.

EDT 601. Phonics. 3 Hours

PHONICS, SPELLING, AND VOCABULARY - This course provides the background knowledge necessary for effectively teaching and assessing the role of phonics in the reading process. Emphasis is on developing phonemic awareness, phonics, spelling, and word recognition/word meaning embedded in the context of a total reading/language arts program focused on meaning construction. Early childhood, middle childhood and intervention specialist initial licensure candidates must meet program requirements in reading. Adolescence/young adult candidates are also required to meet this requirement if working toward Ohio's Reading Endorsement.

EDT 602. Crtl Rdg-Cntnt Areas. 3 Hours

CRITICAL READING IN THE CONTENT AREAS - In this course, middle childhood and intervention specialist candidates examine the strategies and techniques in the development of prior knowledge skills, study skills, vocabulary, technology, and assessment as they relate to critical reading abilities in a variety of curriculum areas. This course is part of Ohio's 12 Hour State Mandated Reading Core. Early childhood, middle childhood, intervention specialist, and multi-age licensure students must meet this requirement.

EDT 603. Found of Literacy. 3 Hours

FOUNDATIONS OF LITERACY THROUGH LITERATURE - This course serves as an introductory course to the reading/language arts (listening, speaking, reading, writing, viewing, visual representation) and the role literature plays in these processes. It is a foundation course in reading and is intended to align with the requirements of Ohio Reading Core licensure standards for the early childhood, middle childhood, and intervention specialist programs. Topics examined include the foundations of literacy, research theories and related models of reading, various children's and young adult literature, the integration of technology in literacy, an overview of the importance of on-going assessment in teaching reading/language arts, and an awareness of cultural, linguistic, and ethnic diversity in individual learners.

EDT 605. Adv Stdy-Rdg-Lng Art. 3 Hours

ADVANCED STUDY IN READING/LANGUAGE ARTS - This course is designed to provide teachers the opportunity to extend their knowledge of the reading/language arts processes and the principles underlying effective instruction. Key concepts are drawn from recent research and theory in language learning, developmental reading research, and research describing the literacy processes of children.

EDT 606. Assess&Eval /Rd Diff. 3 Hours

ASSESSMENT & EVALUATION OF READING DIFFICULTIES - This course is the study of formal and informal diagnostic tests and procedures for identifying reading strengths and weaknesses with applications for reading programs. Candidates must register for EDT 607 the next semester. Prerequisite(s): EDT 605 or EDT 610.

EDT 607. Prac In Rd Intgrv Tch. 3 Hours

PRACTICUM IN READING INTERVENTION TECHNIQUES - In this course the candidate will apply knowledge of informal and formal evaluation instruments for diagnosing reading ability and disability and their causes with students and to plan appropriate intervention experiences for those students. Laboratory portion of EDT 606. This course must be taken the semester immediately following EDT 606. Prerequisite(s): EDT 606.

EDT 608. The Writing Classrm. 3 Hours

THE WRITING CLASSROOM - This course will focus on the teacher as a writer. Elements of the writing process will be discussed and implemented. Candidate will develop a classroom writing program.

EDT 609. Iss,Trnds&Res in Rdg. 3 Hours

ISSUES, TRENDS, & RESEARCH IN READING - Basic course for teachers concerned with the psychology of learning to read and current issues, trends and research in teaching reading/language arts.

EDT 629. Cognition Learn&Tech. 3 Hours

COGNITION, LEARNING, & TECHNOLOGY - This course focuses on the connections between cognitive psychology and technology-enhanced teaching and learning. New insights emerging from the latest research on human cognition have important implications for instructional design. Such insights suggest ways of teaching and learning that foster deep understanding, better thinking, and the use of knowledge to solve complex problems. Students will learn how to build technology-enhanced, problem-based learning environments grounded in the latest research on human cognition and constructivist learning theory. This course is the gateway course leading to the Master of Science in Education with a concentration in technology-enhanced learning. It is the prerequisite for all other courses in the program.

EDT 630. Multimedia Productn. 3 Hours

MULTIMEDIA PRODUCTION - This course will allow students to manipulate and manage multimedia resources, including presentation software, graphics, and audio and video clips to create engaging learning experiences. Students will engage in multimedia activities that focus on classroom technology integration. Prerequisite(s): EDT 629.

EDT 631. Pln/Asg Tch Enhd Lrn. 3 Hours

PLANNING & ASSESSING TECHNOLOGY - ENHANCED LEARNING - In this course, candidates will learn how to systematically plan and assess growth in the use of technology by K-12 teachers, students, and administrators. Prerequisite(s): EDT 629.

EDT 632. Dist Learn-Dgtl Age. 3 Hours

DISTANCE EDUCATION IN A DIGITAL AGE - This course teaches candidate to design powerful learning experiences that connect students to the real world by using a variety of distance education tools, including web-based and teleconferencing technologies. Prerequisite(s): EDT 629.

EDT 633. Web Design/Develop. 3 Hours

WEB DESIGN AND DEVELOPMENT - This course is designed to be an introductory level course for educators with no previous web design experience. The course focuses on using HTML authoring software to build a working website that can be implemented for a typical classroom setting. Upon completion of this course, students will have developed a class web site and demonstrate the technical proficiency to update their web site as needed. Prerequisite(s): EDT 630.

EDT 634. Bcm Eff Bldg Tech Ld. 1-4 Hours

BECOMING AN EFFECTIVE BUILDING TECHNOLOGY LEADER - This capstone course examines the practical concerns of becoming a building leader and resource in the integration of technology-enhanced learning. Study of research on leadership and innovation undergirds the candidate's understanding of the issues of building level management. Field experience required. Prerequisite(s): EDT 631, EDT 632, EDT 633.

EDT 650. Prf Dev-Teach Ldrs. 3 Hours

PROFESSIONAL DEVELOPMENT OF TEACHER LEADERS - This course is a study of existing and emerging models of professional development designed to provide classroom teachers with opportunities to assume new leadership roles and responsibilities in the school community.

EDT 658. Indivl Stdy-Tchnng. 1-3 Hours

INDEPENDENT STUDY - This course is an in-depth study of a selected educational topic. The candidate develops an individual learning plan that includes objectives, schedule of readings, and assignments, products and methods of evaluation. Prerequisite(s): Permission of department chairperson.

EDT 659. Curr Topics-Tchnng. 1-3 Hours

SPECIAL TOPICS IN TEACHING - This course is the study of specialized areas of education not typically included in the professional education sequence. Topics are announced.

EDT 660. Intro to Ed Research. 3 Hours

INTRODUCTION TO EDUCATIONAL RESEARCH - This course is a study of key components necessary to understand, analyze, and evaluate research. Emphasis is on understanding the foundational principles of inquiry and related issues. EDT 660 is taken early in the master's program.

EDT 662. Thesis. 2 Hours

THESIS - The thesis serves as the culmination of courses in a candidate's graduate program where thesis was chosen as a research option. There is a mandatory two-term requirement for thesis.

EDT 663. Thesis. 2 Hours

THESIS - The thesis serves as the culmination of courses in a candidate's graduate program where thesis was chosen as a research option. There is a mandatory two-term requirement for thesis.

EDT 667. Ed Research Seminar. 3 Hours

EDUCATIONAL RESEARCH SEMINAR - In this course students apply the principles of design by implementing a research study in an educational setting. The findings are presented in a public forum. This course is the capstone learning activity of the Master's Degree. Prerequisite(s): EDT 660.

EDT 672. History of Higher Ed. 3 Hours

HISTORY OF HIGHER EDUCATION IN THE UNITED STATES - This course is a study of the development of post-secondary American education from Colonial times to the present with special emphasis on mission, purposes, governance and curriculum as they change over time and differ by institutional type.

EDT 680. LTS Diverse Classrm. 2 Hours

COACHING IN DIVERSE CLASSROOMS - The focus of this course is on the preparation of literacy specialists to coach teachers in the implementation of culturally responsive instruction for diverse learners. This population includes special needs, culturally and linguistically diverse students. Emphasis will be placed on connections between current theory, research, and instructional practice. Prerequisite(s): Acceptance to END. LTS program.

EDT 681. LTS Eff Assessment. 2 Hours

COACHING FOR EFFECTIVE ASSESSMENT PRACTICE - Designed for reading specialists, this course teaches knowledge, skills and dispositions in school-based professional development and coaching on classroom-based reading assessment concepts and skills. Prerequisite(s): Acceptance to END.LTS program.

EDT 682. LTS Pdgy Instruction. 2 Hours

PEDAGOGY OF EFFECTIVE LITERACY INSTRUCTION - This course enables candidates to demonstrate knowledge of a wide range of instructional practices, methods, and curriculum materials, including technology, that support effective reading and writing instruction. Candidates integrate their knowledge and dispositions regarding curriculum, instructional practices, curricular materials, assessment and evaluation to create literate environments that foster both reading and writing in all students. Prerequisite(s): Acceptance to END.LTS program.

EDT 683. LTS Profssnl Dvlpmnt. 2 Hours

PROFESSIONAL DEVELOPMENT IN LITERACY - An introduction to research and knowledge bases related to teacher professional development from a variety of perspectives. Examines coaching as one venue of supporting teacher professional development. Prerequisite(s): Acceptance to END.LTS program.

EDT 684. Adv Lit Research. 2 Hours

ADVANCED LITERACY RESEARCH - This course is an introduction to literacy research as an integral part of professional development. It builds on candidate understanding of a variety of research paradigms in reading and writing research, supports engagement in inquiry that significantly advances candidates' current understanding of the teaching of reading and writing, and provides opportunities for candidates to collaborate with other literacy professionals in order to advance understanding of evidence-based practice. Prerequisite(s): Acceptance to END.LTS program.

EDT 685. LTS Internship. 4 Hours

LTS INTERNSHIP - The internship is the culminating activity supporting and integrating the accomplishment of the Literacy Specialist Endorsement Standards I - VI. This school-based practicum over an academic year includes providing group and individual professional development to colleagues for continuous improvement of literacy curriculum, instruction, and assessment. Diagnostic reading and writing clinical experiences focus on databased decision making to inform coaching. Prerequisite(s): Acceptance to END. LTS program.

Doctor of Physical Therapy (DPT)

Philip A. Anloague, PT, DHSc, OCS, MTC
Program Director

The physical therapist professional education program at the University of Dayton aims to graduate knowledgeable, service-oriented, self-assured, adaptable, reflective practitioners who, by virtue of critical and integrative thinking, lifelong learning, and ethical values, render independent judgments concerning patient/client needs that are supported by evidence; promote the health of the client; and enhance the professional, contextual, and collaborative foundations for practice. The three-year (8 semesters) Physical Therapy Program integrates didactic, hands-on, and clinical experiences that culminate in a practitioner ready for today's state of practice and beyond. The didactic portion of the curriculum is enhanced by 38 weeks of full-time clinical training that is divided into four different clinical rotations providing immediate "real-world" reinforcement

for classroom and lab instruction. A primary method of curriculum delivery is problem-based learning (PBL). This case focused, small group learning format facilitates the student's ability to identify, utilize, and manage learning resources and contributes to a smooth transition from the classroom to the clinic. Problem-based learning integrates knowledge and skills from various disciplines to facilitate the development of a reflective practitioner in a manner that emphasizes professional decision-making and the use of critical analysis in problem solving. In order to qualify for admission to the DPT Program, students must have an undergraduate degree and meet admission requirements. Students attend classes on a year round basis.

Clinical Experiences

Students complete 38 weeks of full-time clinical training throughout the curriculum. The first 3 rotations of 6, 8 and 12 weeks respectively follow specific core clinical modules focusing on general medicine, neurology and orthopedics. The final 12 week rotation focuses on a specialty area and is completed just prior to graduation. Clinical training may require travel and students are responsible for all expenses.

Faculty

Six of the seven core faculty hold terminal Doctoral Degrees and five are certified clinical specialists. Our faculty has many years of experience teaching in higher physical therapy education and a rich history of clinical experience, research, and scholarship. Five faculty are currently involved in clinical practice. Adjunct faculty, 69% with Master's or Doctoral degrees and 43% being a board certified clinical specialist, assist with tutorials, labs and specialty lectures.

Requirements:

Core Module 1: Basic Science (16 weeks)	17
Care Module 2: Clinical Science (11 weeks)	14
General Medicine I (6 weeks)	4.5
General Medicine II (6 weeks, summer term 1)	5.5
Clinical Module I General Medicine (6 weeks, summer term 2)	5
Neurology I (10 weeks)	9
Neurology II (6 weeks)	4.5
Clinical Module II: Neurology (8 weeks)	7
Orthopedics I (9 weeks)	8
Clinical Module III: Orthopedics (12 weeks, summer term 1)	10
Orthopedics II (6 weeks)	4.5
Advanced Therapy I (10 weeks)	10.5
Advanced Therapy II (5 weeks)	5
Clinical Module IV: Contract Clinical (12 weeks)	10
Summation Module (1 week)	2
Total Hours	116.5

Courses

DPT 805. Physiology I. 4 Hours

FUNCTIONAL PHYSIOLOGY I: INTRO TO PATHOLOGY A - small group, problem based learning course which focuses on the study of human physiological function of the major organ systems including clinical manifestations associated with pathophysiological conditions. Introduction of applied physiology and exercise physiology concepts in musculoskeletal, cardiovascular, and pulmonary function. Foundations of pharmacokinetics and pharmacodynamics are also studied in this course.

DPT 806. Physiology II. 2.5 Hours

FUNCTIONAL PHYSIOLOGY II: EXERCISE PHYSIOLOGY - Advanced concepts of applied physiology and exercise physiology concepts in musculoskeletal, cardiovascular, and pulmonary function are studied.

DPT 810. Prof Seminar I. 2 Hours

PROFESSIONAL SEMINAR I: HEALTH CARE - Provides a comparative overview of health care systems and the role of physical therapy. Students learn about the APTA and the development of professional behaviors as they work on personal strategies for integration into the profession. Learning styles are presented and discussed within the context of clinical practice and professional development.

DPT 811. Prof Seminar II. 2 Hours

PROFESSIONAL SEMINAR II: CLINICAL PRACTICE - Designed to introduce the student to clinical practice. Students learn professional communication and documentation skills. Topics include the medical record, personnel supervision, scheduling, legal and ethical issues including sexual harassment, and the cost of service delivery.

DPT 815. Human Gross Anatomy. 5 Hours

HUMAN GROSS ANATOMY - Comprehensive course with lecture and human cadaver dissection, emphasizing the skeletal, muscle, and nervous systems. The aim is to provide a solid morphological basis for a synthesis of anatomy, physiology, and the physical therapy clinical sciences. The lab section involves dissection and identification of structures in the cadaver and the study of charts, models, radiographic anatomy, and projected materials.

DPT 818. Neuroscience. 4.5 Hours

NEUROSCIENCE - Comprehensive course utilizing lecture and active learning methodologies, including labs covering neuroanatomy and physiology of the central, peripheral, and autonomic nervous systems as they pertain to normal somatic function. Basic disease families are introduced.

DPT 820. Movement Science. 4 Hours

MOVEMENT SCIENCE - Comprehensive course with lecture, small group, clinical lab, and dissection, which integrates anatomy, biomechanics, and clinical examination of the spine, trunk, and appendicular muscular system into the evaluation of human movement dysfunction. Students learn basic gait and posture examination skills and develop clinical reasoning to facilitate the development of appropriate therapeutic exercise interventions.

DPT 825. Pharmac Therapeutics. 2 Hours

CLINICAL SCIENCE V: CURRENT TECHNOLOGY - Designed to present the general principles of pharmacology in relation to physical therapy practice. Basic concepts of drug therapy, nomenclature, and drug safety are introduced. Pharmacokinetic principles including drug administration, absorption, distribution, action, and interaction are reviewed as they relate to physical therapy and rehabilitation.

DPT 840. Clinical Science I. 2 Hours

CLINICAL SCIENCE I: TISSUE INJURY & REPAIR - This course presents basic principles of tissue injury, inflammation, healing, repair, and regeneration as related to physical therapy rehabilitation. Medical and specific surgical interventions are identified to provide the clinical presentation and intervention strategies for given dysfunctions.

DPT 841. Clinical Science II. 2.5 Hours

CLINICAL SCIENCE II: INTRO TO MEDICAL DIAGNOSTICS - Designed to provide knowledge and the appropriate screening tools necessary for examining and intervening with clients in the physical therapy setting. The medical examination/evaluation is presented including the patient interview, identification of red flags or risk factors, symptom investigation, and review of systems. Medical diagnostic modalities are discussed with focus on radiology, MRI, CT, diagnostic US, and EMG.

DPT 842. Clinical Science III. 1 Hour

CLINICAL SCIENCE III: MODALITIES I - Comprehensive course including lab principles and practice of thermotherapy and cryotherapy procedures. Problem-solving approach to clinical decision making is integrated into the application of hydrotherapy, aquatic therapy, superficial and deep heat modalities, and cold modalities.

DPT 843. Clinical Science IV. 1 Hour

CLINICAL SCIENCE IV: MODALITIES II - Comprehensive course including lab principles and practice of physical therapy modalities with focus on electrotherapy procedures. Problem-solving approach to clinical decision making is integrated into the application of modalities, including electrotherapy procedures in patient populations across the life span.

DPT 846. Maturation Science I. 1.5 Hour

MATURATION SCIENCE I - Comprehensive course including clinical lab, which is designed to examine human development and maturation from conception to aging. Emphasis is placed on the recognition of appropriate neurological, cognitive, motor, and psychosocial characteristics related to various states of growth, development, and maturation.

DPT 847. Maturation Science II. 1 Hour

MATURATION SCIENCE II - Continuation of DPT 846 with further study of the maturational influences on therapeutic intervention. Students learn clinical examination and reasoning skills required for physical therapy intervention throughout the life span. Students are introduced to congenital developmental and age-related pathologies.

DPT 910. Prof Seminar III. 1 Hour

PROFESSIONAL SEMINAR III: LEADERSHIP AND MANAGEMENT A - seminar course with increased emphasis on business and management principles. Students will be asked to correlate didactic information learned to this point with information obtained from clinical fieldwork. Documentation review will be performed with emphasis on the management perspective. Updates on healthcare reform and impact on physical therapy as a business will be a focus area. Students will learn self-marketing techniques to optimize the employment search. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 911. Prof Seminar IV. 1.5 Hour

PROFESSIONAL SEMINAR IV: BUSINESS AND MARKETING - Seminar course designed to help the student formulate strategies for professional assessment and development post-graduation. Topics include professional values and responsibilities, expanding your professional options, continuing education, specialty certification, and advanced degrees. Each student participates in a comprehensive program evaluation and does a formal presentation of the graduate project. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 912. Prof Seminar V. 1 Hour

PROFESSIONAL SEMINAR V: PROFESSIONAL DEVELOPMENT - Seminar course designed to help the student formulate strategies for professional assessment and development post-graduation. Topics include professional values and responsibilities, expanding your professional options, continuing education, specialty certification, and advanced degrees. Each student participates in a comprehensive program evaluation and does a formal presentation of the graduate project. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 940. Clinical Science V. 1 Hour

CLINICAL SCIENCE V: CURRENT TECHNOLOGY - This course is designed to provide the principles and knowledge related to current medical technology and the advancements related to physical therapy. New technologies regarding therapeutic or diagnostic modalities and rehabilitation are studied with focus on the efficacy of these interventions. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 951. Clinical I. 5 Hours

CLINICAL ROTATION I: GENERAL MEDICINE - Six-week clinical rotation in general medicine to provide full-time clinical exposure, allowing students to integrate current knowledge and training with supervised patient care. Emphasis on continued development of clinical reasoning along with identification and utilization of appropriate clinical resources.

DPT 952. Clinical II. 7 Hours

CLINICAL ROTATION II: NEUROLOGY - This eight-week clinical rotation in rehabilitation will provide full-time clinical exposure, allowing the student to integrate current knowledge and training with supervised patient care. Emphasis is on the continued development of clinical skills and reasoning, along with the development of interpersonal skills as a member of the health care team. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 953. Clinical III. 4-10 Hours

CLINICAL ROTATION III: ORTHOPEDICS - This 12-week clinical rotation in orthopedics/sports medicine will provide full-time clinical exposure, allowing the student to integrate current knowledge and training with supervised patient care. Emphasis is on the continued development of clinical skills and reasoning, with increasing responsibility for independent decision making and clinical interaction. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 954. Clinical IV. 10 Hours

CLINICAL ROTATION IV: CONTRACT CLINICAL - This final clinical rotation is designed to allow the student to continue developing clinical skills and reasoning in an area of special interest. Increasing independence in clinical practice is expected, with increased clinical responsibilities in the areas of program development and implementation, as well as administration and clinical management to include staff supervision. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 961. Pathology Gen Med I. 1.5 Hour

CLINICAL PATHOLOGY: GENERAL MED I - This small group problem-based learning course utilizing patient case scenarios of various general medical, acute care, and postoperative patient case scenarios or pathologies to facilitate the integration of previous knowledge with new learning. Students review and apply basic and clinical science concepts to each case, formulating appropriate physical therapy assessment and treatment strategies. Prerequisite(s): DPT 971, DPT 981.

DPT 962. Pathology Gen Med II. 1.5 Hour

CLINICAL PATHOLOGY: GENERAL MED II - This small group problem-based learning course utilizing patient case scenarios of various advanced general medical, acute care, and postoperative patient case scenarios or pathologies to facilitate the integration of previous knowledge with new learning. Students review and apply basic and clinical science concepts to each case, formulating appropriate physical therapy assessment and treatment strategies. Integration of medical diagnostics, pharmacology, imaging, and factors that lead to medical referral in relation to physical therapy intervention is emphasized. Prerequisite(s): DPT 972, DPT 982.

DPT 963. Pathology Neuro I. 3 Hours

CLINICAL PATHOLOGY: NEUROLOGY I - This small group problem-based learning course utilizes patient case scenarios, describing various neurological pathologies, to facilitate the integration of previous knowledge with new learning. The student will use basic and clinical science principles to formulate appropriate assessment and treatment strategies for the patient with neurological deficits. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 964. Pathology Neuro II. 1.5 Hour

CLINICAL PATHOLOGY: NEUROLOGY II - This small group problem-based learning course utilizes patient case scenarios of various pediatric pathologies, to facilitate the integration of previous knowledge with new learning. The student will use basic and clinical science principles to formulate appropriate assessment and treatment strategies for pediatric patients. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 965. Pathology Ortho I. 3 Hours

CLINICAL PATHOLOGY: ORTHO I - This course is taught using the small-group tutorial process. Case scenarios are used to create learning issues. Resolution of learning issues occurs through integration of present knowledge with new learning. New learning occurs through small-group interaction and the students' independent utilization of resources. The emphasis in this course is on continued development of clinical reasoning and clinical decision making as it relates to orthopedic pathologies, with primary focus given to the extremities and secondary focus to the spine. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum. Corequisite(s): DPT 684; Clinical Skills Lab.

DPT 966. Pathology Ortho II. 1.5 Hour

PATHOLOGY ORTHO II - This small group problem-based learning course utilizing patient case scenarios dealing with differential diagnosis and management of complex orthopedic pathologies to facilitate the integration of previous knowledge with new learning. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 967. Pathology Adv PT I. 3 Hours

CLINICAL PATHOLOGY: ADVANCED THERAPY - This small group problem-based learning course utilizing patient case scenarios of various advanced topics including cardiopulmonary, women's health issues, electrotherapeutics and orthopedic, neurological, and pediatric therapeutic interventions. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 971L. Skills Lab Gen Med I. 1 Hour

SKILLS LABORATORY: GENERAL MEDICINE I - Designed to facilitate skill acquisition, along with clinical reasoning and decision making as it relates to the physical therapy care and management of the patient with acute medical and postoperative pathology. Students learn physical examination tests and measure, along with therapeutic interventions including electrotherapy modalities appropriate for this population. Prerequisite(s): DPT 961, DPT 981.

DPT 972L. Skills Lb Gen Med II. 1 Hour

SKILLS LABORATORY: GENERAL MEDICINE II - Designed to facilitate skill acquisition, along with clinical reasoning and decision making as it relates to the physical therapy care and management of the patient with acute medical and postoperative pathology. Students expand skills related to physical examination tests and measure as related to medical diagnostics and medical or health care referral. Advanced therapeutic interventions including electrotherapy modalities appropriate for this population is addressed. Prerequisite(s): DPT 962, DPT 982.

DPT 973L. Skills Lab Neuro I. 2 Hours

SKILLS LABORATORY: NEUROLOGY I - This course is designed to assist the student with the development of clinical skills and reasoning essential for the assessment and treatment of patients with neurological pathologies. Therapeutic procedures and protocols appropriate for this patient population will be taught with special considerations regarding patient safety. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 974L. Skills Lab Neuro II. 1 Hour

SKILLS LABORATORY: NEUROLOGY II - Designed to facilitate skill acquisition along with clinical reasoning and decision making as it relates to the physical therapy care and management of the pediatric patient. Students learn physical examination tests and measures along with therapeutic interventions appropriate for this population. Therapeutic procedures and protocols appropriate for these patients and taught with special consideration for patient/family needs and education. Prerequisite(s): DPT 964, DPT 984.

DPT 975L. Skills Lab Ortho I. 1.5 Hour

SKILLS LABORATORY: ORTHOPEDICS I - Course description is currently unavailable. This laboratory course is designed to help the student develop clinical skills and reasoning essential to the examination, evaluation, and physical therapy intervention of orthopedic patients. Emphasis is focused on clinical reasoning and clinical skill development as they apply to common extremity and spine pathologies. Skills include: examination techniques, use of modalities, therapeutic exercise, soft tissue techniques, mechanical traction, and articular mobilization. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum. Corequisite(s): DPT 965, DPT 985.

DPT 976L. Skills Lab Ortho II. 1 Hour

SKILLS LABORATORY: ORTHOPEDICS II - This course is designed to facilitate skill acquisition along with clinical reasoning and decision making as it relates to the physical therapy care and management of orthopedic patients with complex musculoskeletal pathology and dysfunction. Students learn physical examination tests and measures along with therapeutic interventions including electrotherapy modalities appropriate for this population. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 977L. Skills Lab Adv PT I. 2 Hours

SKILLS LABORATORY: ADVANCED PHYSICAL THERAPY I - This course is designed to facilitate skill acquisition along with clinical reasoning and decision making as it relates to the physical therapy care and management of various advanced topics including cardiopulmonary rehabilitation, women's health issues, manual therapy strategies, electrotherapeutics as well as orthopedic, neurological, and pediatric therapeutic interventions. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 981. Seminar Gen Med I. 1 Hour

CLINICAL ISSUES SEMINAR GENERAL MED II - Presentation/discussion of comprehensive issues related to physical therapy management of the general medical and postoperative patients. Topics include diabetes, wound care, universal precautions, medical diagnostics, amputees, arthroplasty, treatment of the terminally ill patient, pharmacology, and durable medical equipment. Prerequisite(s): DPT 961, DPT 971.

DPT 982. Seminar Gen Med II. 1 Hour

CLINICAL ISSUES SEMINAR GENERAL MED II - Presentation/discussion of comprehensive issues related to physical therapy management of advanced topics related to the general medical and postoperative patients. Topics include the diagnoses related to the integumentary system, cardiopulmonary, oncology, vestibular dysfunction as well as the primary care for the adolescent, obstetric, work-injured, and geriatric populations. Prerequisite(s): DPT 962, DPT 972.

DPT 983. Seminar Neuro I. 2 Hours

CLINICAL ISSUES SEMINAR: NEUROLOGY I - Presentation/discussion of comprehensive issues related to physical therapy management of the patient with neurological dysfunction. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 984. Seminar Neuro II. 1 Hour

CLINICAL ISSUES SEMINAR: NEUROLOGY II - Presentation/discussion of comprehensive issues related to physical therapy management of the pediatric patient. Topics include treatment within a variety of settings including school-based, hospital-based, private practice, and home care; psychosocial issues relating to the patient and family; funding; documentation; and pharmacological management. Prerequisite(s): DPT 964, DPT 974.

DPT 985. Seminar. 2 Hours

CLINICAL ISSUES SEMINAR: ORTHO I - This seminar course focuses on comprehensive and complex issues related to physical therapy management of the orthopedic patient, including: application of biomechanical principles to movement and therapeutic exercise; principles of conditioning; training and therapeutic exercise prescription and rehabilitation; physical therapy management of the post-operative patient; medical diagnostics; documentation; and clinical administration. Students will study the history of manual therapies and current philosophies of patient care. The student will also be given an opportunity to develop interpersonal communication and work ethic skills associated with project development and production and role playing patient simulations. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum. Corequisite(s): DPT 965, DPT 975.

DPT 986. Seminar Ortho II. 1 Hour

CLINICAL ISSUES SEMINAR: ORTHO II - Seminar presenting/discussing comprehensive issues related to physical therapy management of the complex orthopedic patient with select axial musculoskeletal pathologies. Includes chronic pain management, medical diagnostics, surgical intervention for the spine, differential diagnosis, and age-related pathologies. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 987. Issues Adv PT I. 3 Hours

CLINICAL ISSUES SEMINAR: ADVANCED THERAPY - Seminar/discussion on issues related to physical therapy care and the profession. Includes preventive health care programs, physical therapy consultation, burn and wound care management, industrial rehabilitation, and sports medicine. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 988. Practice Electives. 5 Hours

CLINICAL PRACTICE ELECTIVES - Clinical Education Workshops: Concentrated lecture/lab instruction in selected advanced physical therapy patient-care topics including: advanced orthopedics, Back to Golf, MET, manual therapy for lymphedema, advanced NDT, rehabilitation technology, advanced prosthetics, advanced handling for pediatric patients, and orthotic fabrication. Clinical Enrichment Seminars: This seminar/discussion course will address select issues related to physical therapy care and the profession. Topic areas include: cardiopulmonary rehabilitation, women's health issues, medical management of the complex acute care patient, treatment of patients with terminal illness, and the rehabilitation of patients with burns. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 991. Research I. 2 Hours

RESEARCH I - An introductory course on research methods and design. Emphasis is placed on introducing statistical models, use of statistical software, experimental design, and the development of critical reasoning skills for reading and evaluating current research literature. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 992. Research II. 4 Hours

RESEARCH II A - continuation of DPT 991, the focus of this course is on student identification and selection of a research proposal topic. Advanced statistical analysis will be discussed, along with informed consent, writing techniques, funding acquisition, and presentation of findings. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 993. Research III. 2 Hours

RESEARCH III A - continuation of DPT 991, the focus of this course is student completion of the preliminary text of the graduate project proposal. Remediation of prior materials from DPT 992 will be included for topics not passed at a score of 75% on the Final Exam from Research I. Advanced statistical topics include the use of Intraclass Correlation to determine reliability. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 994. Research IV. 1 Hour

RESEARCH IV - Integrating research, scholarship, and evidence-based practice. Prerequisite(s): Successful completion of all prior course work as outlined in the University of Dayton DPT curriculum.

DPT 995. Research V. 1 Hour

RESEARCH V - Thesis presentation and board exam preparation (research only). Pass/Fail. Prerequisite(s): DPT 991, DPT 994. Corequisite(s): DPT Summation Module.

PhD in Educational Leadership

A. William Place, Ph.D., Program Director

Ph.D. in Educational Leadership Faculty:

Kevin R. Kelly, Dean, School of Education and Allied Professions

A. William (Will) Place, Director of Doctoral Studies and Associate Professor, Educational Leadership

Barbara De Luca, Associate Dean for Graduate Education and Research and Associate Professor, Educational Leadership

Theodore Kowalski, Professor and Kuntz Family Chair in Educational Administration and Coordinator of the P-12 School Administration Concentration, Educational Leadership

Thomas J. Lasley, Professor & Executive Director, EDvention, Teacher Education

C. Daniel Raisch, Associate Professor, Educational Leadership

Carolyn S. Ridenour, Professor and Br. Joseph J. Panzer, S.M. Chair in Education, Educational Leadership

James Rowley, Professor, Teacher Education

Charles J. Russo, Professor and Panzer Chair in Education, Educational Leadership

Molly A. Schaller, Chair and Associate Professor, Counselor Education and Human Services

Joseph L. Watras, Professor, Teacher Education

Michele Welkener, Assistant Professor & Coordinator of the Higher Education Administration Concentration, Counselor Education and Human Services

The Ph.D. Program in Educational Leadership is designed for educators who are committed to providing leadership at elementary, secondary, and collegiate levels. The program seeks to prepare scholar-practitioners, leaders who:

1. value both speculative and practical knowledge and engage in continuous inquiry on professional concerns;

2. deliberate with colleagues upon organizational purposes and the means for achieving them;
3. work selflessly with others; and
4. commit themselves to improving the quality of life within society.

The Ph.D. Program in Educational Leadership offers a choice of two different concentration areas:

- P-12 School Administration - The concentration in school administration is designed to prepare educators for the following types of positions: administrative roles in elementary and secondary education, educational researchers, consultants, or professor of school administration. Students pursuing this concentration may opt to take additional courses to meet the requirements for a principal's license and a superintendent's license.

Concentration Coordinator - Dr. Theodore Kowalski

- Higher Education - This specialization consists of a seven-course sequence probing the important literature, concepts and practices in higher education. Using reflective inquiry to generate right questions, moral inquiry to ground decisions, and action inquiry to guide praxis, this program models an on-going transformative process.

Concentration Coordinator - Dr. Michele Welkener

Coursework

Formal coursework in the program is organized around the concepts of research, foundations, and organizational behavior. Coursework in an academic field outside of education is also encouraged. Minimum requirements are listed below:

Research		12
EDU 990	Rsch Methods & Design	
EDU 991	Qualitative Research	
EDU 992	Quant Rsch&Stats	
EDU 993	Adv Res Stat&Data Anl	
Dissertation		9
EDU 904	Dissertation	
Foundations		3
EDU 908	Ideas-Shpe America	
Core		9
EDU 914	Ethc-Educatnl Ldrshp	
EDU 921	Organztnl Theory	
EDU 922	Orgznl Chng & Develop	
Select one program concentration from:		21
Higher Education Administration:		
EDU 941	Hst, Phl & Crr Hghr Ed	
EDU 942	Stdnt Choice-Hgh Edu	
EDU 943	Crit Refl-Hgh Edu	
EDU 944	Build Lrng Comm	
EDU 945	Finance-Hghr Ed	
EDU 946	Legal Iss-Hghr Edu	
EDU 947	The Professoriate	
PK-12		
EDA 810	Curric Eval&Instruct	
EDA 811	Curr Devlp&Ldrshp	
EDA 812	Program&Staff Dev	
EDA 818	Superintendency	

EDA 833	Internship III	
EDA 852	Assess&Instr Sch Impr	
EDA 859	Law of Special Educ	
EDA 860	District Level Mgt	
EDA 861	Distr Level Leadrshp	
EDA 862	Plcy,Poltics&Dsc Mkg	
Cognate		9
Total Hours		63

Residency

Residency is completed during the first three consecutive terms (fall, spring, summer) following admission to the program; a minimum of six semester hours of coursework must be completed in each of these terms.

Comprehensive Examination

In addition to completing course-work and residency requirements, students will successfully complete written examinations based on the content of their coursework and dissertation research topics.

Education - Doctoral Studies Courses

EDU 808. Ideas-Shaped Am Ed. 3 Hours

IDEAS THAT SHAPE AMERICAN EDUCATION - Provides students the historical bases for policy decisions. The primary expectation is that students learn to use the history of education as a foundation for policy making. Also offered as EDU 908.

EDU 821. Organiztnl Theory. 3 Hours

ORGANIZATIONAL THEORY - Organizational theory.

EDU 841. Hst, Phl & Crr Hghr Ed. 3 Hours

HISTORY, PHILOSOPHY, & CURRICULUM OF HIGHER EDUCATION - This course examines the evolution of higher education in the United States from the colonial era to the present. Particular attention is given to the purpose(s) and curriculum of higher education as they evolved in American society. Also offered as EDU 941.

EDU 842. Stnt Choice-Hgh Edu. 3 Hours

STUDENT CHOICE IN HIGHER EDUCATION - This course examines the factors that influence student choice in higher education, including decisions about attending college, which college to attend, program of study, persistence, and graduate education. The ways in which student choice research can inform the development and refinement of enrollment management, student support services, and academic program development will also be analyzed and discussed. Also offered as EDU 942.

EDU 843. Crit Reflec-Hgh Edu. 3 Hours

CRITICAL REFLECTION IN HIGHER EDUCATION - This course examines the convergence between the literature on reflective practice, leadership theory, and leadership in higher education. Particular attention is given to the role of critical reflection in improving the practice of leadership in higher education. Also offered as EDU 943.

EDU 844. Bld Lrng Com-Hghr Ed. 3 Hours

BUILDING LEARNING COMMUNITIES IN HIGHER EDUCATION - This course examines the literature on governance in higher education, financial management in higher education, and the use of action inquiry methods. Also offered as EDU 944.

EDU 845. Public Policy-Hghr Ed. 3 Hours

FINANCE & POLICY IN HIGHER EDUCATION - This course examines the literature on public policy, public finance of higher education, and critical social issues in higher education. It will explore the role of government agencies in the funding and regulation of financial and social issues in higher education. Also offered as EDU 945.

EDU 846. Legal Iss-Hgh Edu. 3 Hours

LEGAL ISSUES IN HIGHER EDUCATION - This course examines the literature on the law and higher education. It will provide a perspective on what active higher education administrators need to know about legal issues. Also offered as EDU 946.

EDU 847. The Professoriate. 3 Hours

THE PROFESSORiate - This course explores the historical development and cultural foundations of the faculty role especially the socialization process, values, work styles, career patterns, and the labor market. Research on the issues that impact faculty at all types of academic institutions is discussed. Also offered as EDU 947.

EDU 904. Dissertation. 1-8 Hours

DISSERTATION - Course is designed to provide each Ph.D. candidate the opportunity to pursue, with faculty guidance and support, inquiry on a topic of personal significance which also promises to add to the knowledge base of the profession. Prerequisite(s): Successful completion of comprehensive examination.

EDU 908. Ideas-Shpe America. 3 Hours

IDEAS THAT SHAPE AMERICAN EDUCATION - Provides students the historical bases for policy decisions. The primary expectation is that students learn to use the history of education as a foundation for policy making. Also offered as EDU 808.

EDU 914. Ethc-Educatnl Ldrshp. 3 Hours

ETHICS IN EDUCATIONAL LEADERSHIP - In this doctoral seminar, students carefully examine the moral dimension of decision-making in educational leadership. Particular attention is given to the development of a model for the articulation of moral views and its application to case situations.

EDU 919. Independent Study. 0-5 Hours

INDEPENDENT STUDY - By permission of the program director only.

EDU 921. Organztnl Theory. 3 Hours

ORGANIZATIONAL THEORY - Development of organizational concepts that will help educational leaders become skilled organizational diagnosticians. Emphasis will be centered upon organizational behavior and how the leader can use the theories and research of the field in dealing with problems involving people.

EDU 922. Orgznl Chng & Develop. 3 Hours

ORGANIZATIONAL CHANGE & DEVELOPMENT - Development of the fundamental concepts and procedures relative to effective planning. Applications of these concepts will also be made to program development and evaluation.

EDU 941. Hst, Phi & Crr Hghr Ed. 3 Hours

HISTORY, PHILOSOPHY, & CURRICULUM OF HIGHER EDUCATION - This course examines the evolution of higher education in the United States from the colonial era to the present. Particular attention is given to the purpose(s) and curriculum of higher education as they evolved in American society. Also offered as EDU 841.

EDU 942. Stdnt Choice-Hgh Edu. 3 Hours

STUDENT CHOICE IN HIGHER EDUCATION - This course examines the factors that influence student choice in higher education, including decisions about attending college, which college to attend, program of study, persistence, and graduate education. The ways in which student choice research can inform the development and refinement of enrollment management, student support services, and academic program development will also be analyzed and discussed. Also offered as EDU 842.

EDU 943. Crit Refl-Hgh Edu. 3 Hours

CRITICAL REFLECTION IN HIGHER EDUCATION LEADERSHIP - This course examines the convergence between the literature on reflective practice, leadership theory, and leadership in higher education. Particular attention is given to the role of critical reflection in improving the practice of leadership in higher education. Also offered as EDU 843.

EDU 944. Build Lrng Comm. 3 Hours

BUILDING LEARNING COMMUNITIES IN HIGHER EDUCATION - This course examines the literature on governance in higher education, financial management in higher education, and the use of action inquiry methods. Also offered as EDU 844.

EDU 945. Finance-Hghr Ed. 3 Hours

FINANCE & POLICY IN HIGHER EDUCATION - This course examines the literature on public policy, public finance of higher education, and critical social issues in higher education. It will explore the role of government agencies in the funding and regulation of financial and social issues in higher education. Also offered as EDU 845.

EDU 946. Legal Iss-Hghr Edu. 3 Hours

LEGAL ISSUES IN HIGHER EDUCATION - This course examines the literature on the law and higher education. It will provide a perspective on what active higher education administrators need to know about legal issues. Also offered as EDU 846.

EDU 947. The Professoriate. 3 Hours

THE PROFESSORiate - This course explores the historical development and cultural foundations of the faculty role especially the socialization process, values, work styles, career patterns, and the labor market. Research on the issues that impact faculty at all types of academic institutions is discussed. Also offered as EDU 847.

EDU 990. Rsch Methods & Design. 3 Hours

RESEARCH METHODS & DESIGN - This course is designed to cover understanding and evaluating, as well as methods involved in undertaking both qualitative and quantitative research in an education setting beginning with identification of the research problem and continuing through writing the final report.

EDU 991. Qualitative Research. 3 Hours

QUALITATIVE RESEARCH - This course emphasizes the design of studies and the issues faced by researchers using qualitative methods. Focus is on fieldwork methods in educational settings, specifically observation, interviewing, collecting written documents, using questionnaires, and data reduction and analysis.

EDU 992. Quant Rsch&Stats. 3 Hours

QUANTITATIVE RESEARCH & ANALYSIS - Course is designed to provide an introduction to the methods and techniques used in quantitative research methodology.

EDU 993. Adv Res Stat&Data Anl. 1,3 Hours

ADVANCED RESEARCH, STATISTICS AND DATA ANALYSIS - This course is designed to extend the focus of EDU 992 with particular emphasis on experimental design methodology and the use of computer programs in analyzing research data.

Educational Leadership Courses

EDA 505. Educational Leadrshp. 3 Hours

EDUCATIONAL LEADERSHIP - The focus of this course is leadership within schools and the role of the educational leader as scholar/practitioner emphasizing excellence in the educational organization through the effective integration of theory and practice.

EDA 507. Internship I. 3 Hours

INTERNSHIP I - This course provides opportunities for the student to experience administrative responsibilities. Emphasis is placed on practicing the skills learned in the master's program, receiving feedback on efforts, and relating practice to theory. Prerequisite(s): EDA 551.

EDA 509. Supervisn&Prof Dvlp. 3 Hours

SUPERVISION & PROFESSIONAL DEVELOPMENT - This course in the theory and practice of supervision is designed to explore essential concepts and skills necessary in providing leadership in the area of formative and summative evaluation for the improvement of teaching and learning. Emphasis will be placed on concepts and means of the scholar-practitioner providing leadership in the supervisory task areas and building learning communities through critical reflection.

EDA 510. Instructional Ldrshp. 3 Hours

INSTRUCTIONAL LEADERSHIP - The course focus is on developing knowledge, skills, attitudes, and values essential in helping others to expand/refine their instructional effectiveness. Emphasis is placed on helping teachers use alternating models of instruction, diagnosing learner needs, prescribing appropriate learner instructional strategies, and accommodating learner needs based upon the concept of diversity.

EDA 511. Curriculum. 3 Hours

CURRICULUM - The focus of this course is on the development of an understanding of the history, purposes, and practices of the school curriculum. Within the course, emphasis is placed on helping students personally integrate the scholarly and practical dimensions and on demonstrating that integration.

EDA 515. School Law. 3 Hours

SCHOOL LAW - This course addresses legal issues pertinent to teacher, administrator, and student legal rights and responsibilities in the school building. The legal process, structures of the law, legislation/litigation, and practices to avoid legal infringements are addressed.

EDA 551. Research. 3 Hours

RESEARCH - This course will equip school leaders with the tools of research. Emphasis will be placed on becoming frequent and knowledgeable users of research on schools, developing skills in critiquing research, and applying the tools of research to address issues that face school leaders. This course is a prerequisite for EDA 507.

EDA 555. Cmmnty Rel-Sch Ldrs. 3 Hours

COMMUNITY RELATIONS FOR SCHOOL LEADERS - This course is designed to assist school administrators in refining their communication skills and political understanding. Provisions are made for the development of guidelines, techniques, and practices that facilitate wholesome relationships between school and community.

EDA 556. Ldrshp-Divrs Comm. 3 Hours

LEADERSHIP IN DIVERSE COMMUNITIES - This course will promote understanding of differences in race, gender, social class, religious affiliation, and sexual orientation and the implications of these differences for leadership in the school setting. Emphasis will be on promoting understanding and managing diversity within schools as learning organizations.

EDA 557. School Finance. 3 Hours

SCHOOL FINANCE - This course addresses topics such as equity, adequacy, efficiency in school funding; local, state, and federal funding sources; funding methods; and budgeting emphasizing features unique to Ohio.

EDA 607. Internship II. 3 Hours

INTERNSHIP II - The internship is intended to provide the participant an opportunity to relate the coursework, research, simulation, and independent study in which he/she has engaged to actual problems encountered in administering the elementary or secondary school building/program.

EDA 611. Assess&Instr/Sch Imp. 3 Hours

ASSESSMENT & INSTRUCTION FOR SCHOOL IMPROVEMENT - This course focuses on the role of educational leaders with setting and attaining high academic goals for the primary purpose of maximized student learning outcomes, thus improving the practices of instruction and assessment. Educational leaders need an understanding of the best practices for enhancing teaching, curriculum, supervision, assessment and professional development. Educational leaders also need to know how to collect, interpret and analyze what's been assessed and to use this data with reporting to various constituents of the learning community. The focus of this course is the integration of theory with the practices of instruction and assessment for improving the teaching/learning process.

EDA 614. Variable: Workshop. 1-6 Hours

VARIABLE TOPICS - Variable topics workshop.

EDA 626. Staff Personnel. 3 Hours

STAFF PERSONNEL - This course emphasizes the systematic selection, evaluation, assignment and development of both professional and classified school personnel. Scholar-practitioners participating in this class will develop an understanding of the associated task areas.

EDA 654. School Finance. 3 Hours

SCHOOL FINANCE - This course addresses topics such as equity, adequacy, efficiency in school funding; local, state, and federal funding sources; funding methods; and budgeting emphasizing features unique to Ohio.

EDA 655. Principalship. 3 Hours

PRINCIPALSHIP - This course centers on the application of leadership and management principles to the elementary, middle, and secondary school settings. Emphases include developing vision and mission statements, reflecting on the leadership role of the principal, and reviewing the process for the daily administration of the total school program.

EDA 659. Law of Special Educ. 3 Hours

LAW OF SPECIAL EDUCATION - Review of pertinent legislation and litigation and litigation impacting on the rights of parents, students, and teachers involved in the process of providing a free appropriate public education for children with disabilities. Emphasis is placed on how teachers can, through an understanding of the law, facilitate active parent participation in the developmental progress of students. Teachers' specific responsibilities are described in relation to current requirements for development of appropriate educational programs.

EDA 710. Curr Eval&Instruct. 3 Hours

CURRICULUM EVALUATION AND INSTRUCTION - This course is designed to refine participant understanding of the realms of meaning, characteristics of effective programs, research findings on effective instruction, and curriculum management.

EDA 711. Curr Devlp&Ldrshp. 3 Hours

CURRICULUM DEVELOPMENT AND LEADERSHIP - The major focus of the course will be how an educational leader at the district level designs and implements curriculum based upon philosophical, psychological, and historical underpinnings of curriculum theory. A recurring focus in the course is the relationship of practice and scholarship and practice and theory as the educational leader creates a learning community.

EDA 712. Program & Staff Dev. 3 Hours

PROGRAM AND STAFF DEVELOPMENT - This course is designed to strengthen student competence with program development and evaluation processes. Major emphasis is focused on staff development planning, program implementation, and program assessment.

EDA 718. Superintendency. 3 Hours

SUPERINTENDENCY - This course addresses the duties and responsibilities of central office administrators, especially those of the superintendent. Emphasis is placed on board of education relations, communication, and an analysis of the political structures within which the superintendent operates.

EDA 733. Internship III. 3 Hours

INTERNSHIP III - This internship provides significant opportunities for candidates to synthesize and apply the knowledge and practice and develop the skills identified in the ELCC standards through, substantial, sustained, standards-based work in real setting, planned and guided cooperatively by the institution and school district personnel. This course is intended to provide the participants with an opportunity to relate the coursework, research, simulation, and independent study in which they have engaged in real problems encountered in administration, supervision and instructional programs primarily in a district level/central office setting.

EDA 760. Sem:Dist Lev Mgt. 3 Hours

SEMINAR: DISTRICT LEVEL MANAGEMENT - This course is intended to provide the participants with the knowledge and understanding of practical issues necessary for school superintendents to successfully manage a school district. These issues include matters relevant to managing a school district as an organization, managing the various operational components of the district, and managing district resources. Prerequisite(s): Admitted to Superintendent licensure program or permission of department chairperson.

EDA 761. Distr Level Leadrshp. 3 Hours

SEMINAR: DISTRICT LEVEL LEADERSHIP - This course addresses current topics related to district level issues including curriculum and instruction leadership (planning, goals, alignment, staff development), technology, accreditation, staff-personnel (hiring and supervision of district and building level administrators), community partnerships, capacity building, contract issues, ethics, and legal issues (focusing on special education) appropriate to each section along with other related areas associated with successful instructional leadership at the district level. Emphasis is placed on meeting the needs of each group of students in the district and the relationships that must be developed in order to achieve these ends.

EDA 762. Plcy,Politcs&Dcs Mkg. 3 Hours

SEMINAR: POLICY, POLITICS, AND DECISION MAKING - The course is required for students seeking a district superintendent license. The curriculum is both explanatory and exploratory and includes the following general topics: recommending, enforcing, and evaluating school district policy; political dimensions of district administration in the context of representative democracy; and, the application of problem solving and decision making paradigms in district administration. Focused attention is given to local stakeholder involvement in policy development and problem solving.

EDA 807. Eds Project Seminar. 3 Hours

EDS PROJECT SEMINAR - Completion of the research project is an integral part of this degree program. Students earn three semester hours of credit for the completion of their research project. This project will relate to the individual's coursework, interest, and work responsibilities.

EDA 810. Curric Eval&Instruct. 3 Hours

CURRICULUM EVALUATION AND INSTRUCTION - See EDA 710.

EDA 811. Curr Devlp&Ldrshp. 3 Hours

CURRICULUM DEVELOPMENT AND LEADERSHIP - See EDA 711.

EDA 812. Program&Staff Dev. 3 Hours

PROGRAM AND STAFF DEVELOPMENT - See EDA 712.

EDA 818. Superintendency. 3 Hours

SUPERINTENDENCY - See EDA 718.

EDA 833. Internship III. 3 Hours

INTERNSHIP III - This experience is intended to provide the participant with an opportunity to relate the coursework, research, simulation, and independent study in which he/she has engaged to actual problems encountered in administration.

EDA 851. Research. 3 Hours

RESEARCH - This course is designed to provide practical application and issues in research as they relate to the educational leader. The objective of the course is the development of a proposal to conduct a research project which the student will finish prior to completion of the Educational Specialist degree program.

EDA 852. Assess&Instr Sch Impr. 3 Hours

ASSESSMENT AND INSTRUCTION FOR SCHOOL IMPROVEMENT - This course focuses on the role of educational leaders with setting and attaining high academic goals for the primary purpose of maximized student learning outcomes, thus improving the practices of instruction and assessment. Educational leaders need an understanding of the best practices for enhancing teaching, curriculum, supervision, assessment and professional development. Educational leaders also need to know how to collect, interpret and analyze what's been assessed and to use this data with reporting to various constituents of the learning community. The focus of this course is the integration of theory with the practices of instruction and assessment for improving the teaching/learning process.

EDA 855. Legal Issues-Sch Ldr. 3 Hours

LEGAL ISSUES IN SCHOOL LEADERSHIP - This course addresses the statutes and judicial decisions which relate to schools and the responsibilities of boards of education, teachers, and administrators. Emphasis is placed on understanding the legal framework as it relates to providing quality education.

EDA 859. Law of Special Educ. 3 Hours

LAW OF SPECIAL EDUCATION A - review of pertinent legislation and litigation and litigation impacting on the rights of parents, students, and teachers involved in the process of providing a free appropriate public education for children with disabilities. Emphasis is placed on how teachers can, through an understanding of the law, facilitate active parent participation in the developmental progress of students. Teachers' specific responsibilities are described in relation to current requirements for development of appropriate educational programs.

EDA 860. District Level Mgt. 3 Hours

SEMINAR: DISTRICT LEVEL MANAGEMENT - See EDA 760.

EDA 861. Distr Level Leadrshp. 3 Hours

SEMINAR: DISTRICT LEVEL LEADERSHIP - This course addresses current topics related to district level issues including curriculum and instruction leadership (planning, goals, alignment, staff development), technology, accreditation, staff-personnel (hiring and supervision of district and building level administrators), community partnerships, capacity building, contract issues, ethics, and legal issues (focusing on special education) appropriate to each section along with other related areas associated with successful instructional leadership at the district level. Emphasis is placed on meeting the needs of each group of students in the district and the relationships that must be developed in order to achieve these ends.

EDA 862. Picy,Politcs&Dsc Mkg. 3 Hours

SEMINAR: POLICY, POLITICS, AND DECISION MAKING - The course is required for students seeking a district superintendent license. The curriculum is both explanatory and exploratory and includes the following general topics: recommending, enforcing, and evaluating school district policy; political dimensions of district administration in the context of representative democracy; and, the application of problem solving and decision making paradigms in district administration. Focused attention is given to local stakeholder involvement in policy development and problem solving.

School of Engineering

Dr. Tony Saliba, Dean

The School of Engineering offers programs leading to master's and doctoral 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 pursue a broad field of study. Current graduate programs in the School of Engineering lead to the following degrees:

Master of Science

- Major in Aerospace Engineering
- Major in Bioengineering
- Major in Chemical Engineering
- Major in Civil Engineering
- Major in Electrical Engineering
- Major in Electro-Optics
- Major in Engineering
- Major in Engineering Management
- Major in Engineering Mechanics
- Major in Materials Engineering
- Major in Mechanical Engineering
- Major in Management Science
- Major in Renewable and Clean Energy

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

Doctor of Philosophy in Electro-Optics

Programs and the courses appropriate to each of these degrees are described in Academic Information.

Master's Degree Requirements

To learn more about available master's programs please click on the "Programs of Study" link in the navigation menu to the right.

Unclassified Status

Students anticipating acceptance into a degree-granting program may register for only six semester hours of graduate coursework without approval of the associate dean of engineering. There is no guarantee that any hours taken before acceptance will count toward a degree. An application for graduate study should be submitted as soon as possible to ensure that courses taken are compatible with degree requirements. Performance in graduate courses taken before acceptance to a graduate program does not change admission requirements.

Advising

Each student accepted into a master's program is assigned an academic advisor. A change of academic advisor is permissible upon request of the student. The academic advisor shall be a member of the program faculty and be approved by the department chair or program director, and the associate dean of engineering. The academic advisor will assist the student in preparing a plan of study.

Plan of Study

A student must complete a minimum of 30 semester hours of graduate work. The specific courses should be itemized and approved on a Plan of Study form to be submitted to the Office of the Dean of Engineering, prior to registration for the tenth graduate semester hour (excluding transfer credits), or before registration for the third semester. It is the student's responsibility to obtain approval from the academic advisor for any changes made to the plan of study and to submit to the academic advisor all deletions and additions in writing before the fourth week of the student's final semester. The plan of study and any amendments must be approved by the student's academic advisor, the department chair or program director, and the associate dean of engineering.

Transfer of Credit

Up to six semester hours, or the equivalent, of graduate studies outside the University of Dayton may be accepted toward the master's degree. The transfer credit must be of B or higher grade level, cannot have been used to satisfy the requirements of an undergraduate degree, and must be verified by an official transcript from the granting institution. It is the responsibility of the student to have the transcript(s) sent to the Office for Graduate Admission and Processing.

Thesis

Each student whose plan of study requires a thesis must prepare it in accordance with the format outlined in the University of Dayton's guide to creating and submitting a thesis or dissertation. This guide can be found at <http://libguides.udayton.edu/etd>. The thesis must be based on the student's own work. Joint authorship is not permitted. The thesis advisor is responsible for supervising and approving the work, and assisting in forming the thesis committee and scheduling a defense. The thesis advisor may or may not be the academic advisor. The thesis defense may be either oral or written or both. The thesis must be presented to and approved by a committee of at least three members, at least two of whom are on the graduate faculty. The committee must receive the thesis at least one week prior to an oral defense. No student shall be allowed to defend the thesis more than twice.

A pass/fail grade will be assigned to the quality of the work. A final approved copy of the thesis is due in the Office of the Dean of Engineering no later than one week before graduation.

Academic Standards

Master's degree students are required to maintain a minimum cumulative grade point average of a B (3.0) in coursework, with no more than six semester hours of C or one F grade. Grades received from a thesis are Pass/Fail, and do not count toward the minimum grade point average of 3.0. Students who fail to meet these standards are placed on academic probation or dismissed from the program.

Time Limit

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

Doctoral Degree Requirements

The School of Engineering offers programs leading to the Doctor of Philosophy (Ph.D.) in engineering and in electro-optics, and Doctor of Engineering (D.E.). The programs leading to the Ph.D. in engineering and D.E. degrees encompass major fields of study in aerospace engineering, electrical engineering, materials engineering, and mechanical engineering.

To learn more about available doctoral programs please click on the "Programs of Study" link on the navigation menu to the right.

Doctor of Philosophy (Ph.D.)

The Ph.D. is granted in recognition of superior achievement in independent research and coursework. The research must demonstrate that the student possesses the capacity for original thought, talent for research, and ability to organize and present findings.

The minimum credit hours required for the Ph.D. degree are 60 semester hours beyond the master's degree. This includes a minimum of 30 semester hours for the dissertation and a minimum of 30 semester hours of course-work. A student seeking the Ph.D. is required to complete a minimum of six semester hours in advanced mathematics.

The dissertation must either add to the fundamental knowledge of the field or provide a new and better interpretation of facts already known. It is expected to result in one or more manuscripts submitted for publication in a refereed journal.

Doctor of Engineering (D.E.)

The D.E. is granted in recognition of superior achievement in coursework and an independent project. The project will usually be broad in scope, involve more than one discipline or subdiscipline, and be closely tied to an industrial application.

A minimum of 60 semester hours beyond the master's degree is required for the D.E. degree. This includes a minimum of 21 semester hours for the dissertation and a minimum of 39 semester hours of coursework. A student seeking the D.E. is required to complete a minimum of 21 semester hours in the major area (covering the domains of at least two subdisciplines), a minimum of six semester hours in advanced mathematics, and nine semester hours in a synergistic area of engineering or science.

The dissertation must address an integrated industrial project. It is expected to result in a manuscript submitted for publication in an applied engineering journal and/or to documentation leading to a patent.

Temporary Advisor

Immediately upon admission into the doctoral program, a student will be assigned a temporary advisor. This temporary advisor will assist the student in the initial selection of courses for the first semester of enrollment.

Doctoral Advisory Committee

Before the student completes the second enrolled semester or 12 credit hours, the student, in consultation with the department chair or program director, selects a major professor to serve as the chair of the doctoral advisory committee. The chair of the doctoral advisory committee will be a member of the graduate faculty. An advisory committee consisting of the chair and at least two other graduate faculty members from the programs of the School of Engineering will then be recommended for approval to the department chair or program director and to the associate dean of engineering. Appointment of one additional member of the committee from outside the student's program (i.e., other university

faculty, adjunct professors, prominent researchers in industry or government) is required. One additional graduate faculty member may be appointed by the associate dean of engineering. The composition of the committee will generally reflect the student's area of study and research interest. The duties of the doctoral advisory committee include advising the student, assisting the student in preparing the program of study, administering and reporting the candidacy examination, assisting in planning and conducting research, approving the dissertation, and conducting and reporting the results of the dissertation defense. A dissertation advisor other than the chair of the doctoral advisory committee may be appointed by the doctoral advisory committee.

Plan of Study

The plan of study shall include all the specific courses beyond the master's degree that the student is required to complete. The plan shall indicate the time and manner in which these requirements will be met. It is to be completed and approved by the doctoral advisory committee, the department chair or program director, and the associate dean of engineering, before the beginning of the third semester of the student's enrollment.

Candidacy Examination

The candidacy examination for the doctoral degree is generally taken when most of the coursework, 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 doctoral degree. It will include two parts: (1) a written and an oral examination covering the domain of coursework; and (2) an oral examination on the dissertation proposal. Part 2 must be completed within six months of the completion of Part 1. At the discretion of the doctoral advisory committee, the Part 2 examination can be taken simultaneously with the oral portion of the Part 1 examination.

The proposal outlining in detail the proposed area of dissertation research should clearly show the review of the literature in the area, the need for and the uniqueness of the research, the general approach, expected results, the laboratories and/or other facilities needed, and a schedule of work. No more than 12 semester hours of dissertation can be taken prior to successful presentation of the dissertation proposal. The student must make a copy of this proposal available to each doctoral advisory committee member at least one week prior to the Part 2 examination.

The student must pass all parts of the examination to be admitted to candidacy. The student is considered to have passed only when the decision of the doctoral advisory committee is unanimous. All members must sign the examination report form with an indication of their decision noted prior to it being submitted to the associate dean of engineering. If any part of the examination is unsatisfactory, the student will be notified in writing of the conditions for 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 the submission of the examination report.

A student must pass the candidacy examination at least six months prior to the dissertation defense.

Dissertation

A single author dissertation is required of each doctoral candidate who has passed the candidacy examination. The dissertation topic will be selected by the student in consultation with the advisor and the doctoral advisory committee. The dissertation topic must be approved by the doctoral advisory committee. A manuscript prepared for an appropriate

journal and an acknowledgment of receipt by the editor must also be submitted along with the dissertation.

The student must obtain approval from the doctoral advisory committee to undertake all or part of the dissertation in absentia. A letter requesting such permission, signed by the chair of the doctoral advisory committee, must be submitted to the associate dean of engineering. This letter should outline 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 the advisory committee.

The University of Dayton's guide to creating and submitting a thesis or dissertation can be found at <http://libguides.udayton.edu/etd>.

Dissertation Defense

No earlier than six months after the successful candidacy examination, the candidate shall defend the doctoral dissertation in a public forum to demonstrate to the committee that all the preparation for which the doctoral degree is awarded has been met. The defense is open to all members of the University of Dayton faculty, student body, and interested outside parties. The members of the doctoral advisory committee, with the advisor acting as chair, will conduct this dissertation defense.

Before the announcement of this defense, the doctoral advisory committee must agree that the dissertation is ready for public defense. At least two weeks prior to the date of the defense, the candidate must provide the committee with copies of the nearly final dissertation and also submit "Request to Schedule Dissertation Defense" form to their advisor. For the defense to be satisfactory, the advisory committee members must agree that the dissertation defense has been successfully completed. If the candidate's defense is deemed unsatisfactory by only one member, the case will be referred to the associate dean of the engineering for appropriate action.

Additional Requirements

The student must satisfactorily complete the courses listed in the doctoral plan of study with a 3.0/4.0 or better cumulative GPA. One grade of "F" or more than six semester hours of "C" grade may be grounds for dismissal from the program by the Dean, pending recommendation of the doctoral advisory committee. Grades received from a dissertation are Pass/Fail, and do not count toward the GPA.

Two thirds of the semester hours required beyond the master's degree should be earned at the University of Dayton. Generally, this is 40 semester hours beyond the master's degree.

Candidates must complete a minimum of 30 semester hours of dissertation. Candidates are required to register for two semester hours of dissertation during the semester in which the dissertation is defended. Students are expected to complete the dissertation requirements for the doctoral degree within nine years from matriculation.

Any other specific requirements and sequences leading to these degrees are described in the following sections or in departmental and program documents.

Assistantships and Fellowships

Assistantships and fellowships are available for the encouragement of graduate work and the promotion of research. They are administered by the academic departments.

Programs of Study

The School of Engineering offers programs leading to master's and doctoral degrees in various areas of engineering.

To learn more about the available programs in the School of Engineering, explore the departments in the menu on the right.

Aerospace Engineering

Kelly Kissock, Department Chairperson

Doctorate of Engineering in Aerospace Engineering

See the Doctoral Degree Requirements section on the School of Engineering page and consult with the department chair.

Doctorate of Philosophy in Aerospace Engineering

See the Doctoral Degree Requirements section on the School of Engineering page and consult with the department chair.

Master of Science in Aerospace Engineering

The program of study leading to the Master of Science in Aerospace Engineering degree, developed by the student in conjunction with his/her advisor, must include a minimum of 30 semester hours. The program of study must include 18 or more semester hours of AEE coursework and a minimum of 3 semester hours of mathematics. Students may pursue a thesis or non-thesis option. A thesis option would include 6 semester hours of AEE 599 AEE Thesis coursework, which includes both an oral defense and a written thesis.

See also Master's Degree Requirements on the School of Engineering page and consult with the advisor.

Courses

AEE 500. Intro Numercl Mthds. 3 Hours

INTRODUCTION TO NUMERICAL METHODS - 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.

AEE 501. Adv Aerodynamics I. 3 Hours

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.

AEE 502. Adv Aerodynamics II. 3 Hours

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(s): AEE 501.

AEE 503. Intr Continuum Mech. 3 Hours

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(s): EGM 303.

AEE 504. Fund of Fluid Mech. 3 Hours

FUNDAMENTALS OF FLUID MECHANICS - An advanced course in fluid mechanics with emphasis on the derivation of conservation equations and the application of constitutive theory. Navier-Stokes equations. Ideal fluid approximation. Exact and approximate solutions to classical viscous and inviscid problems. Compressible and incompressible flows. Corequisite(s): MEE 503 or AEE 503.

AEE 505. Adv Aero Sys Des&Int. 3 Hours

ADVANCED AEROSPACE SYSTEMS DESIGN & INTEGRATION - Considers iterative aircraft design process through to preliminary design. A project based course, specific topics will vary but will apply to cutting edge aerospace systems integration and design problems. Students will take a set of requirements from conceptual design through to preliminary design, analysis, component testing, and integration on a systems level. Prerequisite(s): (MEE 425 or equivalent) or permission of instructor.

AEE 506. Mech Behavior-Matrls. 3 Hours

MECHANICAL BEHAVIOR OF MATERIALS - Fundamental relationships between the structure and mechanical behavior of materials. Includes fundamentals of stress and strain, the physical basis for elastic deformation, elementary dislocation theory and plastic deformation, strengthening mechanisms, yield criteria and their application to biaxial and multi-axial behavior and failure, fracture and toughening mechanisms, creep and creep rupture, behavior and failure of cellular solids, and fatigue. Prerequisite(s): (MAT 501, MAT 502) or consent of instructor.

AEE 507. Orbitl Dynamics. 3 Hours

ORBITAL DYNAMICS - Solution of the two-body problem; coordinate systems; time measurement; orbital elements. Basic orbital maneuvers; transfers; rendezvous; ground-tracks. Methods of orbit determination. Restricted three-body problem and introduction to artificial satellite theory. Prerequisite(s): MTH 219, EGM 202, or equivalent.

AEE 508. Aircraft Perf&Contrl. 3 Hours

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(s): AEE 501.

AEE 510. Intro-Finite Elmnts. 3 Hours

INTRODUCTION TO THE FINITE ELEMENT METHOD - Introductory development of the Finite Element Method (FEM), and solution of one- and two-dimensional field problems from fluid, solid, and thermal mechanics. Principles of virtual work and Hamilton; approximate methods; description of stiffness, nodal force, and mass matrices; matrix assembly procedures. Course emphasis on a broad understanding of FEM theory and applications. Not open to Aircraft Structures majors. Prerequisite(s): EGM 303.

AEE 511. Prin of Corrosion. 3 Hours

PRINCIPLES OF CORROSION - Theoretical and practical application of electrochemical principles to the field of corrosion covering thermodynamics, kinetics, forms of corrosion and methods for characterizing and controlling corrosion in areas of biomedical engineering, aerospace, automotive, and marine environments. Prerequisite(s): MAT 501.

AEE 513. Propulsion. 3 Hours

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(s): MEE 418.

AEE 514. Physicl Gas Dynamics. 3 Hours

PHYSICAL GAS DYNAMICS WITH AEROSPACE APPLICATIONS - Physical Gas Dynamics: The basic elements of kinetic theory, chemical thermodynamics, and statistical mechanics. Emphasis is placed on the application of these molecular theories for analyzing thermodynamic and transport phenomena, as they pertain to the modeling of 'real gas effects' in high temperature flows. The course assumes material media in local equilibrium in the gaseous state but some non-equilibrium behavior will also be considered. The equilibrium topics include kinetic theory and concepts related to microscopic, molecular collisions, macroscopic chemical thermodynamics, the law of mass action, internal molecular structure and quantum energy states, general statistical mechanics applied to the prediction of thermodynamic properties of monatomic and diatomic gases, chemically reacting mixtures, and the dissociation and ionization of gases. Prerequisite(s): Background in fluid mechanics, thermodynamics, and compressible flow or permission of instructor.

AEE 515. Conduction Heat Tran. 3 Hours

CONDUCTION HEAT TRANSFER - Steady state and transient state conduction. Evaluation of temperature fields by formal mathematics, numerical analysis. Emphasis on approximate solution techniques.

AEE 516. Cnvct Heat&Mass Trs. 3 Hours

CONVECTION HEAT AND MASS TRANSFER - Development of governing differential equations for convection. Methods of solution including similarity methods, integral methods, superposition of solutions, eigenvalue problems. Turbulent flow convection; integral methods, eddy diffusivities for heat and momentum. Extensions to mass transfer. Prerequisite(s): MEE 410.

AEE 517. Radiation Heat Trans. 3 Hours

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.

AEE 519. Analytical Dynamics. 3 Hours

ANALYTICAL DYNAMICS - Dynamical analysis of a system of particles and rigid bodies. Lagrangian and Hamiltonian formulation of equations of motion; classical integrals of motion. Stability analysis of linear and nonlinear systems. Prerequisite(s): EGM 202, MTH 219, or equivalent.

AEE 520. Theoretcl Kinetmtcs. 3 Hours

THEORETICAL KINEMATICS - Introduction to the mathematical theory underlying the analysis of general spatial motion. Analysis of mechanical systems including robots, mechanisms, walking machines and mechanical hands using linear algebra, quaternion and screw formulations. Fundamental concepts include forward and inverse kinematics, workspace, Jacobians, and singularities.

AEE 522. Geom Mthds-Kinematcs. 3 Hours

GEOMETRIC METHODS IN KINEMATICS - Trajectories and velocities of moving bodies are designed and analyzed via the principles of classical differential and algebraic geometry. Fundamentals include centrodes, instantaneous invariants, resultants and center point design curves. Curves, surfaces, metrics, manifolds and geodesics in spaces of more than three dimensions are analyzed to study multi-parameter systems.

AEE 523. Engr Desgn Optimiz. 3 Hours

ENGINEERING DESIGN OPTIMIZATION - An introduction to the theory and algorithms of nonlinear optimization with an emphasis on applied engineering problems. Fundamentals include Newton's method, line searches, trust regions, convergence rates, and linear programming. Advanced topics include penalty, barrier and interior-point methods.

AEE 524. Electrochemical Powr. 3 Hours

ELECTROCHEMICAL POWER - The course will cover fundamental as well as engineering aspects of fuel cell technology. Specifically, the course will cover basic principles of electrochemistry, electrical conductivity (electronic and ionic) of solids, and development/design of major fuel cells (alkaline, polymer electrolyte, phosphoric acid, molten carbonate, and solid oxide). A major part of the course will focus on solid oxide fuel cells (SOFC), as it is emerging to be dominant among various fuel cell technologies. The SOFC can readily and safely use many common hydrocarbon fuels such as natural gas, diesel, gasoline, alcohol, and coal gas. Prerequisite(s): MEE 301, MEE 312 or permission of instructor.

AEE 526. Aero Fuels Sci. 3 Hours

AEROSPACE FUELS SCIENCE - Basic elements of hydrocarbon fuel production including petroleum based fuels and alternative fuels. Fuel properties, specifications, handling, and logistics. Introduction to chemical kinetics and the chemistry associated with liquid phase thermal-oxidative degradation of fuels. Introduction to the computational modeling of fuel thermal stability and fuel systems. Prerequisite(s): Permission of instructor.

AEE 527. Automatc Contrl Thry. 3 Hours

AUTOMATIC CONTROL THEORY - Stability and performance of automatic control systems. Classical methods of analysis including transfer functions, time-domain solutions, root locus and frequency response methods. Modern control theory techniques including state variable analysis, transformation to companion forms, controllability, pole placement, observability and observer systems. Prerequisite(s): ELE 432, MEE 435, or equivalent.

AEE 535. Mechanical Vibratns. 3 Hours

MECHANICAL VIBRATIONS - Review of undamped, damped, natural and forced vibrations of one and two degrees of freedom systems. Lagrange's equation, eigenvalue/eigenvector problems, modal analysis for discrete and continuous systems. Computer application for multi-degree of freedom, nonlinear problems. Prerequisite(s): MEE 319; computer programming.

AEE 536. Random Vibrations. 3 Hours

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. Prerequisite(s): MEE 319; computer programming.

AEE 538. Intro-Aeroelasticity. 3 Hours

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. Prerequisite(s): AEE 501.

AEE 540. Flight Dynamics. 3 Hours

FLIGHT DYNAMICS - Laplace Transforms are used to investigate one DOF harmonic oscillations. One to six DOF differential equations of motion, including inertia, geometric, thrust, and aerodynamic terms are developed in the time domain. Euler angle rotations determine the orientation of the body. Small Disturbance Theory is used to linearize the equations, and the complex eigenproblem is solved to determine stability and mode shapes of aircraft motion. Pitch plane and lateral dynamics are analysed in both the time and frequency domains. Prerequisite(s): MTH 219, EGM 202.

AEE 541. Expr Mch-Cmpste Mtls. 3 Hours

EXPERIMENTAL MECHANICS OF COMPOSITE OF COMPOSITE MATERIALS - Introduction to the mechanical response of fiber-reinforced composite materials with emphasis on the development of experimental methodology. Analytical topics include stress-strain behavior of an isotropic materials, laminate mechanics, and strength analysis. Theoretical models are applied to the analysis of experimental techniques used to characterize composite materials. Lectures are supplemented by laboratory sessions in which characterization tests are performed on contemporary composites. Prerequisite(s): EGM 303 or EGM 330.

AEE 543. Analy Mech-Cmp Matls. 3 Hours

ANALYTICAL MECHANICS OF COMPOSITE MATERIALS - Analytical models are developed to predict the mechanical and thermal behavior of fiber-reinforced composite materials as a function of constituent material properties. Both continuous and discontinuous fiber-reinforced systems are considered. Specific topics include basic mechanics of an isotropic materials, micromechanics, lamination theory, free-edge effects, and failure criteria. Prerequisite(s): EGM 303 or EGM 330.

AEE 544. Mech-Composite Struc. 3 Hours

MECHANICS OF COMPOSITE STRUCTURES - Comprehensive treatment of laminated beams, plates, and sandwich structures. Effect of heterogeneity and anisotropy on bending under lateral loads, buckling, and free vibration are emphasized. Shear deformation and other higher order theories and their range of parametric application are also considered. Prerequisite(s): MAT 543 or permission of instructor.

AEE 545. Computatn Mthds-Dsgn. 3 Hours

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, use of the digital computer as an aid in the design of mechanical elements. Prerequisite(s): Computer programming.

AEE 546. Finite Elmnt Anly I. 3 Hours

FINITE ELEMENT ANALYSIS I - Fundamental development of the Finite Element Methods (FEM) and solution to field and comprehensive structural problems. Variational principles and weak-forms; finite element discretization; shape functions; finite elements for field problems; bar, beam, plate, and shell elements; isoparametric finite elements, stiffness, nodal force, and mass matrices; matrix assembly procedures; computer coding techniques; modeling decisions; program output interpretation. Course emphasis on a thorough understanding of FEM theory and modeling techniques. Prerequisite(s): AEE 503 or MEE 533.

AEE 547. Finite Elmnt Anal II. 3 Hours

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(s): AEE 546.

AEE 551. Noise & Vibr Control. 3 Hours

NOISE AND VIBRATION CONTROL - Concepts of noise and vibration control applied to mechanical systems. Methodologies covered will include passive treatments using resistive elements (sound absorbers, vibration damping) and reactive elements (tailoring of material stiffness and mass); active control of sound and vibration; and numerical analysis. Prerequisite(s): MEE 319 or MEE 439.

AEE 552. Boundry Layers Thry. 3 Hours

BOUNDARY LAYERS THEORY - Development of the Prandtl boundary layer approximation in two and three dimensions for both compressible and incompressible flows. Exact and approximate solutions for laminar flows. Unsteady boundary layers. Linear stability theory and transition to turbulence. Empirical and semi-empirical methods for turbulent boundary layers. Higher order boundary layer theory. Prerequisite(s): AEE 504 or equivalent.

AEE 553. Compressible Flow. 3 Hours

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(s): AEE 504 or equivalent.

AEE 555. Turbulence. 3 Hours

TURBULENCE - Origin, evolution, and dynamics of fully turbulent flows. Description of statistical theory, spectral dynamics, and the energy cascade. Characteristics of wall-bounded and free turbulent shear flows. Reynolds stress models. Prerequisite(s): AEE 504 or equivalent.

AEE 556. Hypersonic Aerodynmc. 3 Hours

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(s): AEE 504 or permission of instructor.

AEE 558. Compu Fluid Dyn. 3 Hours

COMPUTATIONAL FLUID DYNAMICS - 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. Prerequisite(s): AEE 504 or permission of instructor.

AEE 560. Propulsion Systems. 3 Hours

PROPULSION SYSTEMS - Introduction and history, types of propulsion systems, thermodynamics review and simple cycle analysis, thermodynamics of high speed gas flow, aircraft gas turbine engine, parametric cycle analysis of various types of gas turbine engines, component and engine performance analysis (inter-turbine burners), advanced cycles with regeneration, reheating, and inter-cooling, variable and inverse cycle engines, hybrid propulsion systems (turbo-ramjets, rocket-ram-scrumjets, etc.), advanced propulsion systems, pulse detonation engine theory and concepts, thermal management of high-speed flight, energy management and vehicle synthesis. Prerequisite(s): (MEE 413 or MEE 513) or permission of instructor.

AEE 565. Fundmntls-Combustion. 3 Hours

FUNDAMENTALS OF FUELS AND 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.

AEE 566. Combustion Theory. 3 Hours

COMBUSTION THEORY - Theory of detonation (Rankine-Hugoniot relationships) and flame propagation rates 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.

AEE 567. Smart Struc & Mat Ovr. 3 Hours

SMART STRUCTURES AND MATERIALS OVERVIEW - Components of materials, sensing, actuation, and modeling. Electro-mechanical and thermo-mechanical modeling of SMA and piezo-ceramic materials. Elements of control, sensing, and vibration theory. Examples of using piezo-ceramic and shape memory alloy (SMA) based structures for actuation, vibration, position, and shape control with applications in automotive, aircraft, and satellites. Prerequisite(s): MEE 312 or permission of instructor; background in materials, electronics, vibrations, and controls or permission of instructor.

AEE 570. Fracture Mechanics. 3 Hours

FRACTURE MECHANICS - Application of the principles of fracture mechanics to problems associated with fatigue and fracture in engineering structures. The course will cover the development of models that apply to a range of materials, geometries and loading conditions. Prerequisite(s): AEE 506 or permission of instructor.

AEE 590. Problms in Aero Engr. 1-3 Hours

PROBLEMS IN AEROSPACE ENGINEERING - Special topics in Aerospace.

AEE 595. AEE Engineering Proj. 1-6 Hours

AEE 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.

AEE 599. AEE Thesis. 3-6 Hours

AEROSPACE ENGINEERING THESIS - Thesis in Aerospace Engineering.

AEE 690. Selected Readings. 1-3 Hours

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.

AEE 698. DE Dissertation. 1-15 Hours

DE DISSERTATION - An original investigation as applied to aerospace engineering practice. Results must be of sufficient importance to merit publication.

AEE 699. PHD Dissertation. 1-15 Hours

PHD DISSERTATION - Research in aerospace engineering. Results must be of sufficient importance to merit publication.

BIOENGINEERING

Charles E. Browning, Department Chairperson
Robert J. Wilkens, Bioengineering Program Director

Master of Science in Bioengineering

The program of study leading to the Master of Science in Bioengineering must include a minimum of 30 semester hours consisting of the following:

Bioengineering Core:

BIE 501	Intro Bioengineering ¹	3
BIE 503	Princ Biol for Bioen	3
BIE 505	Princ Engr for Bioen ²	3
BIE 507	Bioenr Exp Tech	3
MTH 527	Biostatistics	3

Select one emphasis from:**Biomaterials/Biomechanics:** 4-6

MAT 595	Special Problems	
BIE 521	Biomechanical Egr	

Bioprocess: 6

BIE 533	Biofuel	
CEE 560	Bio Proc Wastewatr	

Biosystems: 6

BIE 551	Trans Phen Bio Sys	
BIE 561	Biomed Engr I	

Electives (as approved by advisor and program director) 6**Choose thesis or non-thesis:**

Thesis: approved thesis project, a final examination is required at completion of thesis	6
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Non-thesis:	6
Electives (3 hours)	
Capstone project (3 hours)	
Total Hours	49-51

- 1 Or Biology undergraduate.
- 2 Or Engineering undergraduate.

See also Master's Degree Requirements under School of Engineering in the catalog and consult with the advisor. The program has faculty with joint appointments in various programs within the School of Engineering and the College of Arts and Sciences.

Courses

BIE 501. Intro Bioengineering. 3 Hours

INTRODUCTION TO BIOENGINEERING - This class provides an introduction to bioengineering - a branch of engineering focusing on biological systems, biomaterials, engineering applications in living systems, and many other areas. By the end of this course, students will be able to understand bioengineering applications and processes, and properly apply engineering fundamentals, including transport phenomena and reaction kinetics, to these systems. Prerequisite(s): BIO 501, CME 324 or MEE 308 or permission of instructor.

BIE 503. Princ Biol for Bioen. 3 Hours

PRINCIPLES OF BIOLOGY FOR BIOENGINEERS - This course is designed for students with undergraduate majors in engineering or non-biological sciences. The focus of the course is to provide a common broad base of basic knowledge and terminology in the biological sciences required for coursework in the bioengineering emphasis tracts. Prerequisite(s): (BIO 151, BIO 152) or permission of instructor.

BIE 505. Princ Engr for Bioen. 3 Hours

PRINCIPLES OF ENGINEERING FOR BIOENGINEERS - This course is designed for students with an undergraduate degree in science. The focus of the course is to provide a common broad base of basic knowledge and terminology in engineering required for coursework in the bioengineering emphasis tracts. It will cover basic mass and energy conservation and provide an introduction to thermodynamics, fluid mechanics, and heat and mass transfer. Prerequisite(s): MTH 219 or permission of instructor.

BIE 507. Bioenr Exp Tech. 3 Hours

BIOENGINEERING EXPERIMENTATION TECHNIQUES - Lecture/laboratory based course in basic biology laboratory techniques, generating testable hypotheses, formulating experimental design, report writing, and scientific presentation. Students will be introduced to basic techniques in DNA cloning, protein purification, RNA isolation, and bioengineering applications. Corequisite(s): (BIE 503 or equivalent) or permission of instructor.

BIE 521. Biomechanical Egr. 3 Hours

BIOMECHANICAL ENGINEERING - Application of engineering principles to clinical, occupational, and sports biomechanics topics. The course focuses on biomechanical analysis, particularly kinematics and kinetics of human movement, with emphasis on both research and product design. Prerequisite(s): (EGM 202; EGR 201) or permission of instructor.

BIE 529. Computational Chem. 3 Hours

COMPUTATIONAL CHEMISTRY - Introduction to computational chemistry including a discussion of ab initio, semiempirical, and DFT methods and an overview of molecular mechanics and molecular simulation methods. Lectures are supplemented by simulation exercises using commercial programs such as Gaussian and Milecular Studio. Prerequisite(s): CHM 124 or consent of instructor.

BIE 533. Biofuel. 3 Hours

BIOFUEL - The course will provide an overview of the range of fuels derived from biological materials and processes, with a focus on anaerobic digestion, bioethanol and biodiesel and production of synthetic fuel from biological materials. The course will include an overview of the biochemistry of energy production in biological systems, discussions of the economics and environmental sustainability of biofuels, and a review of reactor and separation systems concepts relevant to biofuel production. Prerequisite(s) EGR 202, CHM 123 or consent of instructor.

BIE 551. Trans Phen Bio Sys. 3 Hours

TRANSPORT PHENOMENA IN BIOLOGICAL SYSTEMS - An integrated interdisciplinary systems-based examination of biological transport phenomena (momentum, heat and mass) and hemodynamics through mathematical modeling and biological processes as applied to physiological systems, with a focus on the cardiovascular, respiratory, and renal systems. Prerequisite(s): (BIE 503 or BIE 505; BIO 151, BIO 152; MTH 218) or permission of instructor.

BIE 560. Bio Proc Wastewatr. 3 Hours

BIOLOGICAL PROCESSING OF WASTEWATER - Measuring the characteristics of wastewater produced from domestic and industrial sources. Principles of designing and operating microbiological processes for the treatment of wastewater. Mechanism and kinetics of biological reactions emphasized. Prerequisite(s): CHM 124.

BIE 561. Biomed Engr I. 3 Hours

BIOMEDICAL ENGINEERING I - Introduction to the fundamental concepts in biomedical engineering with specific focus on chemical engineering applications. Biomedical topics include overviews of areas such as biomaterials, tissue engineering, biosensors and biomedical engineering technology. Prerequisite(s): BIO 151 and CME 324 or BIE 501 or permission of instructor.

BIE 590. Selected Readings. 1-3 Hours

SELECTED READINGS IN BIOENGINEERING - Directed readings in selected areas of bioengineering to be arranged and approved by the advisor and the program director.

BIE 595. Special Problems. 1-6 Hours

SPECIAL PROBLEMS IN BIOENGINEERING - Special assignments in bioengineering to be arranged and approved by the advisor and the program director.

BIE 597. Research Methods. 3 Hours

RESEARCH METHODS - This course will provide students the ability to apply research methods and problem solving skills to identify and define a research problem, develop hypotheses and research plans to test those hypotheses. Students will write and present an original research proposal.

BIE 598. Capstone Project. 1-3 Hours

CAPSTONE PROJECT - This is a capstone project to be used by non-thesis students. Students must submit a proposal and a final report.

BIE 599. Thesis. 3-6 Hours

THESIS - This is a two course sequence to cover the research and thesis preparation of the graduate student.

Chemical Engineering

Charles E. Browning, Department Chairperson
Kevin J. Myers, Chemical Engineering Program Coordinator

Master of Science in Chemical Engineering

The program of study leading to the Master of Science in chemical engineering must include a minimum of 30 semester hours consisting of the following:

Fifteen semester hours of chemical engineering graduate courses, including:

CME 507	Adv Thermodynamics	
CME 521	Adv Transprt Phenom	
or CME 522	Adv Top: Transp Phen	
CME 542	Chem Engr Kinetics	
or CME 543	Chm Reactr Analy&Des	
CME 581	Adv CME Calc I	
or CME 582	Adv CME Calc II	

Nine semester hours of electives as approved by the advisor and the department chair. 9

Thesis project * 6

Total Hours 30

* A final examination is required at the completion of the thesis. Upon the request of the student and with the approval of the faculty advisor and chair of the department, six hours of additional coursework plus three hours of special problem work may be substituted for the thesis.

See also Master's Degree Requirements in School of Engineering section in the bulletin and consult with the advisor. The program of study allows concentrations in the following areas:

- Fuels and Combustion
- Environmental Engineering
- Materials Engineering
- Process Modeling and Control
- Bio-Engineering

Courses

CME 507. Adv Thermodynamics. 3 Hours

ADVANCED THERMODYNAMICS - Entropy balance. Thermodynamics of energy conversion. Mixtures. Equilibria. Current applications.

CME 508. Adv Topics-Chem Engr. 3 Hours

ADVANCED TOPICS IN CHEMICAL ENGINEERING - Advanced Topics in Chemical Engineering.

CME 509. Intro Polymr Science. 3 Hours

INTRODUCTION TO POLYMER SCIENCE- THERMOPLASTICS - Broad technical overview of the nature of synthetic macromolecules, including the formation of polymers and their structure, structure-property relationships, polymer characterization and processing, and applications of polymers. Fundamental topics such as viscoelasticity, the glassy state, time-temperature superposition, polymer transitions, and free volume will also be reviewed. The course focuses on thermoplastic polymers. Prerequisite(s): College chemistry; college physics, differential equations.

CME 510. High Prf Therm-Polymr. 3 Hours

HIGH PERFORMANCE THERMOSET POLYMERS - Survey of high performance thermoset resins, focusing on chemistry, processing and properties of six general resin families; vinyl ester, epoxy phenolic, cyanate ester, bismaleimide and polyimides. The course will include fundamental discussions of polymerization mechanisms, network structure development, rheology and time-temperature transformation, resin toughening, and structure processing property relationships. Characterization techniques will also be reviewed. Prerequisite(s): CME 509 or MAT 509 or general and organic chemistry or differential equations or permission of instructor.

CME 511. Prin of Corrosion. 3 Hours

PRINCIPLES OF CORROSION - Theoretical and practical application of electrochemical principles to the field of corrosion covering thermodynamics, kinetics, forms of corrosion and methods for characterizing and controlling corrosion in areas of biomedical engineering, aerospace, automotive, and marine environments. Prerequisite(s): MAT 501.

CME 512. Adv Composites. 3 Hours

ADVANCED COMPOSITES - Materials and processing. Comprehensive introduction to advanced fiber reinforced polymeric matrix composites. Constituent materials and composite processing will be emphasized with special emphasis placed on structure-property relationships, the role of matrix in composite processing, mechanical behavior and laminate processing. Specific topics will include starting materials, material forms, processing, quality assurance, test methods, and mechanical behavior. Prerequisite(s): Permission of instructor.

CME 515. Stat Thermodynamics. 3 Hours

STATISTICS IN THERMODYNAMICS - Statistics in Thermodynamics.

CME 521. Adv Transprt Phenom. 3 Hours

ADVANCED TRANSPORT PHENOMENA - Applications of the principles of momentum, heat and mass transfer to steady state and transient problems. Molecular concepts. Transport in turbulent flow. Boundary layer theory. Numerical applications. Prerequisite(s): CME 324, CME 381 or equivalent.

CME 522. Adv Top: Transp Phen. 3 Hours

ADVANCED TOPICS IN TRANSPORT PHENOMENA - The equations of change for multicomponent systems. Turbulent mass transport. Interphase transport in multicomponent systems. Combustion analysis. Macroscopic balances. Prerequisite(s): CME 325, CME 581, or equivalent.

CME 523. Trans Phen Biol Sys. 3 Hours

TRANSPORT PHENOMENA IN BIOLOGICAL SYSTEMS - An integrated interdisciplinary systems-based examination of biological transport phenomena (momentum, heat and mass) and hemodynamics through mathematical modeling and biological processes as applied to physiological systems, with a focus on the cardiovascular, respiratory, and renal systems. Prerequisite(s): (BIE 503 or BIE 505; BIO 151, BIO 152; MTH 218) or permission of instructor.

CME 524. Electrochem Pwr. 3 Hours

ELECTROCHEMICAL POWER - The course will cover fundamental as well as engineering aspects of fuel cell technology. Specifically, the course will cover basic principles of electrochemistry, electrical conductivity (electronic and ionic) of solids, and development/design of major fuel cells (alkaline, polymer electrolyte, phosphoric acid, molten carbonate, and solid oxide). A major part of the course will focus on solid oxide fuel cells (SOFC), as it is emerging to be dominant among various fuel cell technologies. The SOFC can readily and safely use many common hydrocarbon fuels such as natural gas, diesel, gasoline, alcohol, and coal gas. Prerequisite(s): CME 311, CME 324, or permission of instructor.

CME 527. Methds-Polymer Analy. 3 Hours

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 and rheological properties; transitions and crystallinity. Prerequisite(s): CME 509, CME 510 or consent of instructor.

CME 528. Chem Behav of Matls. 3 Hours

CHEMICAL BEHAVIOR OF MATERIALS - This course will address chemical behavior as a subject complementary to mechanical behavior of materials. A special emphasis will be given to structure-property relationships of the major classes of materials. Physical/chemical periodicity, bonding, processing chemistry, and chemical behavior in the application environment will be addressed. Each major class of materials will be discussed with specific case studies for each. Prerequisite(s): College chemistry or permission of the instructor.

CME 529. Computational Chem. 3 Hours

COMPUTATIONAL CHEMISTRY - Introduction to computational chemistry including a discussion of ab initio, semiempirical, and DFT methods and an overview of molecular mechanics and molecular simulation methods. Lectures are supplemented by simulation exercises using commercial programs such as Gaussiari and Molecular Studio. Prerequisite(s): CHM124, or consent of instructor.

CME 532. Chem Product Design. 3 Hours

CHEMICAL PRODUCT DESIGN - Application of the design process to products based on chemical technology. Coverage of the entire design process from initial identification of product ideas, and culminating in the manufacture of a new product. Prerequisite(s): CME 311 and CME 324 or consent of instructor.

CME 533. Biofuel. 3 Hours

BIOFUEL - The course will provide an overview of the range of fuels derived from biological materials and processes, with a focus on anaerobic digestion, bioethanol and biodiesel, and production of synthetic fuel from biological materials. The course will include an overview of the biochemistry of energy production in biological systems, discussions of the economics and environmental sustainability of biofuels, and a review of reactor and separation systems concepts relevant to biofuel production. Prerequisite(s) EGR 202, CHM 123, or consent of instructor.

CME 541. Process Dynamics. 3 Hours

PROCESS DYNAMICS - Mathematical modeling and computer simulation of process dynamics and control for chemical engineering processes.

CME 542. Chem Engr Kinetics. 3 Hours

CHEMICAL ENGINEERING KINETICS - Reaction kinetics. Heterogeneous catalytic reactions. Transport processes with fluid-solid heterogeneous reactions. Noncatalytic gas-solid reactions. Catalyst deactivation. Gas-liquid reactions. Prerequisite(s): CME 381, CME 306, or equivalent.

CME 543. Chm Reactr Analy&Des. 3 Hours

CHEMICAL REACTOR ANALYSIS AND DESIGN - Design for optimum selectivity. Stability and transient behavior of the mixed flow reactor. Nonideal flow and balance models. Fixed and fluidized bed reactors. Multiphase flow reactors. Prerequisite(s): CME 381, CME 306, or equivalent.

CME 550. Agitation. 3 Hours

AGITATION - Agitator design and scaleup for blending and motion, solids suspension, gas dispersion, and viscous operations; experimental, computational, and design tools of agitation; static mixing; and mixing with chemical reaction. Prerequisite(s): CME 465 or permission of instructor.

CME 560. Bio Proc Wastewatr. 3 Hours

BIOLOGICAL PROCESSING OF WASTEWATER - Measuring the characteristics of wastewater produced from domestic and industrial sources. Principles of designing and operating microbiological processes for the treatment of wastewater. Mechanisms and kinetics of biological reactions emphasized. Prerequisite(s): CHM 124.

CME 562. Phy&Chm Wast Trmt Pr. 3 Hours

PHYSICAL AND CHEMICAL WASTEWATER TREATMENT PROCESSES - Designing of physical and chemical unit processes to treat wastewater originating primarily from industrial sources. Industry pretreatment technologies and the basis for their development. Prerequisite(s): CHM 123; CME 465, or permission of instructor.

CME 563. Hazardous Waste Engr. 3 Hours

HAZARDOUS WASTE ENGINEERING - The fundamental principles of the design and operation of hazardous waste remediation processes. Characterizing contaminated sites and conducting treatability studies to select remediation strategies. Prerequisite(s): CHM 123; CME 465, or permission of instructor.

CME 564. Solid Waste Engr. 3 Hours

SOLID WASTE ENGINEERING - Solid Waste Engineering.

CME 565. Fund of Combustion. 3 Hours

FUNDAMENTALS OF COMBUSTION - Flames and combustion waves, detonation waves in gases, the chemistry of combustion, combustion of hydrocarbons, special aspects of gaseous combustion, combustion in mixed and condensed phases, explosions in closed vessels, and combustion and the environment. Prerequisite(s): CME 311, CME 306, or permission of instructor.

CME 574. Air Pollutn I. 3 Hours

FUNDAMENTALS OF AIR POLLUTION I - Air pollution; combustion fundamentals; pollutant formation and control in combustion; pollutant formation and control methods in internal combustion engines; particle formation in combustion. Prerequisite(s): (CME 311 or MEE 301, MEE 302); (CME 324 or MEE 410), or permission of instructor.

CME 575. Air Pollutn II. 3 Hours

FUNDAMENTALS OF AIR POLLUTION ENGINEERING II - Review of the concepts of air pollution engineering; aerosols; removal of particles from gas streams; removal of gaseous pollutants from effluent streams; optimal air pollution control strategies. Prerequisite(s): CME 574 or permission of instructor.

CME 576. Env Egr Sep Presses. 3 Hours

ENVIRONMENTAL ENGINEERING SEPARATION PROCESSES - Environmental Engineering Separation Processes.

CME 579. Energy Materials. 3 Hours

MATERIALS FOR ADVANCED ENERGY APPLICATIONS - Various advanced energy technologies (AMTEC, Fuel Cells, Thermoelectrics, Nuclear, etc.) will be discussed with an emphasis on the role that materials have/will play in their development. Critical 'bottlenecks' in materials development delaying the introduction of new advanced energy systems will be identified. In addition, how material selections are made based on operational system environments in 'real world' scenarios will be presented. Prerequisite(s): (MAT 501, MAT 502) or permission of instructor.

CME 580. Polymers Durability. 3 Hours

POLYMER DECOMPOSITION, DEGRADATION, AND DURABILITY - An in-depth study of the mechanisms leading to polymer decomposition and degradation, as well as methods for analyzing and preventing or minimizing these processes and thereby improving polymer durability. Topics include thermal/pyrolytic, thermo-oxidative, hydrolysis, photo/UV/weathering, flammability, mechanical, biodegradation, high energy radiation, and physical aging. Prerequisite(s): CME 509 / MAT 509 or CME 510 / MAT 510.

CME 581. Adv CME Calc I. 3 Hours

ADVANCED CHEMICAL ENGINEERING CALCULATIONS I - Applications of ordinary and partial differential equations to engineering problems. Classical methods of solution. Prerequisite(s): MTH 219 or permission of instructor.

CME 582. Adv CME Calc II. 3 Hours

ADVANCED CHEMICAL ENGINEERING CALCULATIONS II - Analyses and solutions of engineering problems described by differential equations. Numerical methods of solution.

CME 583. Process Modeling. 3 Hours

PROCESS MODELING - Process Modeling.

CME 586. Intro-Petroleum Engr. 3 Hours

INTRODUCTION TO PETROLEUM ENGINEERING - Introduction to the fundamental concepts in petroleum engineering. Petroleum topics include overviews of areas such as petroleum geology, petroleum fluids and thermodynamics, drilling and completion, and production and multiphase flow. In addition this course will cover refinery operations. Second term, each year. Prerequisite(s): Permission of instructor.

CME 590. Intro Bioengineering. 3 Hours

INTRODUCTION TO BIOENGINEERING - This class provides an introduction to bioengineering - a branch of engineering focusing on biological systems, biomaterials, engineering applications in living systems, and many other areas. By the end of this course, students will be able to understand bioengineering applications and processes, and properly apply engineering fundamentals, including transport phenomena and reaction kinetics, to these systems. Prerequisite(s): BIO 151, CME 324 or MEE 308 or permission of instructor.

CME 591. Biomed Engr I. 3 Hours

BIOMEDICAL ENGINEERING I - Introduction to the fundamental concepts in biomedical engineering with a special focus on chemical engineering applications. Biomedical topics include overviews of areas such as biomaterials, tissue engineering, biosensors and biomedical engineering technology. Second term, each year. Prerequisite(s): BIO 151 and CME 324, or BIE 501 or permission of instructor.

CME 592. Chemical & Biosensor. 3 Hours

CHEMICAL SENSORS AND BIOSENSORS - Analysis performed with chemical sensors complement laboratory analysis and offer the potential of more rapid and on-line analysis in complex sample matrices. The demand for new chemical sensors, biosensors and sensing concepts is rapidly increasing and associated with the growing need to understand and/or control complex chemical and biochemical processes or detect the presence of toxic chemical or biological agents. Prerequisite(s): Permission of instructor.

CME 595. Special Problems. 1-6 Hours

SPECIAL PROBLEMS IN CHEMICAL ENGINEERING - Special assignments in Chemical Engineering to be arranged and approved by the advisor and the program director.

CME 597. Research Methods. 3 Hours

RESEARCH METHODS - This course will provide students the ability to apply research methods and problem solving skills to identify and define a research problem, develop hypotheses and research plans to test those hypotheses. Students will write and present an original research proposal.

CME 599. Thesis. 3-6 Hours

THESIS - Chemical Engineering Thesis.

Civil and Environmental Engineering

Donald V. Chase, Department Chairperson

Master of Science in Civil Engineering

The program of study for the degree of Master of Science in Civil Engineering, developed in cooperation with an advisor assigned by the department chair, must include a minimum of 30 semester hours. The program of student must include:

1. Fifteen to eighteen semester hours in civil engineering and/or engineering mechanics.
2. Six to nine semester hours of engineering or basic science electives.
3. Six semester hours of research on a civil engineering topic, CEE 599 Thesis. Upon request of the student, and with the approval of the faculty advisor and the department chair, the six thesis hours may be replaced with six hours of coursework plus three hours of project, CEE 598 Project, for a total of 33 credit hours (non-thesis option). A final oral examination is required upon completion of the thesis or project.

Students may elect to include an area of concentration in their program of study by selecting courses from the below areas. Civil Engineering courses in addition to the offerings listed below are available.

Environmental

CEE 560	Bio Proc Wastewatr	3
CEE 562	Phy & Chm Wastewatr	3
CEE 563	Hazardous Waste Engr	3
CEE 564	Solid Waste Engineering	3
CEE 574	Fund. of Air Pollution Engr.	3
CEE 575	Air Pollution Engr	3
CEE 576	Envir. Engr. Separation Proc.	3

Geotechnical

CEE 520	Adv Geotech Engr	3
CEE 524	Foundation Engr	3

Structural

CEE 500	Adv Struct Analysis	3
CEE 501	Struct. Analysis by Computer	3
CEE 502	Prestressed Concrete	3
CEE 503	Intr-Continuum Mech	3
CEE 504	Structural Dynamics	3
CEE 505	Plastic Design in Steel	3
CEE 507	Masonry Design	3
CEE 508	Design Timber Struc	3

Engineering Mechanics

CEE 511	Exprmntl Stress Anly	3
CEE 533	Theory of Elasticity	3
CEE 534	Theory of Plates and Shells	3
CEE 535	Advanced Mechanical Vibrations	3
CEE 539	Theory of Plasticity	3
CEE 540	Composites Design	3
CEE 541	Exper Mch-Comos Mtls	3
CEE 546	Finite Elmnt Anly I	3

Transportation

CEE 550	Hghwy Geometric Desgn	3
CEE 551	Traffic Engineering	3
CEE 552	Intelligent Transportation Sys	3
CEE 553	Travel Demand Mdng	3
CEE 554	Urban Public Trnsprtn	3

CEE 555	Hgwy Traffic Safety	3
CEE 558	Traffic Engr Rsrch	3

Water Resources

CEE 580	Hydrology & Seepage	3
CEE 582	Adv Hydraulics	3
CEE 584	Open Flow Channel	3

See also Master's Degree Requirements in School of Engineering section in the bulletin and consult with the advisor.

Courses**CEE 500. Adv Struct Analysis. 3 Hours**

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. Prerequisite(s): CEE 317.

CEE 501. Struct. Analysis by Computer. 3 Hours

STRUCTURAL ANALYSIS BY COMPUTER - Review of force and displacement methods. Introduction to direct element and substructure methods. Students write and execute computer programs to analyze plane and space trusses, grids, and frames. Prerequisite(s): CEE 317.

CEE 502. Prestressed Concrete. 3 Hours

PRESTRESSED CONCRETE - Discussion of the properties of concrete and prestressed steel. Theory and design of prestressed concrete beams, slabs, columns, frames, ties, and circular tanks. Prerequisite(s): CEE 412.

CEE 503. Intr-Continuum Mech. 3 Hours

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(s): EGM 303.

CEE 504. Structural Dynamics. 3 Hours

STRUCTURAL DYNAMICS - Response of undamped and damped single and multi-degree-of-freedom structures subjected to harmonic, periodic, and general dynamic loadings. Special topics include nonlinear structural response, response spectra, shear buildings, and simple systems with distributed properties. Prerequisite(s): CEE 317 or permission of instructor.

CEE 505. Plastic Design in Steel. 3 Hours

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(s): CEE 411.

CEE 507. Masonry Design. 3 Hours

MASONRY DESIGN - Properties and performance criteria of bricks, concrete blocks, mortar and grout; codes and construction practices; design of masonry elements. Prerequisite(s): CEE 317.

CEE 508. Design Timber Struc. 3 Hours

DESIGN TIMBER STRUCTURES - Study of basic wood properties and design considerations. Design and behavior of wood connectors, fasteners, beams, columns, and beam columns. Introduction to plywood and glued laminated members. Analysis and design of structural diaphragms and shear walls. Prerequisite(s): CEE 317.

CEE 511. Exprmntl Stress Anly. 3 Hours

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(s): EGM 303.

CEE 515. Pavmt Engineering. 3 Hours

PAVEMENT ENGINEERING - Fundamental principles of flexible and rigid highway and airport pavement design, construction, and management.

CEE 520. Adv Geotech Engr. 3 Hours

ADVANCED GEOTECHNICAL ENGINEERING - Advanced study of Geotechnical engineering principles and study. Stress-strain characteristics; constitutive relationships; failure theories; dynamic soil properties; difficult soils; soil improvement; stability of earth slopes. Prerequisite(s): CEE 312.

CEE 524. Foundation Engr. 3 Hours

FOUNDATION ENGINEERING - Application of Geotechnical engineering principles of analysis and design of shallow and deep foundations and earth retaining structures. Topics include site exploration and characterization, foundation types, bearing capacity, settlement analysis, shallow foundation design, earth pressures theories, design of retaining walls, flexible retaining structures and braced excavations, design of pile foundations and drilled piers. Prerequisite(s): CEE 312.

CEE 533. Theory of Elasticity. 3 Hours

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. Prerequisite(s): EGM 303. Corequisite(s): EGM 503.

CEE 534. Theory of Plates and Shells. 3 Hours

THEORY OF PLATES & 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(s): EGM 533.

CEE 535. Advanced Mechanical Vibrations. 3 Hours

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(s): MEE 319; computer programming.

CEE 539. Theory of Plasticity. 3 Hours

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(s): EGM 503 or EGM 533.

CEE 540. Composites Design. 3 Hours

COMPOSITES DESIGN - Design with fiber reinforced composite materials. Fiber and resin selection, laminate design, bending and torsion of stiffening elements, open and filled holes, joining methods, fatigue, damage tolerance, building block approach, design allowables. Prerequisite(s): EGM 303.

CEE 541. Exper Mch-Comos Mtls. 3 Hours

MECHANICS OF COMPOSITE MATERIALS - Introduction to the mechanical response of fiber-reinforced composite materials with emphasis on the development of experimental methodology. Analytical topics include stress-strain behavior of anisotropic materials, laminate mechanics, and strength analysis. Theoretical models are applied to the analysis of experimental techniques used for characterizing composite materials. Lectures are supplemented by laboratory sessions in which characterization tests are performed on contemporary composite materials. Prerequisite(s): EGM 303.

CEE 543. Analy Mech-Cmp Matls. 3 Hours

ANALYSIS: COMPOSITE MATERIALS - Analysis of composite materials.

CEE 546. Finite Elmnt Anly I. 3 Hours

FINITE ELEMENT ANALYSIS I - Fundamental development of the Finite Element Method (FEM), and solution of field problems and comprehensive structural problems. Variational principles and weak forms; finite element discretization; shape functions; finite elements for field problems; bar, beam, plate, and shell elements; isoparametric finite elements, stiffness, nodal force, and mass matrices; matrix assembly procedures; computer coding techniques; modeling decisions; program output interpretation. Emphasis on a thorough understanding of FEM theory and modeling techniques. Prerequisite(s): CEE 503 or CEE 533.

CEE 550. Hghwy Geometr Design. 3 Hours

HIGHWAY GEOMETRIC DESIGN - Advanced topics in horizontal and vertical alignment design controls and criteria, sight distance, intersection and interchange design. Prerequisite(s): CEE 403.

CEE 551. Traffic Engineering. 3 Hours

TRAFFIC ENGINEERING - Characteristics of traffic, including the road user, vehicle, traffic control devices, accident analysis, signal operations and design and the fundamentals of signal system progression. Prerequisite(s): CEE 403.

CEE 552. Intelligent Transportation Sys. 3 Hours

INTELLIGENT TRANSPORTATION SYSTEMS - Fundamentals of planning, design, deployment and operations of ITS. Integrated application of ITS architecture, traffic flow principles, advanced equipment, communications technologies and management strategies to provide traveler information and increase the safety and efficiency of the surface transportation system. Prerequisite(s): CEE 403.

CEE 553. Travel Demand Mdlng. 3 Hours

TRAVEL DEMAND MODELING - Introduction to the theory, concepts and methods underlying the practice of urban travel demand modeling. The course involves model data inputs, model development, forecasting applications, and model evaluation techniques. Prerequisite(s): CEE 403.

CEE 554. Urban Public Trnsptrn. 3 Hours

URBAN PUBLIC TRANSPORTATION - Planning and analysis of urban public transportation service and operations with a focus on bus and rail modes. Provides fundamental knowledge and methods for route and network planning, service planning and analysis, performance monitoring, operations control, and frequency and headway determination. Prerequisite(s): CEE 403.

CEE 555. Hgwy Traffic Safety. 3 Hours

HIGHWAY TRAFFIC SAFETY - Issues involved in transportation safety, strategic highway safety planning at state and local levels. Extent of the highway safety problem, elements of traffic accidents, common accident countermeasures, collection and analysis of accident data, evaluation of safety-related projects and programs, and litigation issues. Prerequisite(s): CEE 403.

CEE 558. Traffic Engr Rsrch. 3 Hours

TRAFFIC ENGINEERING RESEARCH - Practical problems in control or capacity restraints based on studies of actual local situations. Prerequisite(s): CEE 403.

CEE 560. Bio Proc Wastewatr. 3 Hours

BIOLOGICAL PROCESSES IN WASTEWATER ENGINEERING - Measuring the characteristics of wastewater produced from domestic and industrial sources. Principles of designing and operating microbiological processes for the treatment of wastewater. Mechanisms and kinetics of biological reactions emphasized. Prerequisite(s): CHM 124.

CEE 562. Phy & Chm Wastewatr. 3 Hours

PHYSICAL & CHEMICAL WATER & WASTEWATER TREATMENT PROCESSES - Principles and design of physical and chemical unit processes to treat water and wastewater. Industry pretreatment technologies and the basis for their development. Prerequisite(s): CHM 124 and (CEE 434 or CME 406) or permission of instructor.

CEE 563. Hazardous Waste Engr. 3 Hours

HAZARDOUS WASTE ENGINEERING - The fundamental principles of the design and operation of hazardous waste control and hazardous substances remediation processes. Hazardous waste regulations, risk assessment and management.

CEE 564. Solid Waste Engineering. 3 Hours

SOLID WASTE ENGINEERING - Characterizing solid waste. Managing solid waste collection, transport, minimization, and recycling. The design of solid waste disposal and resource recovery facilities.

CEE 574. Fund. of Air Pollution Engr.. 3 Hours

FUNDAMENTALS OF AIR POLLUTION ENGINEERING I - Air pollution, combustion fundamentals, pollutant formation and control in combustion, pollutant formation and control methods in internal combustion engines, particle formation in combustion. Prerequisite(s): ((CME 311 or MEE 301); (CME 324 or MEE 410)) or permission of instructor.

CEE 575. Air Pollution Engr. 3 Hours

FUNDAMENTALS OF AIR POLLUTION ENGINEERING II - Review of the concepts of air pollution engineering; aerosols; removal of gaseous pollutants from effluent streams; optimal air pollution control strategies. Prerequisite(s): CME 574 or permission of instructor.

CEE 576. Envir. Engr. Separation Proc.. 3 Hours

ENVIRONMENTAL ENGINEERING SEPARATION PROCESSES - Discussion of the unit operations associated with environmental engineering separation processes of solid-liquid, liquid-liquid, and gas-liquid systems; general use, principles of operation, and design procedures for specific types of equipment. Prerequisite(s): Permission of instructor.

CEE 580. Hydrology & Seepage. 3 Hours

HYDROLOGY & SEEPAGE - Detailed study of the hydrologic cycle with a focus on rainfall/runoff generation techniques. Practical application of hydrologic fundamentals is demonstrated through the design of urban storm water systems. Introduction to sub-surface hydrology and groundwater modeling. Prerequisite(s): CEE 312, CEE 333.

CEE 582. Adv Hydraulics. 3 Hours

ADVANCED HYDRAULICS - Detailed examination of unsteady flow in closed-conduits and open channels. Practical methods for solving waterhammer and flood routing problems are presented. Physical modeling integrated with dimensional analysis and similitude is presented. Prerequisite(s): CEE 313, CEE 333.

CEE 584. Open Flow Channel. 3 Hours

OPEN CHANNEL FLOW - Open channel flow in its various forms will be studied. Major topics to be covered include energy and momentum principles, uniform and gradually varied flow, rapidly varied flow, spatially varied flow and an introduction to unsteady flow. Pragmatic applications such as channel design, water surface profile computations, and culvert analysis will also be covered. Well-established solution approaches and widely accepted computer methods will be used to solve real-world problems. Prerequisite(s): CEE 313, CEE 333.

CEE 590. Sel Readings-CEE. 3 Hours

SELECTED READINGS IN CIVIL ENGINEERING - Directed readings in a designated area arranged and approved by the student's faculty advisor and the department chair. May be repeated.

CEE 595. Sel Readings-CEE. 3 Hours

SPECIAL PROBLEMS IN CEE - Special assignments in civil engineering subject matter to be arranged and approved by the student's advisor and the department chair.

CEE 598. Project. 3 Hours

PROJECT - Project in Civil and Environmental Engineering.

CEE 599. Thesis. 3-6 Hours

THESIS - Thesis in Civil and Environmental Engineering.

Electrical and Computer Engineering

Guru Subramanyam, Department Chairperson

Doctorate of Engineering in Electrical Engineering

See the Doctoral Degree Requirements section on the School of Engineering page and consult with the department chair.

Doctorate of Philosophy in Electrical Engineering

See the Doctoral Degree Requirements section on the School of Engineering page and consult with the department chair.

Master of Science in Electrical Engineering

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.

- At least nine semester hours in electrical engineering core courses approved by the advisor/advisory committee, to be selected from:

ECE 501	Contmp Digital Sys	3
ECE 503	Random Processes	3
ECE 506	Microelectronic Dev	3
ECE 507	Electromag Fields I	3
ECE 509	Analy-Linear Systms	3
- At least nine semester hours in a concentration area such as Computing Systems, Sensors and Devices, or Signals and Systems, or as approved by the advisor/advisory committee.
- At least six semester hours of selected technical electives. Selected courses must be approved by the advisor.
- Six semester hours on an approved thesis or six hours of additional electrical engineering coursework. Students receiving 50% assistantship/stipend over one academic year or more will be required to pursue the thesis option.

See also Master's Degree Requirements in School of Engineering section in the bulletin.

Courses

ECE 501. Contmp Digital Sys. 3 Hours

CONTEMPORARY DIGITAL SYSTEMS - Introduction to sequential logic; state machines; high-performance digital systems: theory and application of modern design; alternative implementation forms and introduction to HDL; productivity, recurring and non-recurring costs, flexibility, and testability; software drivers; hardware/software integration; finite state machines. Prerequisite(s): ECE 215 or equivalent.

ECE 503. Random Processes. 3 Hours

RANDOM PROCESSES - Random variables as applied to system theory, communications, signal processing and controls. Topics include advanced engineering probability, random variables, random vectors and an introduction to random processes Prerequisite(s): ECE 340 or equivalent.

ECE 506. Microelectronic Dev. 3 Hours

MICROELECTRONIC DEVICES - Crystalline structure of matter, quantum mechanics and energy band theory; bulk properties of semiconductors; p-n and metal-semiconductor junctions; bipolar junction transistors; field-effect transistors; heterostructures; optical properties of semiconductors; devices, modeling and applications. Prerequisite(s): ECE 304 or permission of instructor.

ECE 507. Electromag Fields I. 3 Hours

ELECTROMAGNETIC FIELDS I - Fundamental concepts, wave equation and its solutions; wave propagation, reflection and transmission; potential theory; construction of modal solutions; various electromagnetic theorems: concept of source, uniqueness, equivalence, induction and reciprocity theorems. Prerequisite(s): ECE 333 or equivalent.

ECE 509. Analy-Linear Systms. 3 Hours

ANALYSIS OF LINEAR SYSTEMS - State variable representation of linear systems and its relationship to the frequency domain representation using transfer functions and the Laplace transform. State transition matrix and solution of the state equation, stability, controllability, observability, state feedback and state observers are studied.

ECE 510. MicrowvCircuitsforComm. 3 Hours

MICROWAVE CIRCUITS FOR COMMUNICATIONS - Microwave transmission, planar transmission lines, microwave components and filters. Microwave tubes, microwave communication, radar systems, and electronic support measures. Prerequisite(s): ECE 507.

ECE 511. Antennas. 3 Hours

ANTENNAS - Fundamental principles of antennas; analysis and synthesis of arrays; resonant antennas; broadband and frequency independent antennas; aperture and reflector antennas; applications to radar and communication systems. Prerequisite(s): ECE 507 or equivalent.

ECE 515. Magn Mtls&their Funct. 3 Hours

ENGINEERING MAGNETIC MATERIALS & THEIR FUNCTION IN GREEN ENERGY - Magnetic fundamentals including spontaneous magnetization; advanced magnetic materials, computer modeling of magnetic circuits using 2D/3D finite element analysis. Applications of magnetic materials in electric machines. Prerequisite(s): MAT 501; college physics or permission of instructor.

ECE 518. Electromag Fields II. 3 Hours

ELECTROMAGNETIC FIELDS II - Classification and construction of solutions. Plane cylindrical and spherical wave functions. Integral equations, mathematical theory of diffraction. Green's function. Prerequisite(s): ECE 507.

ECE 521. Digital Communctn I. 3 Hours

DIGITAL COMMUNICATIONS I - Fundamental limits on performance; Shannon's theorem; prefix codes; Huffman codes; signal vectors; orthonormal basis functions; signal detection and estimation; Wiener and adaptive filters; matched filters; sampling theory and process; waveform coding techniques; baseband shaping concepts. Prerequisite(s): ECE 503.

ECE 522. Digtl Communctn II. 3 Hours

DIGITAL COMMUNICATIONS II - Waveform coding techniques, including binary and M-ary PAM, DPCM, DM, ADM; baseband shaping concepts, including binary and M-ary PAM, ISI; digital modulation techniques, including ASK, PSK, FSK, QPSK, CPFSK, MSK, DPSK, M-ary PSK; error-control, including Block codes, cyclic codes; spread-spectrum modulation concepts. Prerequisite(s): ECE 521.

ECE 523. Satellite Communctns. 3 Hours

SATELLITE COMMUNICATIONS - Topics related to the theory, design and orbital placement of geostationary and geosynchronous satellites and their communications applications, including transmitters and receivers in the RF, microwave and optical operational windows, the associated modulation and communication strategies, system hardware and international satellite networks. Prerequisite(s): ECE 507 or permission of instructor.

ECE 531. Microelectronic Sys. 3 Hours

MICROELECTRONICS SYSTEMS - Introduction to the design and application of engineering micro-electronics; bipolar and MOS device theory and processing technology; CMOS logic and circuitry; design principles fundamental to chip design and fabrication; case studies employing introduction to HDL. Prerequisite(s): ECE 304.

ECE 532. Embedded Systems. 3 Hours

EMBEDDED SYSTEMS - This course will introduce the student to the concept of embedded systems and the constraints imposed on hard real-time systems. Course will consist of design, development and test of selected hard-deadline hardware and software using Altera's DE2 development boards. The student will design selected hardware interfaces and develop real-time executive and application code in assembly language and C. Each student will design and implement hardware using Verilog HDL. Prerequisite(s): ECE 501 or equivalent.

ECE 533. Computer Design. 3 Hours

COMPUTER DESIGN - Design considerations of the computer; register transfer operations; hardware implementation of arithmetic processors and ALU; instruction set format and design and its effect on the internal microengine; hardware and micro-programmed control design; comparative architectures. Prerequisite(s): ECE 501 or equivalent.

ECE 536. Microprocessr Appl. 3 Hours

MICROPROCESSOR APPLICATIONS - Project studies, applications of microprocessors in practical implementations; logic implementation using software; memory mapped I/O problems and interrupt structure implementation; use of compilers; study of alternate microprocessor families including industrial controllers. Prerequisite(s): ECE 314 or equivalent; ECE 501.

ECE 538. Object Orient Prg App. 3 Hours

OBJECT-ORIENTED PROGRAMMING APPLICATIONS A - semi-formal approach to the engineering applications of object-oriented programming. Application of the concepts of classes, inheritance, polymorphism in engineering problems. Introduction to the use of class libraries. Effective integration of the concepts of application programmer interfaces, language features and class libraries. Prerequisite(s): C-programming experience.

ECE 545. Automatic Control. 3 Hours

AUTOMATIC CONTROL - Study of mathematical methods for control systems and analysis of performance characteristics and stability. Design topics include pole-placement, root locus, and frequency domain techniques. The student will also learn feedback loop sensitivity, basic loopshaping, performance bounds and other introductory aspects of robust control. Prerequisite(s): ECE 509 or permission of instructor.

ECE 547. Non-Linear Sys&Cntrl. 3 Hours

NON-LINEAR SYSTEMS & CONTROL - Introduction to nonlinear phenomena in dynamical systems. A study of the major techniques of nonlinear system analysis including phase plane analysis and Lyapunov stability theory. Application of the analytical techniques to control system design including feedback linearization, backstepping and sliding mode control. Prerequisite(s): ECE 509 or permission of instructor.

ECE 561. Digtl Signal Proc. 3 Hours

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 filter design and analysis, and fast Fourier transform processing techniques. Prerequisite(s): ECE 334 or equivalent.

ECE 563. Image Processing. 3 Hours

IMAGE PROCESSING - An introduction to image processing including the human visual system, image formats, two-dimensional transforms, image restoration, and image reconstruction. Prerequisite(s): ECE 561.

ECE 564. 3D Computer Vision. 3 Hours

3D COMPUTER VISION - Develop the skills needed to generate synthetic images of 3D objects and to recover 3D structure from one or more views (projections) of 3D objects. Feature recognition in 2D views (images) of a scene based either on actual photographs or synthetic images (computer graphics generated). Applications in robot pose recognition and mobile robot navigation. Prerequisite(s): Ideally students should be familiar with C++ object-oriented programming (ECE 538), MATLAB, and image processing (ECE 563). However, accommodations will be made for students with experience in only one of these areas.

ECE 567. Mach Lrn-Patrn Class. 3 Hours

MACHINE LEARNING AND PATTERNING - This course introduces the fundamental concepts and models of machine learning with a practical treatment of design, analysis, implementation and applications of algorithms that learn from examples. Topics include supervised and unsupervised learning, self organization, pattern association, feed-forward and recurrent architectures, manifold learning, dimensionality reduction, and model selection. Prerequisite(s): ECE 445 or permission of instructor.

ECE 572. Lin Sys&Fourier Opt. 3 Hours

LINEAR SYSTEMS & FOURIER OPTICS - Mathematical techniques pertaining to linear systems theory; Fresnel and Fraunhofer diffraction; Fourier transform properties of lenses; frequency analysis of optical systems, spatial filtering, applications such as optical information processing and holography. Prerequisite(s): Acceptance into the ECE graduate program or permission of the department chairperson.

ECE 573. Electro-Optcl Dev&Sys. 3 Hours

ELECTRO-OPTICAL DEVICES & SYSTEMS - Solid-state theory of optoelectronic devices; photoemitters; photodetectors; solar cells; detection and noise; displays; electro-optic, magneto-optic, and acousto-optic modulators; integration and application of electro-optical components in electro-optical systems of various types. Prerequisite(s): ECE 507 or permission of department chairperson.

ECE 574. Guided Wave Optics. 3 Hours

GUIDED WAVE OPTICS - Light propagation in slab and cylindrical waveguides; signal degradation in optical fibers; optical sources, detectors, and receivers; coupling; transmission link analysis; fiber fabrication; fiber sensor and communication systems. Prerequisite(s): ECE 507 or permission of department chairperson.

ECE 577L. Electro-Optics Lab. 1 Hour

ELECTRO-OPTICS LABORATORY - Fiber optic principles and systems: numerical aperture, loss, dispersion, single and multimode fibers, communications and sensing systems; project oriented investigations of Electro/fiber-optic systems and devices in general, sources, detectors, image processing, sensor instrumentation and integration, Electro-optic components, display technology, and nonlinear optical devices and systems. Prerequisite(s): ECE 574 or permission of department chairperson.

ECE 581. Nanoelctronics. 3 Hours

NANOELECTRONICS - Introduction to the physics of materials on the nanoscale; quantum confinement theory; electronic and optical properties of semiconductor nanostructures; single electron transistors (SETs); tunneling and ballistic devices; nanostructured LEDs, photodetectors, and lasers; nanophotovoltaics and nanomagnetism; quantum computing and molecular electronics; nanoelectronic fabrication, state-of-the-art and emerging nanoscale devices and applications. Prerequisite(s): ECE 506 or permission of instructor.

ECE 583. Adv Photovoltaics. 3 Hours

ADVANCED PHOTOVOLTAICS - This theoretical course will cover science and applications of photovoltaics, with special emphasis on inorganic and organic semiconductors, ferroelectrics, chalcopyrites, metamaterials, and quantum structures. Prerequisite(s): ECE 506 or permission of instructor.

ECE 595. Sat Comm Tech. 2-6 Hours

SPECIAL PROBLEMS IN ELECTRICAL ENGINEERING - Particular assignments to be arranged and approved by the department chair.

ECE 597. Research Methods. 3 Hours

RESEARCH METHODS - This course will provide students the ability to apply research methods and problem solving skills to identify and define a research problem, develop hypotheses and research plans to test those hypotheses. Students will write and present an original research proposal.

ECE 599. Thesis. 1-6 Hours

THESIS - Thesis in Electrical and Computer Engineering.

ECE 636. Adv Comptr Architec. 3 Hours

ADVANCED COMPUTER ARCHITECTURE - Examination of modern high performance computing architectures, including out-of-order execution RISC multicore processors and GPGPUs. Design projects integrate the concepts learned in class. Prerequisite (s): ECE 533.

ECE 637. Concurrent Proc. 3 Hours

CONCURRENT PROCESSING - Introduction to the concepts and practices of parallel processing and concurrency. Multiprogramming and multitasking. Synchronous and asynchronous events. Critical sections, mutexes and semaphores. Use of shared memory in engineering applications. Atomicity on CISC and RISC machines. Applications of interval timers. Case studies in engineering applications. Prerequisite(s): ECE 537, ECE 636, or equivalent.

ECE 642. Optimal Cntrl&Estmnt. 3 Hours

OPTIMAL CONTROL AND ESTIMATION - Optimal control of discrete-time systems. Cost-equivalent control of continuous-time systems. Optimal estimation. Prerequisite(s): ECE 509.

ECE 645. Adaptive Control. 3 Hours

ADAPTIVE CONTROL - On-line approximation based adaptive control techniques for nonlinear systems. An introduction to neural networks and fuzzy systems as part of the control loop is given, leading to a diversity of advanced methods for controlling and stabilizing nonlinear systems subject to uncertainties. Adaptive observers and adaptive output feedback are also introduced. Prerequisite(s): ECE 547 or permission of instructor.

ECE 661. Statistcl Sign Proc. 3 Hours

STATISTICAL SIGNAL PROCESSING - This course studies discrete methods of linear estimation theory. Topics include random vectors, linear transformations, linear estimation theory, optimal filtering, least squares techniques, linear prediction, and spectrum estimation. Prerequisite(s): ECE 503, ECE 561.

ECE 662. Adap Signal Proc. 3 Hours

ADAPTIVE SIGNAL PROCESSING - An overview of the theory, design, and implementation of adaptive signal processors. This includes discussions of various gradient search techniques, filter structures, and applications. An introduction to neural networks is also included. Prerequisite(s): ECE 661.

ECE 663. Stat Pattern Recg. 3 Hours

STATISTICAL PATTERN RECOGNITION - This course provides a comprehensive treatment of the statistical pattern recognition problem. The mathematical models describing these problems and the mathematical tools necessary for solving them are covered in detail. Prerequisite(s): ECE 661.

ECE 674. Integrated Optics. 3 Hours

INTEGRATED OPTICS - Asymmetric dielectric slab wave- guides; cylindrical dielectric wave-guides; multi-layer waveguides; dispersion, shifting and flattening; mode coupling and loss mechanisms; selected nonlinear waveguiding effects; integrated optical devices. Prerequisite(s): ECE 574.

ECE 676. Quantum Electronics. 3 Hours

QUANTUM ELECTRONICS - Principles of the quantum theory of electron and photon processes; interaction of electromagnetic radiation and matter; applications to solid state and semiconductor laser systems. Prerequisite(s): ECE 506, ECE 573, EOP 506, or equivalent.

ECE 682. Nano-Fabrication Lab. 3 Hours

NANO-FABRICATION LABORATORY - This laboratory course will provide hands-on experience in state-of-the-art device fabrication technology. The course will be conducted primarily in a clean room laboratory with some classroom sessions for discussions. The students will have an opportunity to design, fabricate and test their own devices. Prerequisite(s): Permission of instructor.

ECE 690. Sel Readings-ECE. 1-3 Hours

SELECTED READINGS IN ELECTRICAL ENGINEERING - Directed readings in electrical engineering areas to be arranged and approved by the chair of the student's doctoral advisory committee and the department chair.

ECE 695. Special Prob-ECE. 1-3 Hours

SPECIAL PROBLEMS IN ELECTRICAL ENGINEERING - Special topics in electrical engineering not covered in regular courses. Course sections arranged and approved by the chair of the student's doctoral advisory committee and the department chair.

ECE 699. PhD Dissertation. 1-15 Hours

PHD DISSERTATION - Original research in electrical engineering that makes a definite contribution to technical knowledge. Results must be of sufficient importance to merit publication.

Electro-Optics

- Doctorate of Philosophy in Electro-Optics
- Master of Science in Electro-Optics

Partha Banerjee, Program Director

The interdisciplinary programs of study leading to the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) in electro-optics are administered by the School of Engineering with the cooperative support of the College of Arts and Sciences.

Doctorate of Philosophy in Electro-Optics

The minimum semester-hour requirement for the doctoral degree is 90 semester hours beyond the bachelor's degree (which must include the EO core or its equivalent), or 60 semester hours beyond the EO M.S. degree or equivalent. This includes the credit for the doctoral dissertation. Doctoral candidates are required to register for two semester hours of dissertation during the semester in which the dissertation is defended.

The Plan of Study of a student seeking the Ph.D. in Electro-Optics must successfully complete a minimum of 90 semester hours beyond the bachelor's degree which must include the following:

1. Core courses as given in the EO Master's program or equivalent
2. Twelve semester hours of approved 600-level Electro-Optics courses.
3. Six semester hours of approved graduate mathematics courses.
4. Twelve semester hours of Technical Electives.
4. Thirty semester hours of Ph.D. dissertation credits in Electro-Optics.

See also the Doctoral Degree Requirements in School of Engineering section in the bulletin and consult with the director of the electro-optics program.

Master of Science in Electro-Optics

The individual Plan of Study will include the specific courses and all other requirements of the M.S. EO degree the student is expected to complete. The Plan of Study must be filed with the School of Engineering Office of Graduate Studies prior to registration for the tenth graduate credit hour or before registration for the third semester. The Plan of Study and any amendments thereto must be approved by the advisor, the Program Director, and the Associate Dean of the School of Engineering Office of Graduate Studies.

EOP 501	Geometric Optics	3
EOP 502	Opticl Radtn&Matter	3
EOP 505	Introductn-Lasers	3
EOP 506	Electro-Optc Dev&Sys	3
EOP 513	Lin Sys&Fourier Opt	3
EOP 514	Guided-Wave Optics	3

EOP 541L	Geom & Phys Opt Lab	1
EOP 542L	EO Systems Lab	1
EOP 543L	Adv EO Lab	1
Technical Elective		3
Thesis Option: Six semester hours of EO thesis credits; No-Thesis Option: Six additional credits of Technical Electives in EOP or ECE		6
Total Hours		30

See also Master's Degree Requirements in School of Engineering section in the bulletin and consult with the director of the electro-optics program.

Courses

EOP 501. Geometric Optics. 3 Hours

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. Prerequisite(s): Acceptance into the graduate EO program or permission of program director.

EOP 502. Opticl Radtn&Matter. 3 Hours

OPTICAL RADIATION & 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. Prerequisite(s): Acceptance into the graduate EO program or permission of program director.

EOP 505. Introductn-Lasers. 3 Hours

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. Prerequisite(s): (EOP 502 or a working knowledge of Maxwell's Equations; physical optics) or permission of instructor or program director.

EOP 506. Electro-Optc Dev&Sys. 3 Hours

ELECTRO-OPTICAL DEVICES & SYSTEMS - Solid state theory of optoelectronic devices; photoemitters; photodetectors; solar cells; detection and noise; displays; electro-optic, magneto-optic, and acousto-optic modulators; integration and application of electro-optical components in electro-optical systems of various types. Prerequisite(s): EOP 502 or permission of instructor.

EOP 513. Lin Sys&Fourier Opt. 3 Hours

LINEAR SYSTEMS & FOURIER OPTICS - Mathematical techniques pertaining to linear systems theory; Fresnel and Fraunhofer diffraction; Fourier transform properties of lenses; frequency analysis of optical systems, spatial filtering, application such as optical information processing and holography. Prerequisite(s): Acceptance into the graduate EO program or permission of program director.

EOP 514. Guided-Wave Optics. 3 Hours

GUIDED-WAVE OPTICS - Light propagation in slab and cylindrical wave guides; signal degradation in optical fibers; optical sources, detectors, and receivers; coupling; transmission link analysis; fiber fabrication and cabling; fiber sensor system. Prerequisite(s): EOP 502 or permission of program director.

EOP 541L. Geom & Phys Opt Lab. 1 Hour

GEOMETRIC & PHYSICAL OPTICS LABORATORY - Geometric optics; characterization of optical elements; diffraction; interference; birefringence and polarization. Prerequisite(s): EOP 501 or permission of program director.

EOP 542L. EO Systems Lab. 1 Hour

ELECTRO-OPTIC SYSTEM LABORATORY - Fiber optic principles and systems: numerical aperture, loss, dispersion, single and multimode fibers, communications and sensing systems. Project oriented investigations of electro-fiber-optic systems and devices in general: sources, detectors, image processing, sensor instrumentation and integration, electro-optic component, display technology, nonlinear optical devices and systems. Prerequisite(s): EOP 514 or permission of program director.

EOP 543L. Adv EO Lab. 1 Hour

ADVANCED ELECTRO-OPTICS LABORATORY - Project-oriented investigations of laser characterization, interferometry, holography, optical pattern recognition and spectroscopy. Emphasis is on the applications of optics, electronics, and computer data acquisition and analysis to measurement problems. Prerequisite(s): EOP 541L or permission of program director.

EOP 595. Special Problems. 1-6 Hours

SPECIAL PROBLEMS - Special problems in Electro-Optics.

EOP 599. Thesis. 1-6 Hours

THESIS - Thesis in Electro-Optics.

EOP 601. Optical Design. 3 Hours

OPTICAL DESIGN - Chromatic aberrations: doublet lens; telephoto, wide-angle, and normal lenses; triplet lens design and variations; optimization methods and computer lens design; optical transfer functions; telescopes and microscopes; two-mirror telescope design: aspheric surfaces; prism and folded optical systems, rangefinders; gratings and holographic optical elements; anamorphic optical systems; zoom systems. Prerequisite(s): EOP 501.

EOP 603. Interferometry. 3 Hours

INTERFEROMETRY - Interferometry.

EOP 604. Integrated Optics. 3 Hours

INTEGRATED OPTICS - Review of electromagnetic principles; dielectric slab waveguides; cylindrical dielectric waveguides; dispersion, shifting and flattening; mode coupling and loss mechanism; selected nonlinear waveguiding effects; integrated optical devices. Prerequisite(s): EOP 514.

EOP 621. Statistcl Optics. 3 Hours

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. Prerequisite(s): Completion of the core courses of the graduate electro-optics program or permission of program director.

EOP 624. Nonlinear Optics. 3 Hours

NONLINEAR OPTICS - Introduction and overview nonlinear optical interactions, classical and harmonic oscillator model, symmetry properties of nonlinear susceptibility tensor, coupled-mode formalism, sum- and difference-frequency generation, parametric oscillators, four-wave mixing, phase conjugation, optical solitons, stimulated Brillouin and Raman scattering, photorefractive effect, and resonant nonlinearities. Prerequisite(s): EOP 502 or equivalent.

EOP 626. Quantum Electronics. 3 Hours

QUANTUM ELECTRONICS - Principles of the quantum theory of electron and photon processes; interaction of electromagnetic radiation and matter; applications to solid state and semiconductor laser systems. Prerequisite(s): (ELE 506 or ELE 573 or EOP 506) or equivalent.

EOP 631. Nanophotonics. 3 Hours

NANOPHOTONICS - The fundamentals of nanoscale light-matter interactions, basic linear and nonlinear optical properties of photonic crystals and metals; nanoscale effects in photonic devices; computational and modeling techniques used in nanophotonics; nanofabrication and design tools; nanoscale optical imaging; principles of nanocharacterization tools. Prerequisite(s): EOP 501, EOP 502, knowledge of electromagnetism and radiation-matter interactions or permission from instructor.

EOP 632. Nano-Fabricatns Lab. 3 Hours

NANO-FABRICATION LABORATORY - This laboratory course will provide hands-on experience in state-of-the-art device fabrication technology. The course will be conducted primarily in a clean room laboratory with some classroom sessions for discussions. The students will have an opportunity to design, fabricate and test their own devices. Prerequisite(s): Permission of instructor.

EOP 655. Optical Communicatns. 3 Hours

OPTICAL COMMUNICATIONS - Optical communications.

EOP 656. Free Space Opticl com. 3 Hours

FREE SPACE OPTICAL COMMUNICATIONS - Laser beam propagation, random processes, wave propagation in turbulence, turbulence spectra, structure function, coherence length, anisoplanatism, Strehl ratio, scintillation index, long-time and short-time spot size, and beam wander, bit-error rates, adaptive optics corrections, performance analysis. Prerequisite(s): EOP 513, EOP 502, or knowledge of electromagnetism and radiation-matter interactions or permission from instructor.

EOP 665. Polarizatn of Light. 3 Hours

POLARIZATION OF LIGHT: FUNDAMENTALS & APPLICATIONS - The fundamentals and applications of the polarization properties of light; description of state of polarization; propagation of state of polarization; polarization devices; polarization in guided waves; polarization in multilayer thin films; ellipsometry and polarimetry; birefringent filters; spatially variant polarization; polarization in subwavelength structures. Prerequisite(s): EOP 502; basic knowledge of electromagnetism and linear algebra or permission of instructor.

EOP 690. SR:Electro-Optics. 1-3 Hours

SELECTED READINGS IN ELECTRO-OPTICS - Directed readings in electro-optics areas to be arranged and approved by the chair of the student's advisory committee and the program director.

EOP 695. SP:Electro-Optics. 1-3 Hours

SPECIAL PROBLEMS IN ELECTRO-OPTICS - Special topics in electro-optics not covered in regular courses. Course sections arranged and approved by the chair of the student's advisory committee and program director.

EOP 699. Dissertation. 1-15 Hours

PHD DISSERTATION - Original research in electro-optics which makes a definite contribution to technical knowledge. Results must be of sufficient importance to merit publication.

Engineering

Tony E. Saliba, Dean

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.

Master of Science in Engineering

The program of study leading to the Master of Science in engineering must include a minimum of 33 semester hours of the following:

Fifteen semester hours in a major area	15
Fifteen semester hours of electives	15
Three semester hours of research on an approved project	3
Total Hours	33

Sample Program

MS Engineering with concentration in Human Factors Engineering

ENM 515	Human Factors Engr	3
ENM 532	Cognitive Sys Engr	3
MSC 573	Simulatn/Human Perf	3
PSY 531	Hum Factrs-Sys Devlp	3
PSY 533	Engr Psychology	3
PSY 535	Ergonomics	3
Six semester hours in statistics and experimental design		6
A thesis and non-thesis option are available. Students choosing the thesis option will complete six semester hours of thesis and 6 semester hours of electives. Students choosing the non-thesis option will complete nine semester hours of electives and a three semester hour capstone project.		12
Total Hours		36

See also Master's Degree Requirements in School of Engineering section in the bulletin and consult with the director of the Master of Science in engineering program.

Courses

EGR 590. Selected Readings. 1-6 Hours

SELECTED READINGS - Directed readings on an interdisciplinary engineering topic approved by the student's academic advisor and the department chair. May be repeated. Possible topics include: (a) Research Ethics, (b) Engineering Innovation, (c) Entrepreneurship, or (d) Multidisciplinary Design. Prerequisite(s): Variable.

Engineering Management

- Master of Science in Engineering Management
- Certificate in Six Sigma
- Certificate in Systems Engineering
- Certificate in Human Factors Engineering
- Certificate in Design of Experiments

Patrick J. Sweeney, Interim Department Chairperson

The program of study leading to the Master of Science in Engineering Management is designed to prepare engineers and aspiring engineers for leadership roles in engineering activities in industry, government, business, and the military. Graduates should be able to model, analyze, and make the difficult decisions required of engineering leaders, after learning course methodologies in statistics, operations research and simulation, and practicing these methodologies by using data and current analytical tools to solve real-world problems. Check us out at: <http://engineering.udayton.edu/programs/management>

Most courses are simulcast (offered in the classroom at the same time as they are offered via distance learning over the Internet at 11:30 a.m., 4:30 p.m., and 6:00 p.m.). These classes meet twice per week, typically Monday and Wednesday or Tuesday and Thursday. Nearly every course is live in the classroom, live on the Internet, and recorded for future reference for the students.

In 2012, U.S. News & World Report ranked our department second in the nation in faculty credentials and training, 26th in student services and technology, and 35th in student engagement and accreditation.

Master of Science in Engineering Management

The program includes a minimum of 36 semester hours consisting of the following:

Core Courses

ENM 500	Prob&Stat for Engrs	3
ENM 505	Mgt of Engr Systems	3
MSC 521	Intro to OPS Rsrch	3
ENM 530	Engineering Economy	3
MSC 572	System Simulation	3
or MSC 555	System Dynamics I	3
ENM 582	Engr Organizatnl Dev	3
ENM 590	Case Stds-Engr Mgt	3

Group I Management-focused ENM Electives

Select one of the following:		3
ENM 515	Human Factors Engr	
ENM 517	Legal Aspects-Engr	
ENM 532	Cognitive Sys Engr	

ENM 539	Sys Engr/Prijet Mgmt	
ENM 585	Engr Orgnztnl Sys	
ENM 587	Leading in Tech Envr	
PSY 531	Hum Factrs-Sys Devlp	
PSY 533	Engr Psychology	
PSY 535	Ergonomics	

Group II Application-focused ENM Electives

Select two of the following:		6
ENM 534	Decision Making	
ENM 541	Productn Engineering	
ENM 560	Quality Assurance	
ENM 561	Dsgn & Analy Expr	
ENM 562	Robust Engr	
ENM 565	Reliability Engr I	
MSC 555	System Dynamics I ¹	
or MSC 572	System Simulation	

Electives

Indicate two of the following courses or choose from ENM Group I or Group II Electives or from other fields of engineering.

ENM 503	Engr Analyses	
ENM 566	Reliability Engr II	
ENM 562	Robust Engr	
ENM 595	SP: Engr Mgt	

Total Hours 36

¹ Whichever is not taken as core.

See Master's Degree Requirements in the School of Engineering Bulletin, in the General Information section, and consult with the program director. When applying for the ENM degree, please note that the Department of Engineering Management & Systems does not require the three letters of recommendation, a personal statement or resume, or GRE results as required by many other University of Dayton departments and programs.

The supporting classes and electives within the engineering program of study allows concentrations in areas such as six sigma quality, manufacturing, artificial intelligence, reliability engineering, operations research, human factors and systems engineering, and simulation.

Certificates

Programs of study leading to four graduate-level certificates are also available.

Certificate in Six Sigma

The Certificate in Six Sigma is designed to offer practicing engineers and other technically-educated professionals the opportunity to master Six Sigma concepts by studying their theoretical roots and conceptual foundations through coursework at the graduate level. Upon successful completion, students are expected to be able to demonstrate an in-depth understanding of the statistical concepts underlying the methods & tools of Six Sigma, correctly apply those methods & tools, correctly analyze and interpret the results, and pursue further research or coursework in the area.

The certificate program is comprised of the following four courses:

ENM 500	Prob&Stat for Engrs	3
ENM 560	Quality Assurance	3
ENM 561	Dsgn & Analy Expr	3

ENM 565	Reliability Engr I	3
Total Hours		12

Certificate in Systems Engineering

Systems engineering is an interdisciplinary approach and means to enable the realization of successful systems. It focuses on defining customer needs and required functionality early in the development cycle, documenting requirements, and then proceeding with design synthesis and system validation while considering the system as a whole.

The certificate program is comprised of the following four courses:

ENM 505	Mgt of Engr Systms	3
ENM 530	Engineering Economy	3
ENM 539	Sys Engr/Prjct Mgmt	3
ENM 582	Engr Organizatnl Dev	3
Total Hours		12

Certificate in Human Factors Engineering

This certificate is designed for individuals currently in or pursuing technical leadership positions in human factors and engineering involving the design and development of complex programs, processes, or products. It requires the successful completion of the six courses specified below. The certificate integrates traditional psychological coursework related to human performance with the systems and modeling emphasis of engineering.

The certificate program is comprised of the following six courses:

ENM 515	Human Factors Engr	3
ENM 532	Cognitive Sys Engr	3
MSC 572	System Simulation	3
PSY 531	Hum Factrs-Sys Devlp	3
PSY 533	Engr Psychology	3
PSY 535	Ergonomics	3
Total Hours		18

Certificate in design of Experiments

This certificate is offered to those technical professionals in the engineering and scientific community to furnish them with efficient techniques to solve challenging problems in key processes and product quality experimentation and design.

The certificate program is comprised of the following three courses:

ENM 500	Prob&Stat for Engrs	3
ENM 561	Dsgn & Analy Expr	3
ENM 590	Case Stds-Engr Mgt (This case study must apply the concepts in the Design of Experiments certificate under the direction of a faculty advisor.)	3
Total Hours		9

Courses

ENM 500. Prob&Stat for Engrs. 3 Hours

PROBABILITY & STATISTICS FOR ENGINEERS - This is an introductory course in the concepts and applications of probability and statistics. Emphasis is on applications and examples that an engineer or analyst would encounter in practice. Probability is presented as the fundamental tool for modeling uncertainty as well as the logical connection between a population of data and its samples. Descriptive statistics are introduced to describe and characterize data. Inferential statistics provide the means of generalizing to a population from a sample, thus enabling solutions and conclusions that otherwise would not be obtained. Modern software provides the leverage to tackle problems of realistic size and complexity. The concepts and methods covered have direct application to forecasting, queuing, inventory, production, scheduling, equipment replacement, reliability, availability, quality control, experimental design, robust engineering, six sigma, and more. Prerequisite(s): An undergraduate course sequence in calculus.

ENM 501. Appl Engr Statistics. 3 Hours

APPLIED ENGINEERING STATISTICS - Concepts and applications of advanced probability modeling and statistical techniques used in the study and solution of operations research/management science problems. The focus of this course is on the application of probability and statistics in the formulation and solution of models found in OR studies and in engineering design studies. This course builds upon the foundation established in the ENM 500 course. Prerequisite(s): ENM 500 or equivalent.

ENM 503. Engr Analyses. 3 Hours

ENGINEERING ANALYSES - METHODS & MODELS - Mathematical methods and models used in the study and solution of decision problems found in engineering and operations research/management science. The methods and models presented build on the student's mathematical foundation and are motivated by their use in solving real-world problems. This is not a concept-theory course but rather a course designed to enhance the modeling and analysis skills of the student. Prerequisite(s): An undergraduate course sequence in calculus.

ENM 505. Mgt of Engr Systms. 3 Hours

MANAGEMENT OF ENGINEERING SYSTEMS - This course addresses customer, systems, and operational requirements with allocation to the component level, using the iterative process of analysis, evaluation and synthesis with life-cycles for systems, product, process and disposal. Decision-making for alternatives is covered with the 'ilities' under risk and uncertainty. Optimization topics and the time value of money are included.

ENM 515. Human Factors Engr. 3 Hours

HUMAN FACTORS ENGINEERING - Treatment of theory, data, and methods that can be applied to improve the interface between humans and the systems and products that they use. Human capabilities and limitations are studied to support the design of systems and products for safe and efficient use by the human operator.

ENM 517. Legal Aspects-Engr. 3 Hours

LEGAL ASPECTS OF ENGINEERING - An introductory course to provide the engineer with some insight into the areas of law that will impact an engineer's professional practice. Special emphasis is given to the area of Contract Law due to the important and pervasive interaction that it has with engineering design and project work. Systems of law, legal reasoning, and the court systems are introduced. Product liability and business relationships are discussed. Classroom experience is achieved through interaction with the UD Law School and local judges with participation in mock trials.

ENM 530. Engineering Economy. 3 Hours

ENGINEERING ECONOMY - This is an introductory course in the concept of time value of money and financial management for engineering managers. The course includes learning curves, cost estimating, managerial accounting, balance sheet and income statement, financial ratios, investment alternatives, depreciation, inflation, capital budgeting and other related topics.

ENM 532. Cognitive Sys Engr. 3 Hours

COGNITIVE SYSTEMS ENGINEERING - Cognitive systems engineering (CSE) is an approach to the engineering of systems with humans and amplifies and makes human capability more reliable to perform cognitive work by integrating technical functions of subsystems with the human cognitive processes that they need to support. Cognitive work involves the cognitive activities of knowing, understanding, planning, deciding, problem solving, integrating, analyzing, synthesizing, assessing and judging, as performed in military command and control, civil air traffic control, transportation, and health care. Prerequisite(s): Graduate status.

ENM 534. Decision Making. 3 Hours

DECISION MAKING - Introduction to rational decision-making with applications in the analysis and design of engineering and management systems. Topics explored are decision-making under uncertainty and risk as well as under certainty, group decision-making, multiple-criteria decision-making, naturalistic and practical decision making. Prerequisite(s): ENM 500 or equivalent.

ENM 539. Sys Engr/Prjct Mgmt. 3 Hours

SYSTEM ENGINEERING/PROJECT MANAGEMENT - This course addresses the concepts, techniques and procedures used to manage engineering programs and projects. This course provides a complete overview of the systems engineering and project management tools and methodologies used to plan, control and execute programs or projects. Included are SE requirements, SE architecture, SE integration, project screening and selection; multiple-criteria methods for evaluation; work breakdown structures (WBS) and organization; configuration selection, management and control; project scheduling; project budgets; resource management; research and development projects; and computer support for project management.

ENM 541. Productn Engineering. 3 Hours

PRODUCTION ENGINEERING - Study of the integration of man, machine, and material in producing a marketable product. The use of engineering techniques to design, develop, and implement the production system are covered. Topics include break-even analysis, learning curve theory, forecasting, resource balancing, inventory and production control, facility layout and location, job sequencing and scheduling, and assembly line balancing. Modern production techniques such as just-in-time (JIT), MRP systems flexible manufacturing, and computer-integrated manufacturing are discussed. Prerequisite(s): MSC 521 or permission of instructor.

ENM 560. Quality Assurance. 3 Hours

QUALITY ASSURANCE - Introduction to the fundamental concepts and methods of modern approaches to quality assurance, with emphasis on statistical methods for process control, process capability analysis, and sampling inspection. The course introduces relevant methods of experimental design and current issues in quality improvement. Prerequisite(s): ENM 500 or equivalent.

ENM 561. Dsgn & Analy Expr. 3 Hours

DESIGN & ANALYSIS OF EXPERIMENTS - This course introduces advanced topics in experimental design and analysis, including full and fractional factorial designs, response surface analysis, multiple and partial regression, and correlation. Prerequisite(s): ENM 500 or equivalent.

ENM 562. Robust Engr. 3 Hours

ROBUST ENGINEERING - Robust engineering methods lead to products and processes that function well in spite of variable customer environments and usage patterns, internal deterioration and ageing of components, and unit-to-unit variation in subassemblies. The key concept is using experimental design to neutralize these sources of performance variability. This course presents the still vital Taguchi methods that pioneered the methodology as well as modern work to improve on and expand Taguchi's principals. Prerequisite(s): ENM 500 or equivalent.

ENM 565. Reliability Engr I. 3 Hours

RELIABILITY ENGINEERING I - An introduction to reliability engineering concepts and methodology. The reliability, maintainability, and availability of components and multi-component systems are analyzed. Topics include exponential, Weibull, lognormal and normal failure laws, static reliability, hazard rate functions, state dependent failure rate models, redundancy, censoring, empirical models, curve fitting to failure data, and reliability growth testing. Prerequisite(s): ENM 500 or equivalent.

ENM 566. Reliability Engr II. 3 Hours

RELIABILITY ENGINEERING II - Continuation of ENM 565 with emphasis on the design of systems to meet specified reliability, availability, and maintainability requirements. Prerequisite(s): ENM 565 or equivalent.

ENM 582. Engr Organizatnl Dev. 3 Hours

ENGINEERING ORGANIZATIONAL DEVELOPMENT - This course addresses individual, group behavior, and organizational design examined within the structure of technical operations, including the systems engineering environment. The objectives are to provide the participants with an understanding of behavioral science and design principles, their effect on organizational performance, and how one applies this science in the management of technical personnel and projects, especially in the systems engineering environment.

ENM 585. Engr Orgnztnl Sys. 3 Hours

ENGINEERING 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 and other current issues.

ENM 587. Leading in Tech Envr. 3 Hours

LEADING IN TECHNICAL ENVIRONMENTS - Understanding and utilizing the keys to leading in technical organizations represents a distinct advantage to individuals and the institutions they serve. Students will be exposed to the underpinning of leadership in engineering environments including tenets, theories, debates, strategies, and innovative techniques. Opportunities to interact with technical leaders from government and industry will be provided. Practical application skills will be developed.

ENM 590. Case Stds-Engr Mgt. 3 Hours

CASE STUDIES IN ENGINEERING MANAGEMENT - This capstone course emphasizes the completion of an engineering management project or study under the direction of a faculty advisor. A well-written report is required. Prerequisite(s): Completion of the engineering management core courses or equivalent.

ENM 595. SP: Engr Mgt. 1-3 Hours

SPECIAL PROBLEMS IN ENGINEERING MANAGEMENT - This course covers special assignments in engineering management as arranged and approved by the advisor and the program director.

Engineering Mechanics

Donald V. Chase, Department Chairperson

Master of Science in Engineering Mechanics

The program of study for the degree of Master of Science in Engineering Mechanics requires a minimum of 33 semester hours of credit consisting of the following:

EGM 500	Intro-Numercl Mthds	3
EGM 503	Intr Continuum Mechn	3
EGM 533	Theory of Elasticity	3
EGM 546	Finite Elmnt Anly I	3
MTH 535	Partial Diff Equatns	3
MTH 551	Methods Mathmtl Phys	3
Nine elective semester hours in engineering mechanics		9
Six semester hours of research on an approved thesis. Thesis credit may be replaced by nine semester hours of coursework only with the approval of both the advisor and the department chair.		6
Total Hours		33

See also Master's Degree Requirements in School of Engineering section in the bulletin and consult with the advisor.

Courses

EGM 500. Intro-Numercl Mthds. 3 Hours

INTRODUCTION TO NUMERICAL METHODS - 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.

EGM 502. Adv Engr Analysis. 3 Hours

ADVANCED ENGINEERING ANALYSIS - Advanced Engineering Analysis.

EGM 503. Intr Continuum Mechn. 3 Hours

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(s): EGM 303.

EGM 504. Fund of Fluid Mech. 3 Hours

FUNDAMENTALS OF FLUID MECHANICS - Fundamentals of fluid mechanics.

EGM 506. Mech Behav of Matls. 3 Hours

MECHANICAL BEHAVIOR OF MATERIALS - Fundamental relationships between the structure and mechanical behavior of materials. Includes fundamentals of stress and strain, the physical basis for elastic deformation, elementary dislocation theory and plastic deformation, strengthening mechanisms, yield criteria and their application to biaxial and multi-axial behavior and failure, fracture and toughening mechanisms, creep and creep rupture, behavior and failure of cellular solids, and fatigue. Prerequisite(s): EGM 303.

EGM 511. Exprmntl Stress Anly. 3 Hours

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(s): EGM 303.

EGM 519. Analytic Dynamics. 3 Hours

ANALYTIC DYNAMICS - Analytic dynamics.

EGM 531. Linear Viscoelastcity. 3 Hours

LINEAR VISCOELASTICITY - Linear viscoelasticity.

EGM 533. Theory of Elasticity. 3 Hours

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. Prerequisite(s): EGM 303. Corequisite(s): EGM 503.

EGM 534. Thry-Plates&Shells. 3 Hours

THEORY: PLATES AND SHELLS - Theory of plates and shells.

EGM 536. Random Vibrations. 3 Hours

RANDOM VIBRATIONS - Random vibrations.

EGM 538. Intro-Aeroelastcity. 3 Hours

INTRODUCTION TO AEROELASTICITY - Introductory course to aeroelasticity.

EGM 540. Composite Design. 3 Hours

COMPOSITE DESIGN - Design with fiber reinforced composite materials. Fiber and resin selection, laminate design, bending and torsion of stiffening elements, open and filled holes, joining methods, fatigue, damage tolerance, building block approach, design Prerequisite(s): EGM 303.

EGM 541. Exp Mch-Cmpste Mtls. 3 Hours

COMPOSITE MATERIALS - Composite materials in Engineering Mechanics.

EGM 543. Analy Mech-Cmp Matls. 3 Hours

ANALYTICAL MECHANICS COMPOSITE MATERIALS - Analytical models are developed for predicting the mechanical and thermal behavior of fiber-reinforced composite materials as a function of constituent material properties. Both continuous and discontinuous fiber-reinforced systems are considered. Specific topics include basic mechanics of anisotropic materials, micro-mechanics and lamination theory, free edge effects, and failure criteria. Prerequisite(s): EGM 303.

EGM 545. Computatnl Meth Dsgn. 3 Hours

COMPUTATIONAL METHODS DESIGN - Computational methods design.

EGM 546. Finite Elmnt Only I. 3 Hours

FINITE ELEMENT ANALYSIS I - Fundamental development of the Finite Element Method (FEM) and solution of field and structural problems. Variational principles and weak forms; finite element discretization; shape functions; finite elements for field problems; bar, beam, plate, and shell elements; isoparametric finite elements; stiffness, nodal force, and mass matrices; matrix assembly procedures; computer coding techniques; modeling decisions; program output interpretation. Emphasis on a thorough understanding of FEM theory and modeling techniques. Prerequisite(s): EGM 503 or EGM 533.

EGM 547. Finte Elmnt Analy II. 3 Hours

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(s): EGM 546.

EGM 548. Enrgy Mthd-Sol Mechn. 3 Hours

ENERGY METHODS: SOLAR MECHANICS - Solar mechanics.

EGM 549. Thry-Elastic Stablt. 3 Hours

THEORY OF ELASTIC STABILITY - Theory of Elastic Stability.

EGM 552. Boundary Layers. 3 Hours

BOUNDARY LAYERS - Boundary Layers.

EGM 553. Compressible Flow. 3 Hours

COMPRESSIBLE FLOW - Compressible flow.

EGM 570. Fracture Mechanics. 3 Hours

FRACTURE MECHANICS - Application of the principles of fracture mechanics to problems associated with fatigue and fracture in engineering structures. Development of models that apply to a range of materials, geometries, and loading conditions. Prerequisite(s): EGM 506 or permission of instructor.

EGM 575. Fracture & Fatigue. 3 Hours

FRACTURE & FATIGUE OF METALS & ALLOYS I - Effects of microstructure on the fracture and fatigue behavior of engineering metals and alloys with the special emphasis on static and dynamic brittle and ductile failures and static and fatigue crack initiation. Alloy fracture resistance, fracture toughness, fatigue behavior, and methods to improve fracture and fatigue behavior will be discussed in detail. Various analytical techniques for failure analysis of structural components will be presented. A practical failure analysis project will be performed. Prerequisite(s): (MAT 501 or MAT 506) or permission of instructor.

EGM 576. Fracture&Fatigue II. 3 Hours

FRACTURE AND FATIGUE II - Second course on the effects of microstructure on fracture and fatigue of engineering metals and alloys.

EGM 590. Selected Readings. 3 Hours

SELECTED READINGS IN ENGINEERING MECHANICS - Directed readings in a designated area, arranged and approved by the student's faculty advisor and the department chair. May be repeated.

EGM 595. Special Problems. 3 Hours

SPECIAL PROBLEMS IN ENGINEERING MECHANICS - Special topics arranged and approved by the student's faculty advisor and the department chair.

EGM 598. Project. 3 Hours

PROJECT - Project in Engineering Mechanics.

EGM 599. Thesis. 3-6 Hours

THESIS - Thesis in Engineering Mechanics.

Management Science

- Master of Science in Management Science
- Certificate in Six Sigma
- Certificate in Systems Engineering
- Certificate in Human Factors Engineering
- Certificate in Design of Experiments

Patrick J. Sweeney, Interim Department Chairperson

The program of study leading to the Master of Science in management science is an interdisciplinary program 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 and Allied Professions. Applications are invited from college graduates in all fields of study - business, education, engineering, liberal arts, physical sciences, and social sciences. The applicant whose preparation does not include at least three semesters of analytic geometry and calculus will be expected to complete appropriate prerequisite courses prior to admission to the program. Check us out at <http://engineering.udayton.edu/programs/management>

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. Graduates must be proficient in problem solving and decision-making, system modeling and optimization and the application of probability and statistical theory to management problems. Graduates must also 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 management science techniques in our modern society.

Most courses are simulcast (offered in the classroom at the same time as they are offered via distance learning over the Internet at 11:30 a.m., 4:30 p.m., and 6:00 p.m.). These classes meet twice per week, typically Monday and Wednesday or Tuesday and Thursday. Nearly every course is live in the classroom, live on the internet, and recorded for future reference for the students.

In 2012, U.S. News & world Report ranked our department second in the nation in faculty credentials and training, 26th in student services and technology, and 35th in student engagement and accreditation.

Master of Science in Management Science

The program of study must include a minimum of 36 semester hours consisting of the following:

ENM 500	Prob&Stat for Engrs	3
MSC 521	Intro to OPS Rsrch	3
MSC 535	App Oper Res/Mgt Sci	3
MSC 572	System Simulation	3

Group I - Probabilistic Modeling Electives

Select at least two of the following: 6

ENM 501	Appl Engr Statistics	
ENM 505	Mgt of Engr Systms	
ENM 532	Cognitive Sys Engr	
ENM 560	Quality Assurance	
ENM 561	Dsgn & Analy Expr	
ENM 565	Reliability Engr I	
MSC 544	Forecast&time Series	
MSC 546	Queueing Thry&Appl	

Group II - Deterministic Modeling Electives

Select at least two of the following: 6

ENM 515	Human Factors Engr	
ENM 530	Engineering Economy	
ENM 539	Sys Engr/Prjct Mgmt	
ENM 541	Productn Engineering	
ENM 565	Reliability Engr I	
ENM 582	Engr Organizatnl Dev	
MSC 522	Top-Operatns Resrch	
MSC 523	Nonlinear Opt	
MSC 526	Linear & Integer Opt	
MSC 527	Advanced Topics-Opt	
MSC 542	Inventry Theory&Appl	
MSC 555	System Dynamics I	
MSC 556	System Dynamics II	
MSC 575	Intro-Artifcl Intell	
MSC 577	Intro-Expert Systems	
MSC 579	Sp Top:A I	
MSC 595	Current Problems	
MSC 599	Thesis	

Twelve semester hours in a cognate field-or additional in-depth MSC 12 courses- appropriate to the student's objectives, as approved by the advisor. Approved fields of study for the cognate field include applied mathematics, artificial intelligence, business administration, computer science, educational administration, engineering, human factors, and manufacturing. Two of these courses may be replaced by a 6-semester hour Master's thesis.

Students admitted conditionally will first take the ENM 503 course and then the ENM 500 course the following term. Grades of "B" or better must be earned in each course so the student can be removed from conditional standing. The ENM 503 course will replace one of the program's free electives.

Total Hours 36

When applying for the MSC degree, please note that the Department of Engineering Management and Systems does not require the three letters of recommendation, a personal statement or resume, or GRE results as required by other University of Dayton departments and programs.

CERTIFICATES

Programs of study leading to four graduate-level certificates are also available. These certificates are based on a complete knowledge of calculus. Students seeking any of these graduate certificates must apply to and be accepted for admission into a University of Dayton graduate degree program. All Graduate School policies pertaining to admission apply.

Certificate in Six Sigma

The Certificate in Six Sigma is designed to offer practicing engineers and other technically-educated professionals the opportunity to master Six Sigma concepts by studying their theoretical roots and conceptual foundations through coursework at the graduate level. Upon successful completion, students are expected to be able to demonstrate an in-depth understanding of the statistical concepts underlying the methods & tools of Six Sigma, correctly apply those methods & tools, correctly analyze and interpret the results, and pursue further research or coursework in the area.

The certificate program is comprised of the following four courses:

ENM 500	Prob&Stat for Engrs	3
ENM 560	Quality Assurance	3
ENM 561	Dsgn & Analy Expr	3
ENM 565	Reliability Engr I	3
Total Hours		12

Certificate in Systems Engineering

Systems engineering is an interdisciplinary approach and means to enable the realization of successful systems. It focuses on defining customer needs and required functionality early in the development cycle, documenting requirements, and then proceeding with design synthesis and system validation while considering the system as a whole.

The certificate program is comprised of the following four courses:

ENM 505	Mgt of Engr Systms	3
ENM 530	Engineering Economy	3
ENM 539	Sys Engr/Prjct Mgmt	3
ENM 582	Engr Organizatnl Dev	3
Total Hours		12

Certificate in Human Factors Engineering

This certificate is designed for individuals currently in or pursuing technical leadership positions in human factors and engineering involving the design and development of complex programs, processes, or products. It requires the successful completion of the six courses specified below. The certificate integrates traditional psychological coursework related to human performance with the systems and modeling emphasis of engineering.

The certificate program is comprised of the following six courses:

ENM 515	Human Factors Engr	3
ENM 532	Cognitive Sys Engr	3
MSC 572	System Simulation	3
PSY 531	Hum Factrs-Sys Devlp	3
PSY 533	Engr Psychology	3
PSY 535	Ergonomics	3
Total Hours		18

Certificate in Design of Experiments

This certificate is offered to those technical professionals in the engineering and scientific community to furnish them with efficient techniques to solve challenging problems in key processes and product quality experimentation and design.

This certificate program is comprised of the following three courses:

ENM 500	Prob&Stat for Engrs	3
ENM 561	Dsgn & Analy Expr	3
ENM 590	Case Stds-Engr Mgt (This case study must apply the concepts in the Design of Experiments certificate under the direction of a faculty advisor.)	3
Total Hours		9

Courses

MSC 521. Intro to OPS Rsrch. 3 Hours

INTRODUCTION TO OPERATIONS RESEARCH - This course covers methods, principles and fundamentals of deterministic and stochastic operations research. Emphasis is on the formulation and solution of mathematical models in decision making environments, the search for optimal solutions to these decisions, and the explicit treatment of uncertainty through the use of probabilistic modeling and statistical analysis. Models include linear and non linear programs, inventory and production models, decision analysis, forecasting, and queuing. Corequisite(s): ENM 500.

MSC 522. Top-Operatns Resrch. 3 Hours

TOPICS IN OPERATIONS RESEARCH - In depth study of the methods, principles and fundamentals of operations research, designed to provide additional depth and breadth in selected operations research subject areas. The selection of topics is based upon their usefulness in solving real world problems and their capability to enhance the student's model-building and model-solving skills. This course will further enable the student to pursue studies in operations research through the elective program, self-study and review of the published operations research literature. Prerequisite(s): MSC 521 or equivalent.

MSC 523. Nonlinear Opt. 3 Hours

NONLINEAR OPTIMIZATION - This course concentrates on methods and engineering/management science applications of nonlinear optimization. Both single- and multi-variable methods as well as unconstrained and constrained problems are addressed. The course blends theoretical results such as the Kuhn-Tucker conditions and numerical search techniques such as conjugate directions with applications.

MSC 526. Linear & Integer Opt. 3 Hours

LINEAR & INTEGER OPTIMIZATION - This course covers advanced topics in linear and integer programming with application to real-world problems. Topics include the revised simplex method, the dual-simplex method, interior point algorithms, duality and sensitivity analysis, decomposition principle, and goal and integer programming. Prerequisite(s): MSC 521 or equivalent.

MSC 527. Advanced Topics-Opt. 3 Hours

ADVANCED TOPICS IN OPTIMIZATION - This course emphasizes advanced topics in nonlinear or linear optimization with application to the solution of real-world problems. Topics reflect the state of the art in mathematical programming and optimization. Prerequisite(s): MSC 521; permission of instructor.

MSC 535. App Oper Res/Mgt Sci. 3 Hours

APPLIED OPERATIONS RESEARCH/MANAGEMENT SCIENCE - This is a capstone course focused on the art rather than the 'science' of problem solving in management science and operations research. Emphasis is placed on the techniques of problem solving and model building, examination of unique problem cases, and a course project requiring modeling, data collection, and analysis. Prerequisite(s): Completion of the management science core courses or equivalent.

MSC 542. Inventory Theory&Appl. 3 Hours

INVENTORY THEORY & APPLICATION - In-depth coverage of inventory theory including both deterministic and stochastic models. Topics include EOQ models, quantity discounting, constrained inventory, the fixed reorder point model, the fixed review model, repairable inventory systems, and dynamic inventory/production models. Also discussed are system backorder and availability models. Both public and private sector applications are covered. Prerequisite(s): MSC 521 or equivalent.

MSC 544. Forecast&time Series. 3 Hours

FORECASTING AND TIME SERIES ANALYSIS - Concentration on statistical techniques for modeling and predicting discrete time-series phenomena, with emphasis on understanding and applying forecasting tools in analysis and management settings. Both classical smoothing methods and the Box-Jenkins methodology for model identification, estimation, and prediction are presented. Prerequisite(s): MSC 500 or equivalent.

MSC 546. Queueing Thry&Appl. 3 Hours

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 are covered. Prerequisite(s): MSC 521 or equivalent.

MSC 555. System Dynamics I. 3 Hours

SYSTEM DYNAMICS I - Introduction to the methodology for modeling the dynamics of complex engineering, business, and socioeconomic systems. These models are used to study the effect of organizational policies and design in higher-order, multiple-loop, nonlinear feedback systems.

MSC 556. System Dynamics II. 3 Hours

SYSTEM DYNAMICS II - Continuation of MSC 555 with emphasis on the study of large-scale corporate, urban, educational, and ecological systems. Prerequisite(s): MSC 555 or equivalent.

MSC 572. System Simulation. 3 Hours

SYSTEM SIMULATION - This course is an introduction to stochastic discrete event simulation of complex systems and human performance. Topics covered include model creation, 2D and 3D animation, the process of generating random numbers and random variables, the analysis of input data, the computer modeling of real systems, validation and variation, and the analysis of simulation output. ARENA is the primary software used and Micro Saint Smart is demonstrated and is the secondary software used.

MSC 573. Simulatn/Human Perf. 3 Hours

SIMULATION OF HUMAN APPEARANCE - This course is an introduction to stochastic discrete event simulation of human performance. Topics covered include model creation, 2D and 3D animation, the process of generating random numbers and random variables, the analysis of input data, the computer modeling of real systems, validation and variation, and the analysis of simulation output. ARENA is the primary software used and Micro Saint Smart is demonstrated and is the secondary software used. Prerequisite(s): Graduate or senior status in the School of Engineering or the College of Arts and Sciences.

MSC 575. Intro-Artifcl Intell. 3 Hours

INTRODUCTION TO ARTIFICIAL INTELLIGENCE - Introduction to the methods of artificial intelligence with an emphasis on engineering design and analysis. Topics include logical and probabilistic reasoning, pattern matching, knowledge representation, search, rule-based systems, natural language processing, and computer vision. Concepts and applications are illustrated with Lisp programs.

MSC 577. Intro-Expert Systems. 3 Hours

INTRODUCTION TO EXPERT SYSTEMS - Introduction to the development and application of rule-based systems using an integrated environment of commands, rules, databases, spreadsheets, text processing, and forms. Topics include knowledge representation, inference, search, ID3 algorithm, and logic along with suitable applications and their subsequent implementations.

MSC 579. Sp Top:A I. 1-6 Hours

SPECIAL TOPICS: ARTIFICIAL INTELLIGENCE - Special topics include engineering applications using neural net architecture, object-oriented programming, genetic algorithm and advanced search methods illustrated in Common Lisp and a rule-based environment. Prerequisite(s): MSC 575, 577, or permission of instructor.

MSC 595. Current Problems. 1-3 Hours

CURRENT PROBLEMS - Topics of current interest in specialized areas of Management Science.

MSC 599. Thesis. 6 Hours

THESIS - Thesis in Management Science.

Materials Engineering

Daniel Eylon, Program Director

Doctorate of Engineering in Materials Engineering

See the Doctoral Degree Requirements section on the School of Engineering page and consult with the department chair.

Doctorate of Philosophy in Materials Engineering

See the Doctoral Degree Requirements section on the School of Engineering page and consult with the department chair.

Master of Science in Materials Engineering

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:

Twelve semester hours in the major field	12
Twelve semester hours of approved electives from current course offerings which best suit the student's requirements.	12
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 coursework.	6
Total Hours	30

See also Master's Degree Requirements in School of Engineering section in the bulletin and consult with the advisor.

Courses

MAT 501. Prin-Materials I. 3 Hours

PRINCIPLES OF MATERIALS I - Structure of engineering materials from electronic to atomic and crystallographic considerations. Includes: atomic structure and interatomic bonding, imperfections, diffusion, mechanical properties, strengthening mechanisms, failure, phase diagrams, phase transformations and processing. Prerequisite(s): MTH 219; college chemistry; college physics.

MAT 502. Prin of Materials II. 3 Hours

PRINCIPLES OF MATERIALS II - Structure, behavior, and processing of metal alloys, ceramics, polymers, and composites to include: mechanical behavior, corrosion, electrical, magnetic, and optical properties. Prerequisite(s): MAT 501 or equivalent.

MAT 504. Technqs-Materls Anal. 3 Hours

TECHNIQUES OF MATERIALS ANALYSIS - Fundamentals and applications of the traditional analytical methods such as x-ray analysis, electron microprobe, and scanning microscopy. Techniques such as NMR, atomic absorption, Raman, Mossbauer, and field ion microscopy will be covered. Emphasis on applicability. Prerequisite(s): MAT 501 or permission of instructor.

MAT 506. Mech Behavior-Matrls. 3 Hours

MECHANICAL BEHAVIOR OF MATERIALS - Fundamental relationships between the structure and mechanical behavior of materials. Includes fundamentals of stress and strain, the physical basis for elastic deformation, elementary, dislocation theory and plastic deformation, strengthening mechanisms, yield criteria and their application to biaxial and multi-axial behavior and failure, fracture and toughening mechanisms, creep and creep rupture, behavior and failure of cellular solids, and fatigue. Prerequisite(s): (MAT 501, MAT 502) or permission of instructor.

MAT 507. Intro-Ceramic Matrls. 3 Hours

INTRODUCTION TO CERAMIC MATERIALS - The course begins with an overview of the diverse ceramic fields and of the historical evolution of ceramics. The physics and chemistry fundamentals associated with modern ceramic technology are reviewed. The scope of ceramic compositions and processing technologies are described. The physical, chemical, mechanical and electrical properties of ceramics and the associated methods for measuring these properties are presented. The effects of time, temperature and environmental conditions on material behavior are studied. The design concepts used for ceramic products and the range of applications for modern ceramics are discussed. The course also includes a history of the development and use of ceramics in turbine engines. Prerequisite(s): MAT 501.

MAT 508. Prin-Materls Selectn. 3 Hours

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(s): MAT 501 or permission of instructor.

MAT 509. Intro-Polymer Sci. 3 Hours

INTRODUCTION TO POLYMER SCIENCE - THERMOPLASTICS - Broad technical overview of the nature of synthetic macromolecules, including the formation of polymers and their structure, structure-property relationships, polymer characterization and processing, and applications of polymers. Fundamental topics such as viscoelasticity, the glassy state, time-temperature superposition, polymer transitions, and free volume will also be reviewed. The course focuses on thermoplastic polymers. Prerequisite(s): Organic chemistry; college physics; differential equations.

MAT 510. High Prf Therm-Polymr. 3 Hours

HIGH PERFORMANCE THERMOSTAT POLYMERS - Survey of high performance thermo set resins, focusing on chemistry, processing, and properties of six general resin families: vinyl ester, epoxy, phenolic, cyanate ester, bismaleimide, and polyamides. The course will include fundamental discussions of polymerization mechanisms, network structure development, rheology and time-temperature transformation, resin toughening, and structure-processing-property relationships. Characterization techniques will also be reviewed. Prerequisite(s): Organic chemistry; college physics; differential equations.

MAT 511. Prin of Corrosion. 3 Hours

PRINCIPLES OF CORROSION - Theoretical and practical application of electrochemical principles to the field of corrosion covering thermodynamics, kinetics, forms of corrosion and methods for characterizing and controlling corrosion in areas of biomedical engineering, aerospace, automotive, and marine environments. Prerequisite(s): MAT 501.

MAT 512. Engr Mag Matrls. 3 Hours

ENGINEERING MAGNETIC MATERIALS & THEIR FUNCTION IN GREEN ENERGY - Magnetic fundamentals including spontaneous magnetization; advanced magnetic materials, computer modeling of magnetic circuits using 2D/3D finite element analysis. Applications of magnetic materials in electric machines. Prerequisite(s): MAT 501; college physics or permission of instructor.

MAT 513. Mag Matrls-Engr Appl. 3 Hours

ADVANCED MAGNETIC MATERIALS - More detailed description of magnetics and magnetic materials, including spontaneous magnetization, domain structure, magnetic anisotropy, energies involved in magnetic materials, technical magnetization, Fe, Fe-Si, Fe-Ni, Fe-Co, Fe-Al, soft ferrites, amorphous soft magnetic materials, nanocrystalline soft magnetic materials, Alnico, Fe-Cr-Co, hard ferrites, SmCo5, Sm2Co17, Nd2Fe14B, Sm-Fe-N, nanocomposite permanent magnet materials and coercivity mechanisms. Prerequisite(s): MAT 512.

MAT 521. NDE/SHM. 3 Hours

NDE/SHM - Introduction to theory and application of methods for nondestructive flaw detection and materials characterization for metals, polymers, ceramics and advanced composites using x-ray, ultrasonic, electromagnetic (magnetic particle, eddy current), thermal, and optical techniques Also, statistical analysis of reliability, probability of detection and quality assurance provided. Prerequisite(s): Permission of instructor.

MAT 527. Methds-Polymer Analy. 3 Hours

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 and rheological properties; transitions and crystallinity. Prerequisite(s): MAT 509 or MAT 510.

MAT 528. Chem Behav of Matls. 3 Hours

CHEMICAL BEHAVIOR OF MATERIALS - This course will address chemical behavior as a subject complementary to mechanical behavior of materials. A special emphasis will be given to structure-property relationships of the major classes of materials. Physical/chemical periodicity, bonding, processing chemistry, and chemical behavior in the application environment will be addressed. Each major class of materials will be discussed with specific case studies for each. Prerequisite(s): College chemistry or permission of the instructor.

MAT 529. Computational Chem. 3 Hours

COMPUTATIONAL CHEMISTRY - Introduction to computational chemistry including a discussion of ab initio, semiempirical, and DFT methods and an overview of molecular mechanics and molecular simulation methods. Lectures are supplemented by simulation exercises using commercial programs such as Gaussiari and Molecular Studio. Prerequisite(s): CHM124, or consent of instructor.

MAT 535. High Temperature Matl. 3 Hours

HIGH TEMPERATURE MATERIALS - This course will provide students with the basic material behavior concepts which control high-temperature properties of metals and alloys. A special emphasis will be given to creep behavior of metals and alloys including a comprehensive study of relationships between microstructure and high-temperature creep deformation of pure metals, single-phase alloys, multi-phase alloys, and dispersion-strengthened materials. In addition, the properties and applications of high-temperature materials will be discussed, especially those alloys used in the aerospace industry for gas turbine engine rotating-component, such as titanium and nickel-based superalloys. Prerequisite(s): MAT 501 or equivalent.

MAT 540. Composite Design. 3 Hours

COMPOSITE DESIGN - Design with composite materials. Micromechanics. Lamination theory. Joining. Fatigue. Environmental effects. Prerequisite(s): EGM 303 or EGM 330.

MAT 541. Exp Mech Cmpsite Mat. 3 Hours

EXPERIMENTAL MECHANICS OF COMPOSITE MATERIALS - Introduction to the mechanical response of fiber-reinforced composite materials with emphasis on the development of experimental methodology. Analytical topics include stress-strain behavior of anisotropic materials, laminate mechanics, and strength analysis. Theoretical models are applied to the analysis of experimental techniques used for characterizing composite materials. Lectures are supplemented by laboratory sessions in which characterization tests are performed on contemporary composite materials. Prerequisite(s): EGM 303 or EGM 330.

MAT 542. Adv Composites. 3 Hours

ADVANCED COMPOSITES - Materials and processing. Comprehensive introduction to advanced fiber reinforced polymeric matrix composites. Constituent materials and composite processing will be emphasized with special emphasis placed on structure-property relationships, the role of matrix in composite processing, mechanical behavior and laminate processing. Specific topics will include starting materials, material forms, processing, quality assurance, test methods, and mechanical behavior. Prerequisite(s): (MAT 501 or MAT 509) or permission of instructor.

MAT 543. Analy Mech-Cmp Matls. 3 Hours

ANALYTICAL MECHANICS OF COMPOSITE MATERIALS - Analytical models are developed for predicting the mechanical and thermal behavior of fiber-reinforced composite materials as a function of constituent material properties. Both continuous and discontinuous fiber-reinforced systems are considered. Specific topics include basic mechanics of anisotropic materials, micro-mechanics and lamination theory, free-edge effects, and failure criteria. Prerequisite(s): EGM 303 or EGM 330.

MAT 544. Mech-Composite Struc. 3 Hours

MECHANICS OF COMPOSITE MATERIALS - Comprehensive treatment of laminated beams, plates, and sandwich structures. Effect of heterogeneity and anisotropy on bending under lateral loads, buckling, and free vibration are emphasized. Shear deformation and other higher-order theories and their range of parametric applications also considered. Prerequisite(s): MAT 543 or permission of instructor.

MAT 570. Fracture Mechanics. 3 Hours

FRACTURE MECHANICS - Application of the principles of fracture mechanics to problems associated with fatigue and fracture in engineering structures. The course will cover the development of models that apply to a range of materials, geometries, and loading conditions. Prerequisite(s): MAT 506 or permission of instructor.

MAT 575. Fracture & Fatigue. 3 Hours

FRACTURE & FATIGUE OF METALS & ALLOYS I - This course will cover the effects of microstructure on the fracture and fatigue behavior of engineering metals and alloys with a special emphasis on static and dynamic brittle and ductile failures and static and fatigue crack initiation. Alloy fracture resistance, fracture toughness, fatigue behavior, and methods to improve fracture and fatigue behavior will be discussed in detail. Various analytical techniques for failure analysis of structural components will be presented. A practical failure-analysis project will be performed. Prerequisite(s): (MAT 501 or MAT 506) or permission of instructor.

MAT 576. Fracture&Fatigue II. 3 Hours

FRACTURE & FATIGUE OF METALS & ALLOYS II - This course will cover the areas of the effects of microstructure on fatigue crack propagation and on final fracture by fatigue. This will include fatigue life prediction, using damage-tolerance approach to component-design and microstructural and structural synthesis for optimum behavior. Specific material-related aspects of fatigue crack propagation mechanisms for optimum damage tolerant behavior, and the related failure analysis will also be covered. A comprehensive project in failure-analysis of aerospace metallic components will also be conducted. Prerequisite(s): MAT 575 or equivalent.

MAT 577. Lght Structrl Metals. 3 Hours

LIGHT STRUCTURAL METALS - This course is an introduction and review of light structural metals, commonly used throughout the aerospace and automotive industries. It will include the metallurgy of light metals, from ore extraction, smelting, alloying and shape making to heat-treatment. Design and applications of light structural metals and a comprehensive technology and economic comparisons with other groups of metals will be presented. Prerequisite(s): MAT 501, MAT 502.

MAT 579. Mtls Adv Egr Appl. 3 Hours

MATERIALS FOR ADVANCED ENERGY APPLICATIONS - Various advanced energy technologies (AMTEC, Fuel Cells, Thermoelectrics, Nuclear, etc.) will be discussed with an emphasis on the role that materials have/will play in their development. Critical 'bottlenecks' in materials development delaying the introduction of new advanced energy systems will be identified. In addition, how material selections are made based on operational system environments in 'real world' scenarios will be presented. Prerequisite(s): MAT 501 AND MAT 502 or permission of instructor.

MAT 580. Polymer Durability. 3 Hours

POLYMER DURABILITY - An in-depth study of the mechanisms leading to polymer decomposition and degradation, as well as methods for analyzing and preventing or minimizing these processes and thereby improving polymer durability. Topics include thermal / pyrolytic, thermo-oxidative, hydrolysis, photo/UV/weathering, flammability, mechanical, biodegradation, high energy radiation, and physical aging. Prerequisite(s): MAT 509 / CME 509 or MAT 509 / CME 510.

MAT 581. Nanoelectronics. 3 Hours

INTRODUCTION TO NANOELECTRONICS - Introduction to the physics of materials on the nanoscale; quantum confinement theory; electronic and optical properties of semiconductor nanostructures; single electron transistors (SETs); tunneling and ballistic devices; nanostructured LEDs, photodetectors, and lasers; nanophotovoltaics and nanomagnetism; quantum computing and molecular electronics; nanoelectronic fabrication, state-of-the-art and emerging nanoscale devices and applications. Prerequisite(s): ECE 506.

MAT 583. Adv Photovoltaics. 3 Hours

ADVANCED PHOTOVOLTAICS - This theoretical course will cover science and applications of photovoltaics, with special emphasis on inorganic and organic semiconductors, ferroelectrics, chalcopyrites, metamaterials, and quantum structures. Prerequisite(s): ECE 506 or permission of instructor.

MAT 589. Graduate Sem Series. 1 Hour

GRADUATE SEMINAR SERIES - Graduate seminars on various current material topics presented by guest speakers.

MAT 590. Selected Readings. 1-3 Hours

SELECTED READINGS IN MATERIAL ENGINEERING - Directed readings in selected areas of materials engineering arranged and approved by the student's advisor and the program director.

MAT 595. Special Problems. 1-3 Hours

SPECIAL PROBLEMS IN MATERIALS ENGINEERING - Special assignments arranged by the materials engineering faculty.

MAT 597. Research Methods. 3 Hours

RESEARCH METHODS - This course will provide students the ability to apply research methods and problem solving skills to identify and define a research problem, develop hypotheses and research plans to test those hypotheses. Students will write and present an original research proposal.

MAT 599. Thesis. 3-6 Hours

THESIS - Thesis.

MAT 601. Surface Chem Solids. 3 Hours

SURFACE CHEMISTRY OF SOLIDS - The nature of solid surfaces as determined by the techniques of x-ray photoelectron and Auger electron spectroscopy, secondary ion mass spectrometry, and ion scattering spectroscopy. Prerequisite(s): MAT 501 or permission of instructor.

MAT 603. Matrls Sci-Thin Films. 3 Hours

MATERIALS SCIENCE OF THIN FILMS - An introduction to the basic physics of film formation processes including physical vapor deposition and chemical vapor deposition, film properties, and applications. Nucleation theory, film interdiffusion and reaction, metallurgical and protective coatings, electrical, magnetic, and optical properties of thin films. Emphasis on applicability. Prerequisite(s): College physics; fundamental physical and chemical properties of materials.

MAT 604. Nanostruc Matrls. 3 Hours

NANOSTRUCTURED MATERIALS - Graduate-level course covering the fundamental physics, properties, and applications of nanostructured materials. Includes carbon nanotubes, nanostructured ceramics, metals, and semiconductor materials. Prerequisite(s): College physics; fundamental physical and chemical properties of materials.

MAT 605. Carbon Nanotech. 3 Hours

INTRODUCTION TO CARBON NANOTECHNOLOGY - Graduate-level course covering the fundamental and applied aspects of Carbon Nanoscale Science and Technology. The course has three goals: (1) an overview of the current development in carbon science and technology (2) an introduction to the surface science as a means to understand the surface interaction at molecular scale, and (3) to provide some explicit links between macro, micro, and nanoscale technologies. Some of the medical field, structural and friction application will be addressed. This course is aimed at both science and engineering students.

MAT 699. PHD Dissertation. 1-15 Hours

PHD DISSERTATION - An original research effort which makes a definite contribution to technical knowledge. Results must be of sufficient importance to merit publication.

Mechanical Engineering

Kelly Kissock, Department Chairperson

Doctorate of Engineering in Mechanical Engineering

See the Doctoral Degree Requirements section on the School of Engineering page and consult with the department chair.

Doctorate of Philosophy in Mechanical Engineering

See the Doctoral Degree Requirements section on the School of Engineering page and consult with the department chair.

Master of Science in Mechanical Engineering

The program of study leading to the Master of Science in Mechanical Engineering degree, developed by the student in conjunction with her/his advisor, must include a minimum of 30 semester hours. The program of study must include 18 or more semester hours of MEE coursework and a minimum of 3 semester hours of mathematics. Students may pursue a thesis or non-thesis option. A thesis option would include 6 semester hours of MEE 599 MEE Thesis coursework, which includes both an oral defense and a written thesis.

Students may elect to include an area of concentration in their program of study by selecting courses from these areas:

Materials		45
MEE 501	Prin of Materials I	
MEE 502	Prin of Materials II	
MEE 503	Intro Continuum Mech	
MEE 505	ThermodynmcS-Solids	
MEE 506	Mechancl Bhvr-Matrls	
MEE 508	Prin Matrls Selectn	
MEE 509	Intro Polymer Sci	
MEE 525	Prin of Corrosion	
MEE 541	Exp Mech-Comp Matls	
MEE 542	Advanced Composites	
MEE 543	Analy Mech-Cmp Matls	
MEE 544	Mech-Compost Struc	
MEE 570	Fracture Mechanics	

MEE 575	Fatg&Frac-Mtl&Alloy
MEE 576	Fatg&Frac/Mtl&Alloy
Thermo-Fluids	69
MEE 503	Intro Continuum Mech
MEE 504	Fund of Fluid Mech
MEE 505	ThermodynmcS-Solids
MEE 511	Adv Thermodynamics
MEE 512	Microscpc Thrmodynmc
MEE 513	Propulsion
MEE 514	Physicl Gas Dynamics
MEE 515	Conductn Heat Transfr
MEE 516	Conv Heat&Mass Tsfr
MEE 517	Radiat Heat Transfer
MEE 540	Tribology
MEE 552	Boundry Layer Thry
MEE 553	Compressible Flow
MEE 555	Turbulence
MEE 558	Compu Fluid Dyn
MEE 565	Fund of Combustion
MEE 566	Combustion Theory
MEE 567	Smrt Structrs & Mtls
MEE 568	Intrnl Combstn Engrs
MEE 569	Energy Eff Bldgs
AEE 501	Adv Aerodynamics I
AEE 502	Adv Aerodynamics II
AEE 556	Hypersonic Aerodynmc
AEE 558	Compu Fluid Dyn
Solid Mechanics	51
MEE 503	Intro Continuum Mech
MEE 519	Analytical Dynamics
MEE 533	Theory of Elasticity
MEE 534	Theory Plates&Shells
MEE 535	Adv Mech Vibrations
MEE 536	Random Vibrations
MEE 538	Intro-Aeroelastcty
MEE 539	Theory of Plasticity
MEE 543	Analy Mech-Cmp Matls
MEE 544	Mech-Compost Struc
MEE 545	Computr Methds-Desgn
MEE 546	Finite Elmnt Anly I
MEE 547	Finite Elmnt Anly II
MEE 548	Enrgy Mthds-Sld Mech
MEE 549	Thry-Elastic Stably
MEE 570	Fracture Mechanics
MEE 575	Fatg&Frac-Mtl&Alloy
Design and Manufacturing	84
MEE 503	Intro Continuum Mech
MEE 506	Mechancl Bhvr-Matrls
MEE 520	Theortcl Kinematics
MEE 521	Kinematic Prin-Dsgn
MEE 522	Geometric Methods
MEE 523	Engr Des Optimizatn

MEE 527	Automatc contrl Thry
MEE 533	Theory of Elasticity
MEE 534	Theory Plates&Shells
MEE 535	Adv Mech Vibrations
MEE 536	Random Vibrations
MEE 537	Mechatronics
MEE 538	Intro-Aeroelastcty
MEE 539	Theory of Plasticity
MEE 540	Tribology
MEE 545	Computr Methds-Desgn
MEE 546	Finite Elmnt Anly I
MEE 547	Finite Elmnt Anly II
MEE 551	Noise & Vibr Control
MEE 570	Fracture Mechanics
MEE 572	Des For Environment
MEE 574	Vrtl Prtypng-Prd&Prs
MEE 575	Fatg&Frac-Mtl&Alloy
MEE 577	Robt&Nmrcly Cntr Mac
MEE 579	Cmptr Aided Mech Des
MEE 582	Automated Design
MEE 585	Design-Producibltly
MEE 587	Lean Manufacturing

See also Master's Degree Requirements in School of Engineering section in the bulletin and consult with the advisor.

Courses

MEE 500. Adv Engr Analysis. 3 Hours

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.

MEE 501. Prin of Materials I. 3 Hours

PRINCIPLES OF MATERIALS I - Structure of engineering materials from electronic to atomic and crystallographic considerations. Includes atomic structure and interatomic bonding, imperfections, diffusion, mechanical properties, strengthening mechanisms, failure, phase diagrams, phase transformations and processing. Prerequisite(s): MTH 219; college chemistry; college physics.

MEE 502. Prin of Materials II. 3 Hours

PRINCIPLES OF MATERIALS II - Structure, behavior and processing of metal alloys, ceramics, polymers, and composites to include: mechanical behavior, corrosion, electrical, magnetic, and optical properties. Prerequisite(s): MEE 501 or equivalent.

MEE 503. Intro Continuum Mech. 3 Hours

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(s): EGM 303 or EGM 330.

MEE 504. Fund of Fluid Mech. 3 Hours

FUNDAMENTALS OF FLUID MECHANICS - An advanced course in fluid mechanics with emphasis on the derivation of conservation equations and the application of constitutive theory. Navier-Stokes equations. Ideal fluid approximation. Exact and approximate solutions to classical viscous and inviscid problems. Compressible and incompressible flows. Prerequisite(s): MEE 503.

MEE 505. Thermodynmc-Solids. 3 Hours

THERMODYNAMICS OF SOLIDS - Laws of thermodynamics, auxiliary functions, thermodynamic relations, phase transitions, thermodynamic equilibrium, thermodynamic properties of solid solutions, surfaces and interfaces. Prerequisite(s): MEE 501 or permission of instructor.

MEE 506. MechancI Bhvr-Matrls. 3 Hours

MECHANICAL BEHAVIOR OF MATERIALS - Fundamental relationships between the structure and mechanical behavior of materials. Includes fundamentals of stress and strain, the physical basis for elastic deformation, elementary dislocation theory and plastic deformation, strengthening mechanisms, yield criteria and their application to biaxial and multi-axial behavior and failure, fracture and toughening mechanisms, creep and creep rupture, behavior and failure of cellular solids and fatigue. Prerequisite(s): (MAT 501, MAT 502) or permission of instructor.

MEE 507. Mtls Adv Enrgy Appl. 3 Hours

MATERIALS FOR ADVANCED ENERGY APPLICATIONS - Various advanced energy technologies (AMTEC, Fuel Cells, Thermoelectrics, Nuclear, etc.) will be discussed with an emphasis on the role that materials have/will play in their development. Critical 'bottlenecks' in materials development delaying the introduction of new advanced energy systems will be identified. In addition, how material selections are made based on operational system environments in 'real world' scenarios will be presented.

MEE 508. Prin Matrls Selectn. 3 Hours

PRINCIPLES OF MATERIAL SELECTIONS - Basic scientific and practical considerations involved in the intelligent selection of materials for specific applications. Impact of new developments in materials technology and analytical techniques. Prerequisite(s): MEE 501 or permission of instructor.

MEE 509. Intro Polymer Sci. 3 Hours

INTRODUCTION TO POLYMER SCIENCE - THERMOPLASTICS - Broad technical overview of the nature of synthetic macromolecules, including the formation of polymers and their structure - property relationships, polymer characterization and processing, and the application of polymers. Fundamental topics such as viscoelasticity, the glassy state, time-temperature superposition, polymer transitions, and free volume will also be reviewed. The course focuses on thermoplastic polymers. Prerequisite(s): Organic chemistry; college physics, differential equations.

MEE 511. Adv Thermodynamics. 3 Hours

ADVANCED 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.

MEE 512. Microscpc Thrmodynmc. 3 Hours

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.

MEE 513. Propulsion. 3 Hours

PROPULSION - Principles of propulsive devices, aerothermodynamics; diffuser and nozzle flow; energy transfer in turbo-machinery; turbojet, turbo-fan, prop-fan engines; and turbo-prop and turboshaft engines. RAM and SCRAM jet analysis and a brief introduction to related materials and air frame-propulsion interaction. Prerequisite(s): MEE 418.

MEE 514. Physicl Gas Dynamics. 3 Hours

PHYSICAL GAS DYNAMICS WITH AEROSPACE APPLICATIONS - Physical Gas Dynamics: The basic elements of kinetic theory, chemical thermodynamics, and statistical mechanics. Emphasis is placed on the application of these molecular theories for analyzing thermodynamic and transport phenomena, as they pertain to the modeling of 'real gas effects' in high temperature flows. The course assumes material media in local equilibrium in the gaseous state but some non-equilibrium behavior will also be considered. The equilibrium topics include kinetic theory and concepts related to microscopic, molecular collisions, macroscopic chemical thermodynamics, the law of mass action, internal molecular structure and quantum energy states, general statistical mechanics applied to the prediction of thermodynamic properties of monatomic and diatomic gases, chemically reacting mixtures, and the dissociation and ionization of gases. Prerequisite(s): Background in fluid mechanics, thermodynamics, and compressible flow or permission of instructor.

MEE 515. Condcn Heat Transfr. 3 Hours

CONDUCTION HEAT TRANSFER - Steady state and transient state conduction. Evaluation of temperature fields by formal mathematics and numerical analysis. Emphasis on approximate solution techniques.

MEE 516. Conv Heat&Mass Tsfr. 3 Hours

CONVECTION HEAT AND MASS TRANSFER - Development of governing differential equations for convection. Methods of solution including similarity methods, integral methods, superposition of solutions, eigenvalue problems. Turbulent flow convection; integral methods, eddy diffusivities for heat and momentum. Extensions to mass transfer. Prerequisite(s): MEE 410 or equivalent.

MEE 517. Radiat Heat Transfer. 3 Hours

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.

MEE 518. Phase Chng Heat Tran. 3 Hours

PHASE CHANGE HEAT TRANSFER AND INTERFACIAL PHENOMENA - Interfacial thermodynamics of liquid-vapor-solid systems; surface wetting statics and dynamics; interfacial and phase stability; homogeneous and heterogeneous nucleation; and boiling heat transfer. Application to liquid-vapor phase change.

MEE 519. Analytical Dynamics. 3 Hours

ANALYTICAL DYNAMICS - Dynamical analysis of a system of particles and rigid bodies; Lagrangian and Hamiltonian formulation of equations of motion; classical integrals of motion. Stability analysis of linear and nonlinear systems. Prerequisite(s): (EGM 202; MTH 219) or equivalent.

MEE 520. Theoretical Kinematics. 3 Hours

THEORETICAL KINEMATICS - Introduction to the mathematical theory underlying the analysis of general spatial motion. Analysis of mechanical systems including robots, mechanisms, walking machines and mechanical hands using linear algebra, quaternion and screw formulations. Fundamental concepts include forward and inverse kinematics, workspace, Jacobians, and singularities.

MEE 521. Kinematic Prin-Dsgn. 3 Hours

KINEMATIC PRINCIPLES IN DESIGN - Study of the use of kinematic principles in the design of mechanical systems including robots, planar and spatial mechanisms, robotic platforms and systems modeled by jointed rigid bodies. The formulation and solution of design problems involving the sizing and placement of these mechanical systems to accomplish specific tasks is the primary goal. Mathematical tools are introduced to account for singularity avoidance and joint limitations.

MEE 522. Geometric Methods. 3 Hours

GEOMETRIC METHODS IN KINEMATICS - Trajectories and velocities of moving bodies are designed and analyzed via the principles of classical differential and algebraic geometry. Fundamentals include centroids, instantaneous invariants, resultants and center point design curves. Curves, surfaces, metrics, manifolds and geodesics in spaces of more than three dimensions are analyzed to study multi-parameter systems.

MEE 523. Engr Des Optimizatn. 3 Hours

ENGINEERING DESIGN OPTIMIZATION - Introduction to the theory and algorithms of nonlinear optimization with an emphasis on applied engineering problems. Fundamentals include Newton's method, line searches, trust regions, convergence rates, and linear programming. Advanced topics include penalty, barrier, and interior-point methods.

MEE 524. Electrochem Power. 3 Hours

ELECTROCHEMICAL POWER - The course will cover fundamental as well as engineering aspects of fuel cell technology. Specifically, the course will cover basic principles of electrochemistry, electrical conductivity (electronic and ionic) of solids, and development/design of major fuel cells (alkaline, polymer electrolyte, phosphoric acid, molten carbonate, and solid oxide). A major part of the course will focus on solid oxide fuel cells (SOFC), as it is emerging to be dominant among various fuel cell technologies. The SOFC can readily and safely use many common hydrocarbon fuels such as natural gas, diesel, gasoline, alcohol, and coal gas. Prerequisite(s): MEE 301, MEE 312, or permission of instructor.

MEE 525. Prin of Corrosion. 3 Hours

PRINCIPLES IN CORROSION - Theoretical and practical application of electrochemical principles to the field of corrosion covering thermodynamics, kinetics, forms of corrosion in areas of biomedical engineering, aerospace, automotive and marine environments. Prerequisite(s): MEE 501.

MEE 526. Aero Fuel Sci. 3 Hours

AEROSPACE FUELS SCIENCE - Basic elements of hydrocarbon fuel production including petroleum based fuels and alternative fuels. Fuel properties, specifications, handling, and logistics. Introduction to chemical kinetics and the chemistry associated with liquid phase thermal-oxidative degradation of fuels. Introduction to the computational modeling of fuel thermal stability and fuel systems. Prerequisite(s): Permission of instructor.

MEE 527. Automatic contrl Thry. 3 Hours

AUTOMATIC CONTROL THEORY - Stability and performance of automatic control systems. Classical methods of analysis including transfer functions, time-domain solutions, root locus and frequency response methods. Modern control theory techniques including state variable analysis, transformation to companion forms, controllability, pole placement, observability and observer systems. Prerequisite(s): ELE 432 or MEE 435 or equivalent.

MEE 530. Biomechanical Egr. 3 Hours

BIOMECHANICAL ENGINEERING - Application of engineering principles to clinical, occupational, and sports biomechanics topics. The course focuses on biomechanical analysis, particularly kinematics and kinetics of human movement, with emphasis on both research and product design. Prerequisite(s): EGM 202; EGR 201.

MEE 533. Theory of Elasticity. 3 Hours

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. Prerequisite(s): EGM 303 or EGM 330. Corequisite(s): MEE 503.

MEE 534. Theory Plates&Shells. 3 Hours

THEORY OF PLATES & 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(s): MEE 533.

MEE 535. Adv Mech Vibrations. 3 Hours

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(s): MEE 319; computer programming.

MEE 536. Random Vibrations. 3 Hours

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. Prerequisite(s): MEE 319; computer programming.

MEE 537. Mechatronics. 3 Hours

MECHATRONICS - Emphasis on the integration of sensors, micro-controllers, electromechanical actuators, and control theory in a 'smart' system for a semester-long design project. Topics include: sensor signal processing, electromechanical actuator fundamentals, interfacing of sensors and actuators to micro-controllers, digital logic, and programming of micro-controllers, programmable logic controllers and programmable logic devices. Equal mix of lecture and laboratory. Prerequisite(s): Undergraduate electronics course. Corequisite(s): Course in controls.

MEE 538. Intro-Aeroelasticity. 3 Hours

INTRODUCTION TO AEROELASTICITY - 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. Prerequisite(s): AEE 501.

MEE 539. Theory of Plasticity. 3 Hours

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(s): MEE 503 or MEE 533.

MEE 540. Tribology. 3 Hours

TRIBOLOGY - 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.

MEE 541. Exp Mech-Comp Matls. 3 Hours

EXPERIMENTAL MECHANICS OF COMPOSITE MATERIALS - Introduction to the mechanical response of fiber-reinforced composite materials with emphasis on the development of experimental methodology. Analytical topics include stress-strain behavior of anisotropic materials, laminate mechanics, and strength analysis. Theoretical models are applied to the analysis of experimental techniques used for characterizing composite materials. Lectures are supplemented by laboratory sessions in which characterization tests are performed on contemporary composites. Prerequisite(s): EGM 303 or EGM 330.

MEE 542. Advanced Composites. 3 Hours

ADVANCED COMPOSITES - Materials and processing. Comprehensive introduction to advanced fiber reinforced polymeric matrix composites. Constituent materials and composite processing will be emphasized with special emphasis placed on structure-property relationships, the role of the matrix in composite processing, mechanical behavior and laminate processing. Specific topics will include starting materials, material forms, processing, quality assurance, test methods and mechanical behavior. Prerequisite(s): (MEE 501 or MEE 509) or permission of instructor.

MEE 543. Analy Mech-Cmp Matls. 3 Hours

ANALYTICAL MECHANICS OF COMPOSITE MATERIALS - Analytical models are developed to predicting the mechanical and thermal behavior of fiber-reinforced composite materials 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, lamination theory, free-edge effects, and failure criteria. Prerequisite(s): EGM 303 or EGM 330.

MEE 544. Mech-Compost Struc. 3 Hours

MECHANICS OF COMPOSITE STRUCTURES - Comprehensive treatment of laminated beams, plates, and sandwich structures. Effect of heterogeneity and anisotropy on bending under lateral loads, buckling, and free vibration are emphasized. Shear deformation and other higher-order theories and their range of parametric application are also considered. Prerequisite(s): MEE 543 or permission of instructor.

MEE 545. Computr Methds-Desgn. 3 Hours

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, use of the digital computer as an aid in the design of mechanical elements. Prerequisite(s): Computer programming.

MEE 546. Finite Elmnt Anly I. 3 Hours

FINITE ELEMENT ANALYSIS I - Fundamental development of the Finite Element Method (FEM), and solution of field problems and comprehensive structural problems, variational principles and weak-forms; finite element discretization; shape functions; finite elements for field problems; bar, beam, plate, and shell elements; isoparametric finite elements; stiffness, nodal force, and mass matrices; matrix assembly procedures; computer dosing techniques; modeling decisions; program output interpretation. Course emphasis on a thorough understanding of FEM theory and modeling techniques. Prerequisite(s): MEE 503 or MEE 533.

MEE 547. Finite Elmnt Anly II. 3 Hours

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(s): MEE 546.

MEE 548. Enrgy Mthds-Sld Mech. 3 Hours

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(s): MEE 503 or MEE 533.

MEE 549. Thry-Elastic Stabty. 3 Hours

THEORY OF ELASTIC STABILITY - Introduction to stability theory: buckling of plates and shells; influence of initial imperfections; nonlinear analysis: numerical solutions methods. Prerequisite(s): MEE 533.

MEE 551. Noise & Vibr Control. 3 Hours

NOISE AND VIBRATION CONTROL - The concepts of noise and vibration control applied to mechanical systems. Methodologies covered will include: passive treatments using resistive elements (sound absorbers, vibration damping) and reactive elements (tailoring of material stiffness and mass); active control of sound and vibration; and numerical analysis. Prerequisite(s): MEE 319 or MEE 439.

MEE 552. Boundry Layer Thry. 3 Hours

BOUNDARY LAYER THEORY - Development of the Prandtl boundary layer approximation in two and three dimensions for both compressible and incompressible flow. Exact and approximate solutions for laminar flows. Unsteady boundary layers. Linear stability theory and transition to turbulence. Empirical and semi-empirical methods for turbulent boundary layers. Higher-order boundary layer theory. Prerequisite(s): MEE 504 or equivalent.

MEE 553. Compressible Flow. 3 Hours

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(s): MEE 504 or equivalent.

MEE 555. Turbulence. 3 Hours

TURBULENCE - Origin, evolution, and dynamics of fully turbulent flows. Description of statistical theory, spectral dynamics, and the energy cascade. Characteristics of wall-bounded and free turbulent shear flows. Reynolds stress models. Prerequisite(s): MEE 504 or equivalent.

MEE 558. Compu Fluid Dyn. 3 Hours

COMPUTATIONAL FLUID DYNAMICS - 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. Prerequisite(s): MEE 504 or permission of instructor.

MEE 560. Propulsion Systems. 3 Hours

PROPULSION SYSTEMS - Introduction and history, types of propulsion systems, thermodynamics review and simple cycle analysis, thermodynamics of high speed gas flow, aircraft gas turbine engine, parametric cycle analysis of various types of gas turbine engines, component and engine performance analyses (inter-turbine burners), advanced cycles with regeneration, reheating, and inter-cooling, variable and inverse cycle engines, hybrid propulsion systems (turbo-ramjets, rocket-ram-scrumjets, etc.) advanced propulsion systems, pulse detonation engine theory and concepts, thermal management of high-speed flight, energy management and vehicle synthesis. Prerequisite(s): (MEE 413 or MEE 513) or permission of instructor.

MEE 565. Fund of Combustion. 3 Hours

FUNDAMENTALS OF FUELS AND 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.

MEE 566. Combustion Theory. 3 Hours

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.

MEE 567. Smrt Structrs & Mtls. 3 Hours

SMART STRUCTURES & MATERIALS OVERVIEW - Smart structures and materials overview. Components of materials, sensing, actuation, and modeling. Electro-mechanical and thermo-mechanical modeling of SMA and piezo-ceramic materials. Elements of control, sensing, and vibration theory. Examples of using piezo-ceramic and shape memory alloy (SMA) based structures for actuation, vibration, position, and shape control with applications in automotive, aircraft, and satellites. Prerequisite(s): Background in materials, electronics, vibrations, and controls or instructor's consent. MEE 312 or instructor's consent.

MEE 568. Intrnl Combstn Engns. 3 Hours

INTERNAL COMBUSTION ENGINES - Study of combustion and energy release processes. Applications to spark and compression ignition, jet, rocket, and gas turbine engines. Special emphasis given to understanding of air pollution problems caused by internal combustion engines. Idealized and actual cycles are studied in preparation for laboratory testing of internal combustion engines.

MEE 569. Energy Eff Bldgs. 3 Hours

ENERGY EFFICIENT BUILDINGS - Provides knowledge and skills necessary to design and operate healthier, more comfortable, more productive, and less environmentally destructive buildings; A specific design target of E/3 (typical energy use divided by three) is established as a goal. Economic, thermodynamic, and heat transfer analyses are utilized. Extensive software development. Prerequisite(s): MEE 410.

MEE 570. Fracture Mechanics. 3 Hours

FRACTURE MECHANICS - Application of the principles of fracture mechanics to problems associated with fatigue and fracture in engineering structures. The course will cover the development of models that apply to a range of materials, geometries, and loading conditions. Prerequisite(s): MEE 506 or permission of instructor.

MEE 571. Des-Thermal Systems. 3 Hours

DESIGN OF THERMAL SYSTEMS - Integration of thermodynamics, heat transfer, engineering economics, and simulation and optimization techniques in a design framework. Topics include design methodology, energy analysis, heat exchanger networks, thermal-system simulation, and optimization techniques.

MEE 572. Des For Environment. 3 Hours

DESIGN FOR ENVIRONMENT - Emphasis on design for environment over the life cycle of a product or process, including consideration of mining, processing, manufacturing, use, and post-life stages. Course provides knowledge and experience in invention for the purpose of clean design, life cycle assessment strategies to estimate the environmental impact of products and processes, and cleaner manufacturing practices. Course includes a major design project.

MEE 573. Renewable Energy Sys. 3 Hours

RENEWABLE ENERGY SYSTEM - Introduction to the impact of energy on the economy and environment. Engineering models of solar thermal and photovoltaic systems. Introduction to wind power. Fuel cells and renewable sources of hydrogen.

MEE 574. Vrtl Prtypng-Prd&Prs. 3 Hours

VIRTUAL PROTO-TYPING OF PRODUCTS & PROCESSES - The use of virtual prototyping for validating/optimizing the product design and the corresponding manufacturing process(es) before building the physical prototype will be practiced. Prerequisite(s): MEE 427.

MEE 575. Fatg&Frac-Mtl&Alloy. 3 Hours

FRACTURE & FATIGUE OF METALS & ALLOYS I - This course will cover the effects of microstructure on the fracture and fatigue behavior of engineering metals and alloys with a special emphasis on static and dynamic brittle and ductile failures and crack initiation. Alloy fracture resistance, fracture toughness, fatigue behavior, and methods to improve fracture and fatigue behavior will be discussed in detail. Various analytical techniques for failure of structural components will be presented. A practical failure-analysis project will be performed. Prerequisite(s): (MEE 501 or MEE 506) or permission of instructor.

MEE 576. Fatg&Frac/Mtl&Alloy. 3 Hours

FRACTURE & FATIGUE OF METALS & ALLOYS II - This course will cover the areas of the effects of microstructure on fatigue crack propagation on fracture and fatigue. This will include fatigue life prediction using damage tolerance approach to component design and microstructural and structural synthesis for optimum behavior. Specific material-related aspects of fatigue crack propagation mechanisms for optimum damage tolerant behavior, and the analysis of aerospace metallic components will also be conducted. Prerequisite(s): MEE 575 or equivalent.

MEE 577. Robt&Nmrcly Cntr Mac. 3 Hours

ROBOTICS & NUMERICALLY CONTROLLED MACHINES - Introduction to robots. Design and analysis of wrist mechanisms and grippers. Robot kinematics and trajectory planning. Sensors and vision systems. Implementation and applications of robotics. Robot cell design and control. Interaction of robot with the environment. NC and CNC machines and machining centers. Fundamentals of rapid prototyping. Prerequisite(s): MEE 435 or equivalent.

MEE 578. Energy Eff Manufact. 3 Hours

ENERGY EFFICIENT MANUFACTURING - This course presents a systematic approach for improving energy efficiency in the manufacturing sector. Current patterns of manufacturing energy use, the need for increased energy efficiency, and models for sustainable manufacturing are reviewed. The lean-energy paradigm is applied to identify energy efficiency opportunities in industrial electrical, lighting, space conditioning, motor drive, compressed air, process heating, process cooling, and combined heat and power systems. Prerequisite(s): Thermodynamics MEE 310 and Heat Transfer MEE 410.

MEE 579. Cmptr Aided Mech Des. 3 Hours

COMPUTER AIDED MECHANICAL DESIGN - Introduction to computer methods used to facilitate mechanical design. Design using the finite element method, mechanism design, and statistical techniques. Design of components (shafts, springs, etc.) using computer techniques will be combined with the design process to design mechanical systems. Integration of manufacturer's literature into the design. Team design project will be included. Prerequisite(s): (MEE 427, MEE 432) or equivalent.

MEE 580. SPC w/Feedbck Adjust. 3 Hours

STATISTICAL PROCESS CONTROL BY FEEDBACK ADJUSTMENT - Process monitoring using standard quality control techniques provides an ongoing check on the stability of the process and points to problems whose elimination can reduce variation and permanently improve the system. Process adjustment uses feedback control to compensate for those sources of drifting variation that cannot be eliminated in this way. Clearly the two approaches are complementary and considerable advantage is to be gained by augmenting the more commonly used quality control techniques with feedback methods. Prerequisite(s): Background in statistics or permission of instructor.

MEE 582. Automated Design. 3 Hours

AUTOMATED DESIGN - Examine, discuss, and apply enabling design technologies, methodologies and computer tools to various mechanical product design and manufacturing process design projects. Address selected design topics and how they are used in Product Development Cycle. Model, simulate, and evaluate various mechanical products and manufacturing process designs.

MEE 584. Intrgrtd Manufac Sys. 3 Hours

INTEGRATED MANUFACTURING SYSTEMS - Treatment of topics associated with the design, implementation, planning and control of fixed and flexible manufacturing and assembly systems in conjunction with communications and computer technologies. Discuss issues associated with group technology and systems integration.

MEE 585. Design-Producibilty. 3 Hours

DESIGN FOR PRODUCIBILITY - Concurrent treatment of product design and manufacturing process issues. Application of various methodologies, tools, and evaluation schemes on various product design, manufacturing, and assembly-related activities.

MEE 587. Lean Manufacturing. 3 Hours

LEAN MANUFACTURING - Introduction to lean manufacturing and waste elimination. Dynamics of team formation: participation, leadership, communication, and conflict resolution. Concepts of work standardization. Process flow mapping techniques. Setup reduction: reduction of cycle time and inventory in manufacturing operations. Design of lean manufacturing work cells: basic work motions, applied ergonomics, and time studies. Just-in-time. Pull production: Kanbans and their effect on reducing inventory and lead-time. Error proofing: error detection, feedback, corrective and preventive actions. Value added vs. non-value added analysis. Prerequisite(s): MEE 344 or equivalent.

MEE 590. Spec Prob Mech Eng. 1-6 Hours

SPECIAL PROBLEMS IN MECHANICAL ENGINEERING - Special assignments in mechanical engineering subject matter to be approved by the student's faculty advisor and the department chair.

MEE 595. MEE Engineering Proj. 1-6 Hours

SPECIAL PROBLEMS IN MECHANICAL ENGINEERING - 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.

MEE 599. MEE Thesis. 1-6 Hours

MEE THESIS MEE - Thesis.

MEE 604. Nanostructured Mat. 3 Hours

NANOSTRUCTURED MATERIALS - Graduate-level course covering the fundamental physics, properties, and applications of nanostructured materials. Includes carbon nanotubes, nanostructured ceramics, metals, and semiconductor materials. Prerequisite(s): College physics; fundamental physical and chemical properties of materials.

MEE 605. Intr Crbn Nantchnlgy. 3 Hours

INTRODUCTION TO CARBON NANOTECHNOLOGY - Graduate-level course covering the fundamental and applied aspects of Carbon Nanoscale Science and Technology. The course has three goals: (1) an overview of the current development in carbon science and technology (2) an introduction to the surface science as a means to understand the surface interaction at molecular scale, and (3) to provide some explicit links between macro, micro, and nano scale technologies. Some of the medical field, structural and friction applications will be addressed. This course is aimed at both science and engineering students.

MEE 690. Selected Readings. 1-6 Hours

SELECTED READINGS IN MECHANICAL ENGINEERING - Directed readings in a designated area arranged and approved by the student's doctoral advisory committee and the department chair. May be repeated. (A) Materials, (B) Thermal Sciences, (C) Fluid Mechanics, (D) Solid Mechanics (E) Mechanical Design, or (F) Integrated Manufacturing.

MEE 698. De Dissertation. 1-15 Hours

D.E. DISSERTATION - An original investigation as applied to mechanical engineering practice. Results must be of sufficient importance to merit publication.

MEE 699. PHD Dissertation. 1-15 Hours

PHD DISSERTATION - An original research effort which makes a definite contribution to technical knowledge. Results must be of sufficient importance to merit publication.

Renewable and Clean Energy

Kelly Kissock, Department Chairperson

Master of Science in Renewable and Clean Energy

The program of study leading to the Master of Science in Renewable and Clean Energy Engineering degree, developed by the student in conjunction with her/his advisor, must include a minimum of 30 semester hours. The program of study must include 18 or more semester hours of RCL or MEE coursework and a minimum of 3 semester hours of mathematics. The program accepts courses taken at DAGSI partner universities, Wright State University and the Air Force Institute of Technology. At least one-half of the courses must be taken at the University of Dayton. Students may pursue a thesis or non-thesis option. A thesis option would include 6 semester hours of RCL 599 - Master Thesis coursework, which includes both an oral defense and a written thesis.

See also Master's Degree Requirements in School of Engineering section in the bulletin and consult with the advisor.

Courses

RCL 507. Matls Adv Enrg Apps. 3 Hours

MATERIALS ADVANCED ENERGY APPS - Various advanced energy technologies (AMTEC, Fuel Cells, Thermoelectrics, Nuclear, etc.) will be discussed with an emphasis on the role that materials have/will play in their development. Critical 'bottlenecks' in materials development delaying the introduction of new advanced energy systems will be identified. In addition, how material selections are made based on operational system environments in 'real world' scenarios will be presented.

RCL 511. Adv Thermodynamics. 3 Hours

ADVANCED 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.

RCL 524. Electrochemical Power. 3 Hours

ELECTROCHEMICAL POWER - The course will cover fundamental as well as engineering aspects of fuel cell technology. Specifically, the course will cover basic principles of electrochemistry, electrical conductivity (electronic and ionic) of solids, and development/design of major fuel cells (alkaline, polymer electrolyte, phosphoric acid, molten carbonate, and solid oxide). A major part of the course will focus on solid oxide fuel cells (SOFC), as it is emerging to be dominant among various fuel cell technologies. The SOFC can readily and safely use many common hydrocarbon fuels such as natural gas, diesel, gasoline, alcohol, and coal gas. Prerequisite(s): (MEE 301, MEE 312) or permission of instructor.

RCL 533. Biofuel Prod Procs. 3 Hours

BIOFUEL PRODUCTION PROCS - This course will provide an overview of the range of fuels derived from biological materials and processes, with a focus on anaerobic digestion, bioethanol and biodiesel and production of synthetic fuel from biological materials. The course will include an overview of the biochemistry of energy production in biological systems, discussions of the economics and environmental sustainability of biofuels, and a review of reactor and separation systems concepts relevant to biofuel production. Prerequisite(s): EGR 202, CHM 123, or consent of instructor.

RCL 550. RCL Project. 1-6 Hours

RENEWABLE AND CLEAN ENERGY PROJECT - Student participation in an energy related 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.

RCL 568. Internl Combust Engr. 3 Hours

INTERNAL COMBUSTION ENGINES - Study of combustion and energy release processes. Applications to spark and compression ignition, jet, rocket, and gas turbine engines. Special emphasis given to understanding of air pollution problems caused by internal combustion engines. Idealized and actual cycles are studied in preparation for laboratory testing of internal combustion engines.

RCL 569. Energy Effcnt Bldgs. 3 Hours

ENERGY EFFICIENT BUILDINGS - Provides knowledge and skills necessary to design and operate healthier, more comfortable, more productive, and less environmentally destructive buildings; A specific design target of E/3 (typical energy use divided by three) is established as a goal. Economic, thermodynamic, and heat transfer analyses are utilized. Extensive software development. Prerequisite(s): MEE 410.

RCL 571. Desgn of Thermal Sys. 3 Hours

DESIGN OF THERMAL SYSTEMS - Integration of thermodynamics, heat transfer, engineering economics, and simulation and optimization techniques in a design framework. Topics include design methodology, energy analysis, heat exchanger networks, thermal-system simulation, and optimization techniques.

RCL 572. Desgn for Environmnt. 3 Hours

DESIGN FOR ENVIRONMENT - Emphasis on design for environment over the life cycle of a product or process, including consideration of mining, processing, manufacturing, use, and post-life stages. Course provides knowledge and experience in invention for the purpose of clean design, life cycle assessment strategies to estimate the environmental impact of products and processes, and cleaner manufacturing practices. Course includes a major design project.

RCL 573. Renewable Energy Sys. 3 Hours

RENEWABLE ENERGY SYSTEMS - Introduction to the impact of energy on the economy and environment. Engineering models of solar thermal and photovoltaic systems. Introduction to wind power. Fuel cells and renewable sources of hydrogen. Corequisite(s): MEE 410 or equivalent.

RCL 578. Energy Eff Manufact. 3 Hours

ENERGY EFFICIENT MANUFACTURING - This course presents a systematic approach for improving energy efficiency in the manufacturing sector. Current patterns of manufacturing energy use, the need for increased energy efficiency, and models for sustainable manufacturing are reviewed. The lean-energy paradigm is applied to identify energy efficiency opportunities in industrial electrical, lighting, space conditioning, motor drive, compressed air, process heating, process cooling, and combined heat and power systems. Prerequisite(s): EGR 202, MEE 410.

RCL 583. Adv Photovoltaics. 3 Hours

ADV PHOTOVOLTAICS - This theoretical course will cover science and applications of photovoltaics, with special emphasis on inorganic and organic semiconductors, ferroelectrics, chalcopyrites, metamaterials, and quantum structures. Prerequisite(s): ECE 506 or permission of instructor.

RCL 590. Spec Probs in RCL. 1-6 Hours

SPECIAL PROBLEMS IN RENEWABLE AND CLEAN ENERGY - Special problems in a designated area of energy systems arranged and approved by the student's faculty advisor and the departmental chair.

RCL 595. RCL Project. 1-6 Hours

RCL PROJECT - Student participation in an energy related 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.

RCL 599. RCL Thesis. 1-6 Hours

RENEWABLE AND CLEAN ENERGY THESIS - Original research in energy systems which makes a definite contribution to technical knowledge. Results must be of sufficient importance to merit publication.

International Marian Research Institute

- Master's Degree in Theological Studies
- Certificate in Marian Studies
- Certificate in Marianist Studies

Dr. Jason Bourgeois
Fr. Bertrand A. Buby, S.M.
Fr. Thomas Buffer
Sr. Celia Chua, M.I.C.
Dr. Gloria Falcão Dodd
Mr. Michael Duricy
Fr. David Fleming, S.M.
Dr. Deyanira Flores
Sr. M. Jean Frisk, S.S.M.
Fr. François Rossier, S.M.
Fr. Johann G. Roten, S.M.
Fr. Thomas A. Thompson, S.M.
Fr. Denis Vincent Wiseman, O.P.

Founded by the Marianists of the University of Dayton, the Marian Library/International Marian Research Institute has the universal mission to make the Virgin Mary, Mother of Jesus Christ, better known, loved, and served. This global, scholarly, and pastoral privilege is fulfilled above all through the operation of the Marian Library, founded in 1943 and today recognized as the world's largest and most comprehensive collection of printed materials on the Blessed Virgin Mary, as well as through the International Marian Research Institute (IMRI).

The International Marian Research Institute was established in 1975 at the University of Dayton in affiliation with the Pontifical Theological Faculty *Marianum* in Rome. IMRI offers a graduate program from the *Marianum* leading to a Licentiate of Sacred Theology (S.T.L.) and a Doctorate of Sacred Theology (S.T.D.). The program is accredited by the *Marianum* and approved by the Congregation for Catholic Education at the Vatican. Presently there are only two places in the world, Rome and Dayton, where students can earn the Licentiate of Sacred Theology (S.T.L.) and the Doctorate of Sacred Theology (S.T.D.) with specialization in Mariology.

PONTIFICAL DEGREES (S.T.L./S.T.D.)

As an American affiliate of the Pontifical Faculty of Theology *Marianum*, our academic program is empowered to offer courses leading to the STL and STD degrees. Such programs of study are governed by the rules and directives issued by the Sacred Congregation for Catholic Education, and their application by the *Marianum*.

MASTER'S DEGREE IN THEOLOGICAL STUDIES

The University of Dayton offers in joint venture with the IMRI a master's degree in Theological Studies with a Marian concentration. The concentration in Marian Studies is available for those who take a minimum of twelve hours up to a maximum of sixteen hours of specially designated courses in Marian disciplines.

CERTIFICATE IN MARIAN STUDIES

A Certificate Program is available for qualified students who do not wish to pursue the full rigors of the STL/STD courses of study, or who may be lacking in some of the basic requirements for admission into these programs. The Certificate Program involves basic courses (thirty-six

quarter credits) giving a broad foundation in the study of Mariology and the writing of a research paper or project. The research paper (thirty pages) is elaborated under the direction of a moderator and must be original.

The Certificate Program is available as a guided studies program. The suggested time frame for the completion of the program is two to four years.

CERTIFICATE IN MARIANIST STUDIES

The Marianist Studies Program is open especially to Marianists, their affiliates, and to all those interested in learning more about the Marianist religious heritage. This program (thirty-six quarter credits) involves basic coursework giving a broad foundation in the study of Mariology, specialized coursework in the Marianist religious heritage, and the writing of a research paper (thirty pages) or project on a topic related to the Marianist religious heritage.

The certificate program in Marianist Studies is available as a guided studies program. The suggested timeframe for the completion of the program is two to four years.

Introductory Courses

MRI 600	Intro Cont Mariology	1
MRI 601	Research & Biblio	1
MRI 602	Methods in Theology	1
MRI 603	Monographic Studies	1

Core Courses

MRI 610	Mary and Old Test	3
MRI 611	Mary in New Test	3
MRI 612	Mary and Apocrypha	3
MRI 620	Christ in Patristics	3
MRI 621	Church in Patristics	3
MRI 622	Mary in Patristics	3
MRI 625	Mary in Medieval I	3
MRI 626	Mary in Medieval II	3
MRI 627	Mary in Modern I	3
MRI 628	Mary in Modern II	3
MRI 629	Mary in Contemp I	3
MRI 630	Mary in Contemp II	3
MRI 631	Marian Doctrine	3
MRI 632	Marian Spirituality	3
MRI 633	Mary in Liturgy	3
MRI 634	Mary and Church	3
MRI 636	Mary and Ecumenism	3
MRI 638	Mary&TheolgAnthrplog	3
MRI 640	Ecclesiology	3
MRI 641	Christology	3
MRI 642	Spirituality	3

Special Courses

MRI 639	Thomas Aquins & Sprt	1
MRI 650	Special Marian Topic	1
MRI 652	Monographic Studies	1
MRI 654	Mary in Art	1
MRI 656	Mary in Music	1
MRI 658	Mary in Literature	1
MRI 660	Mary in Catechesis	1

MRI 662	Mary and the Holy Land	1
MRI 664	Mary and Human Sci	1
MRI 665	Mary and Social Hst	1
MRI 668	Philosophy	3
MRI 691	Mary in Asian Spir	1
MRI 694	Mary in Media	1
MRI 700	Year of Faith Symp	2
Dissertation		
MRI 790	Dissertation Guidance	12
Marianist Courses		
MRI 670	Chaminade and Mary	3
MRI 671	Chaminade on Mary	3
MRI 672	Hst Marianist Spir	3
MRI 673	Adele's Spirituality	3

Courses

MRI 600. Intro Cont Mariology. 1 Hour

INTRODUCTION TO MARIOLOGY - Designed for students who are new to the program or who simply have an interest in Mariology, this course explores the basic Marian issues within the framework of contemporary theology and emphasizes the major developments in Mariology since Vatican II.

MRI 601. Research & Biblio. 1 Hour

RESEARCH & BIBLIOGRAPHY - This course introduces students to the resources and bibliography for theological studies, with attention to research in Mariology. It offers suggestions for organization and information management.

MRI 602. Methods in Theology. 1 Hour

METHODS IN THEOLOGY - This course deals with various methods used in the study of contemporary theology. It points to their specific focus and philosophical foundation, as well as to advantages and limitations. Their application to research in Mariology will be examined.

MRI 603. Monographic Studies. 1 Hour

MONOGRAPHIC STUDY OF MARIAN TEXT - This course leads the student to the understanding of Marian texts of various periods, genres, literary styles, and contents. The focus of this course will be a guided reading of *The Hail Mary: A Verbal Icon of Mary* by Nicholas Ayo.

MRI 610. Mary and Old Test. 3 Hours

MARY AND THE OLD TESTAMENT - This course studies the principal Old Testament texts with reference to the history of salvation. A special emphasis will be given to the Protoevangelium, symbols and types such as New Eve, Hannah, Daughter of Zion, Ark of the Covenant, etc. The course will further show the impact that some of these symbols and figures had on the New Testament and the apocryphal literature.

MRI 611. Mary in New Test. 3 Hours

MARY IN THE NEW TESTAMENT - Study of the principal New Testament texts with reference to Mary as person, as Mother of the Redeemer, as figure of the Church, and associate of Christ in the history of salvation.

MRI 612. Mary and Apocrypha. 3 Hours

MARY AND THE APOCRYPHA - Study of the place and role of Mary in the apocryphal literature of the Old and New Testament, this course prepares students for the understanding of Marian symbols and topics in devotion, religious culture, and art.

MRI 620. Christ in Patristics. 3 Hours

CHRIST IN PATRISTICS - Study of selected patristic texts regarding the person and redemptive work of Christ.

MRI 621. Church in Patristics. 3 Hours

CHURCH IN PATRISTICS - Study of selected patristic texts regarding the Church as instrument and sacrament of salvation.

MRI 622. Mary in Patristics. 3 Hours

MARY IN PATRISTICS - Study of initial developments of Marian doctrine and devotion in Greek, Latin, and Oriental patristics.

MRI 625. Mary in Medieval I. 3 Hours

MARY IN THE MEDIEVAL PERIOD I - Study of the development of Mariology from the 7th century to the 12th century: Marian doctrines, Marian devotions, Mary in art and liturgy, Marian feasts, and principal Marian literary works.

MRI 626. Mary in Medieval II. 3 Hours

MARY IN THE MEDIEVAL PERIOD II - Study of the development of Mariology from the 12th century to the Renaissance: Marian doctrines, Marian devotions, Mary in art and liturgy, Marian feasts, and principal Marian literary works.

MRI 627. Mary in Modern I. 3 Hours

MARY IN THE MODERN PERIOD I - Developments in Marian devotion, liturgy, and doctrine are traced from the late medieval period, through the Reformation, Tridentine, Counter Reformation and the Baroque periods, as well as in the Byzantine writers, the early missionary movement, Jansenism, and the French School of Spirituality.

MRI 628. Mary in Modern II. 3 Hours

MARY IN THE MODERN PERIOD II - Developments in Marian devotion, liturgy, and doctrine traced through the 18th century Enlightenment, the French Revolution and the Catholic Restoration, as well as the 19th century theologians (Newman, Scheeben, Terrien), the Scholastic revival, the Mariological Movement, the dogma of the Immaculate Conception, and the significance of the Marian Apparitions.

MRI 629. Mary in Contemp I. 3 Hours

MARY IN CONTEMPORARY PERIOD I - Study of the development in Marian doctrine, devotion, and culture from the beginning of the 20th century to the eve of the Second Vatican Council.

MRI 630. Mary in Contemp II. 3 Hours

MARY IN THE CONTEMPORARY PERIOD II - Study of the teaching of Vatican II about the Blessed Virgin Mary, especially in chapter VIII of *Lumen Gentium* and its implications and developments in contemporary Marian doctrine and devotion. The study includes magisterial pronouncements, theological reflection, and historical developments in Marian thinking since Vatican II.

MRI 631. Marian Doctrine. 3 Hours

MARIAN DOCTRINE - Historical, theological, and anthropological study of the principal Marian doctrines: Divine maternity, Virginity, Immaculate Conception, and Assumption. Special emphasis is given to the meaning and importance of dogma, as well as to the study of the question of Mary's spiritual maternity, intercession, and mediation.

MRI 632. Marian Spirituality. 3 Hours

MARIAN SPIRITUALITY - This course studies the various historical expressions and methods of Marian spirituality, Mary's role as model of Christian spirituality and devotion, her virtues, and her active presence in the life of the Church and that of the faithful.

MRI 633. Mary in Liturgy. 3 Hours

MARY IN THE LITURGY - This course studies the importance and significance of Mary's presence in the mysteries of Jesus Christ celebrated throughout the liturgical year as well as their influence on Marian doctrine, spirituality, and devotion through the centuries.

MRI 634. Mary and Church. 3 Hours

MARY AND THE CHURCH - Not the least of Vatican II's merits was to point out Mary's place at the heart of the Church. In reassessing the Mary-Church relationship the Council retrieved a Patristic theme of great importance. This course attempts to explore the Mary-Church theme from both a historical and doctrinal point of view. It will also highlight some pastoral aspects.

MRI 636. Mary and Ecumenism. 3 Hours

MARY IN ECUMENISM - This course proposes the study of Mary and her place in the Church and related questions as seen by the various Christian and other religious traditions.

MRI 638. Mary & Theology & Anthropology. 3 Hours

MARY AND THEOLOGY AND ANTHROPOLOGY - This course presents an anthropological approach to the understanding of Mary and examines its challenges and limitations in light of a theological study of the human person as paradox and mystery. Special emphasis is given to the relationship between theological anthropology and Marian dogmas.

MRI 639. Thomas Aquinas & Spirit. 1 Hour

THOMAS AQUINAS AND SPIRITUALITY - Thomas Aquinas provides a theological infrastructure for Christian spiritualities and the spiritual lives of Christians. In this course, we will consider Thomas' principles as they apply to spirituality, such as his Trinitarian thrust, his positive conception of human nature with a holistic approach to the body/soul unity, his recognition of the value of the emotions, his virtue-based morality, etc.

MRI 640. Ecclesiology. 3 Hours

ECCLESIOLOGY - While giving special attention to the writings of major theologians regarding their understanding of the Church, this course also studies recent developments in African, Asian, Latin American and North Atlantic ecclesiologies. It will discuss the relationship between the Church as mystery and historical reality.

MRI 641. Christology. 3 Hours

CHRISTOLOGY - Study of the scriptural foundations, the doctrinal developments and accompanying theological reflection about Jesus Christ's person and mission. Various christological developments of recent times are examined as to their doctrinal content and pastoral significance.

MRI 642. Spirituality. 3 Hours

SPIRITUALITY - Study of historical and systematic aspects of Christian spirituality, this course includes the presentation of various schools of spirituality, with special emphasis on the French School of spirituality. It also attempts an evaluation of contemporary trends in spirituality.

MRI 650. Special Marian Topic. 1 Hour

SPECIAL MARIAN TOPICS - Study of a particular contemporary Marian topic or question: Marian apparitions, Mary and Feminism, Mary and Liberation Theology, etc.

MRI 652. Monographic Studies. 1 Hour

MONOGRAPHIC STUDIES - Detailed study of the Marian writings of a father or doctor of the Church or of a modern writer.

MRI 654. Mary in Art. 1 Hour

MARY IN ART - Study of the place of Mary in art with a concentration on specific themes or periods.

MRI 656. Mary in Music. 1 Hour

MARY IN MUSIC - Study of the place of Mary in music with a concentration on specific themes or periods.

MRI 658. Mary in Literature. 1 Hour

MARY IN LITERATURE - Study of the place of Mary in literature with a concentration on specific themes or periods.

MRI 660. Mary in Catechesis. 1 Hour

MARY'S PLACE IN CONTEMPORARY CATECHETICS - Study of Mary's place in the Catechism of the Catholic Church, catechetical directives, and in textbooks as well as pastoral tools.

MRI 662. Mary and the Holy Land. 1 Hour

MARY AND THE HOLY LAND - Study of the history, geography, and archeology relevant to Mary's life and Marian tradition.

MRI 664. Mary and Human Sci. 1 Hour

MARY AND THE HUMAN SCIENCES - Study of sociological and psychological aspects of Marian culture and their impact on religious behavior and values.

MRI 665. Mary and Social Hst. 1 Hour

MARY AND SOCIAL HISTORY - This course examines Mary's place in some aspects of social history. Mary's cultural role is undisputed. Thus, how did her person and mission influence social history? What was her role in the history of ideas, of laws and customs, values, and fashion? Where and how is the impact of her presence noticeable? How does the Church deal with it?

MRI 668. Philosophy. 3 Hours

PHILOSOPHY - Graduate level Philosophy in logic, epistemology, rational psychology, and/or metaphysics as prerequisite to degree program.

MRI 670. Chaminade and Mary. 3 Hours

CHAMINADE AND MARY - By using selected texts, this course investigates Fr. William Joseph Chaminade's spiritual development and method. Special attention is given to the Marian dimension of his spirituality and apostolic method.

MRI 671. Chaminade on Mary. 3 Hours

CHAMINADE ON MARY - Study of Chaminade's teachings on Mary contrasted with those of his contemporaries, writers of the 17th and 18th centuries, as well as earlier Christian sources.

MRI 672. Hst Marianist Spir. 3 Hours

HISTORY OF MARIANIST SPIRITUALITY - Based on the spiritual charism of William Joseph Chaminade, this course attempts to trace the history of the Chaminadean charism up to the present, taking into consideration its various theological, corporate, and cultural expressions.

MRI 673. Adele's Spirituality. 3 Hours

ADELE'S SPIRITUALITY - By using selected texts, this Marianist studies course investigates Adele de Trenquelleon's spiritual development, apostolic method, and pastoral outreach.

MRI 691. Mary in Asian Spir. 1 Hour

MARY IN ASIAN SPIRITUALITY - Asian religions and philosophies have had great impact on Christianity. This course attempts to situate Mary's place and role in a fruitful exchange between religions and the Christian message.

MRI 694. Mary in Media. 1 Hour

MARY IN THE MEDIA - This course attempts to assess Mary's place in the electronic media. News reports and websites with Marian themes from around the world will be shown and critiqued in light of Catholic teaching on the mass media.

MRI 700. Year of Faith Symp. 2 Hours

IMRI - students will receive 2 quarter credits for attending and participating in this event.

MRI 790. Dissertation Guidance. 12 Hours

DISSERTATION GUIDANCE - Doctoral students register for 12 credits of dissertation guidance.

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