2013-2014 GRADUATE BULLETIN
### Calendar 2013-2014

#### Fall Semester 2013
- Day and evening classes begin: Mon., Aug. 26
- *Labor Day (day and evening): Mon., Sept. 2
- Fall Graduation Application Due: Tues., Oct. 1
- Preliminary Dissertation Deadline: Mon., Oct. 21
- Preliminary Thesis Deadline: Mon., Nov. 4
- Veterans Day (classes held; staff holiday): Mon., Nov. 11
- Final Thesis/Dissertation Deadline: Mon., Nov. 18
- **Thanksgiving Break: Thu.-Sun., Nov. 28-Dec. 1
- Classes resume: Mon., Dec. 2
- Final instructional day: Sun., Dec. 8
- Final examination period: Mon.-Sun., Dec. 9-15
- Commencement: Fri.-Sat., Dec. 13-14
- Winter Recess: Mon.-Sun., Dec. 16-Jan. 12

#### Spring Semester 2014
- Day and evening classes begin: Mon., Jan. 13
- *Martin Luther King Day: Mon., Jan. 20
- *Presidents' Day: Tue., Feb. 18
- Spring Graduation Application Deadline: Sat., Mar. 1
- Preliminary Dissertation Deadline: Mon., Mar. 10
- Spring Break: Mon.-Sun., Mar. 24-Mar. 30
- Classes resume: Mon., Mar. 31
- Preliminary Thesis Deadline: Mon., Mar. 24
- Final instructional day: Sun., May 4
- Final examination period: Mon.-Sun., May 5-May 11
- Commencements: Fri.-Sun., May 9-11
- School of Law Commencement: Sun., May 18

#### Summer Sessions 2014
- Intersession begins: Mon., May 19
- *Memorial Day: Mon., May 26
- Summer Graduation Application Deadline: Sun., Jun. 1
- Intersession ends: Sun., Jun. 8
- Five Week I and Eight Week Sessions begin: Mon., Jun. 9
- Preliminary Dissertation Deadline: Mon., Jun. 16
- *Independence Day: Fri., Jul. 4
- Preliminary Thesis Deadline: Mon., Jun. 30
- Five Week I ends: Sun., Jul. 13
- Five Week II begins: Mon., Jul. 14
- Eight Week ends: Sun., Aug. 3
- Five Week II ends: Sun., Aug. 17
- Summer Commencement: Sat., Aug. 16

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*Classes cancelled (day and evening)
**Classes cancelled from Wednesday at 5 p.m. through Monday at 6:45 a.m.

### Inquiries
Address inquiries concerning:

- Graduate study to the Graduate School, The University of Akron, OH 44325-2101. 330-972-7663.
- Student employment to the Career Center, The University of Akron, OH, 44325-4306. 330-972-7747.
- Athletics to the Athletic Director, The University of Akron, OH 44325-5201. 330-972-7080.
- Registration, records, graduation, scheduling, Ohio residency requirements, and military services to the Office of the Registrar, The University of Akron, OH 44325-6208. 330-972-8300.
- Undergraduate admissions information and campus tours to the Office of Admissions, The University of Akron, OH 44325-2001. 330-972-7077 or toll-free inside Ohio, 1-800-655-4884.
- The University switchboard number is 330-972-7111.

### University Closing Policy
The safety of students, faculty, and staff is the University’s highest priority. When severe weather is predicted or when emergencies arise, the president or designee will determine when conditions necessitate closing or canceling classes at the entire University or any of its specific units.

The president or designee will make a decision to close based on the recommendations from:

- University police, safety and facilities personnel, who will be checking the condition of campus sidewalks and parking lots.
- City and county law enforcement agencies, who will report on road conditions on highways and roads in areas surrounding the University.
- The Ohio State Patrol and County Sheriff, who may issue advisories related to weather.
- Additional sources as needed.

Closing information will be announced as early and as simply as possible. This information will be relayed to students in several ways:

- **Radio and TV:** Closing information will be provided to major radio and television stations in Akron, Canton, and Cleveland.
- **On the Web:** Closing information will be posted on the University’s homepage at www.uakron.edu and on MyAkron at https://my.uakron.edu.
- **E-mail:** A message will be sent to students’ and employees’ University mailboxes.
- **Text messaging:** A message will be sent to anyone who subscribes to our Z-Alert text messaging service. Learn more about it at http://www.uakron.edu/info/z-alert.php.
- **By phone:** The University’s emergency information phone line is updated around the clock as conditions warrant. The number is 330-972-SNOW or 330-972-6238 (TDD/Voice).

University colleges and departments are encouraged to establish a method for communicating the closing decision to department personnel.

### Disclaimer
While every effort is made to provide accurate and up-to-date information, the University reserves the right to change, without notice, statements in the Bulletin series which include, but are not limited to rules, policies, procedures, fees, curricula, courses, programs, activities, services, schedules, course availability, or other matters. For example, programs may be modified due to limited resources or facilities, unavailability of faculty, insufficient enrollment, or such other reasons as the University deems necessary.
Important Phone Numbers

University Area Code (330)

All phone numbers are subject to change without notice.
For numbers not listed, call the University Switchboard 330-972-7111.
General Campus Information Center 330-972-INFO (4636)

Graduate School
Vice President for Research, & Dean, Graduate School
Dr. George R. Newkome ........................................ 972-6458
Associate Dean, Graduate School
Dr. Mark B. Tausig ........................................ 972-7664
Senior Executive Administrative Assistant
Ms. Linda Smith ........................................ 972-6458
Administrative Assistant Senior
Ms. Heather A. Blake ........................................ 972-7664
Director, McNair Scholars Program
Dr. Heather E. Burton ........................................ 972-2135
Coordinator, Graduate Student Financial Aid
Mrs. Karen L. Caldwell ........................................ 972-5858
Student Services Counselor
Ms. Elizabeth Markovich Crutchley ........................................ 972-5858
Manager, Graduate Admissions
Ms. Theresa M. McCune ........................................ 972-8233
Student Services Counselor
Mrs. Leanne McNicholas ........................................ 972-5169
Student Services Counselor
Mrs. Megan Richardson ........................................ 972-5296

Graduate School World Wide Web Location
Graduate School Homepage .................................................. http://www.uakron.edu/gradsch/
Graduate School E-mail .................................................. gradsch@uakron.edu

Colleges
Buchtel College of Arts and Sciences ........................................ 972-7880
College of Business Administration ........................................ 972-7041
College of Education .................................................... 972-6970
College of Engineering .................................................... 972-7816
College of Health Professions .................................................... 972-7552
College of Polymer Science and Polymer Engineering ........................................ 972-7500
NEOMED (Northeast Ohio Medical University) .................................................... 325-2511
The University of Akron–Wayne College .................................................... 1-800-221-8308
Summit College ...................................................... 972-7220
University College ...................................................... 972-7066

Other Offices
Accessibility, Office of .................................................. 972-7928
TTY/TDD ...................................................... 972-5764
Buchtelite, The (student newspaper) .................................................... 972-7919
Career Center ...................................................... 972-7747
Student Employment ...................................................... 972-7405
Work Study ...................................................... 972-8074
Center for Child Development .................................................... 972-8210
English Language Institute .................................................. 972-7544
Financial Aid, Office of Student .................................................... 972-7032
Scholarships (non-University) .................................................... 972-6368
Scholarships (University) .................................................... 972-6388
Toll-Free ...................................................... 1-800-621-3947
Health Services, Student .................................................. 972-7808

International Programs .................................................. 972-6349
Immigration (Prospective Students) .................................................... 972-6740
Immigration (Current Students) .................................................... 972-6296
J-1 Scholars/SEVIS .................................................. 972-8391
Libraries, University
Bierce Library ...................................................... 972-8161
Law Library ...................................................... 972-7330
Science and Technology Library .................................................... 972-7195
University Archives ...................................................... 972-7670
Military Services Coordinator and Counselor .................................................... 972-7838
Off-Campus Student Services .................................................... 972-5500
Ohio Residency Officer ..................................................... 972-8638
Pan-African Culture and Research Center .................................................... 972-7030
Parking Services ...................................................... 972-7213
Peer Counseling Program ..................................................... 972-8288
Photocopying
DocuZip (Student Union) .................................................. 972-7870
Polsky Building ...................................................... 972-2043
Registrar, Office of the University ..................................................... 972-8300
Registration, records, graduation, scheduling, transcripts, enrollment and degree verification, Ohio residency, and military services
Residence Life and Housing .................................................. 972-7800
Student Affairs, Vice President for .................................................. 972-7874
Student Judicial Affairs ...................................................... 972-6380
Student Services Center ..................................................... 972-7272
Student Union
Information Center ..................................................... 972-INFO (4636)
Reservation Line ...................................................... 972-8689
Tours (of the University) ..................................................... 972-7077
WZIP-FM Radio Station ..................................................... 972-7105
Zip Programming Network .................................................... 972-7014

Emergency Phone Numbers
Police/Fire/EMS .................................................. 911
Police (non-emergency) ..................................................... 972-7123
Campus Patrol ...................................................... 972-7263
University Switchboard ..................................................... 972-7111
Closing Information ..................................................... 972-SNOW (7669)
SECTION 1. Background

HISTORY

The connection between The University of Akron and its surrounding community has been a recurring theme in its history. The institution was founded as a small denominational college in 1870 and has grown to its current standing as a major, metropolitan, state-assisted institution of higher education. The University, now considered significant in the fields of science, engineering, education, law, business, and health, is home to more than 20,000 students and 2,000 faculty and staff members. The University is proud of its long-standing commitment to diversity and inclusion, and is committed to providing a world-class education to all students.

The University of Akron is a publicly assisted metropolitan institution, striving to develop enlightened members of society. It offers comprehensive programs of instruction from associate through doctoral levels; pursues a rigorous agenda of research in the arts, sciences and professions; and provides service to the community. The University pursues excellence in undergraduate and graduate education, and distinction in selected areas of graduate instruction, inquiry, and creative activity.

MISSION STATEMENT

The University of Akron, a publicly assisted metropolitan institution, strives to develop enlightened members of society. It offers comprehensive programs of instruction from associate through doctoral levels; pursues a rigorous agenda of research in the arts, sciences and professions; and provides service to the community. The University pursues excellence in undergraduate and graduate education, and distinction in selected areas of graduate instruction, inquiry, and creative activity.

CHARTING THE COURSE

Today, the University stands on the threshold of a fundamental shift in thinking and a sweeping recommitment of institutional talents, energies and resources toward attaining even greater excellence. The blueprint for change is “Charting the Course,” an ongoing and dynamic process of strategic thinking that begins with the University’s fundamental strategies and builds to where the institution envisions itself in the future.

Objective and documented excellence tells us that The University of Akron is already the leading public university in northern Ohio and signals a clear promise and destiny. We have framed our vision as a Statement of Strategic Intent.

The University of Akron intends to be recognized as the public research university for Northern Ohio.

The recognition will be gained by building upon the documented excellence that has enabled the University to achieve its present high level of achievement, and by strategic investments, partnerships and initiatives.

The University will continue to build a leadership position in information technology—to better prepare our students for today’s technologically advanced knowledge economy, to make learning more accessible and dynamic, and to increase the effectiveness of the University’s planning and operations.

We will attain technological and programmatic excellence throughout the University by taking full advantage of our metropolitan setting and long-standing relationships with area business and industry. We will act decisively to form and optimize strategic partnerships that will benefit our students and our community.

Enabling student success will continue to be the hallmark of The University of Akron. We recognize, importantly, that students are the responsibility of all of us at the University. We will work to strategically shape and determine the quality, diversity and size of our student body. And, we will strive to offer students the chance to apply what they are learning in the classroom through hands-on research, service, internships, cooperative education or similar opportunities.

Vision 2020

In 2012, The University of Akron Board of Trustees gave its unanimous support to a new strategic plan called Vision 2020. The year 2020 is the 150th anniversary of the founding of the University of Akron, and the plan calls for bold initiatives and significant growth, including:

- Building on Charting the Course accomplishments, reach a $1 billion investment in student programs, faculty, research, campus and community.
- A more than 30 percent increase in enrollment from the current 30,000 to 40,000 learners, including growth of students in and out of state, international students, and e-learners.
- $200 million commitment to annual research expenditures, including hiring 160 new faculty and staff.

Enabling student success will continue to be the hallmark of The University of Akron.
• Launching The Akron Experience, a new initiative that provides every student with a unique in-and-out-of-the-classroom learning experience to strengthen the connection between campus and community.

• New criteria for enrollment and targeted learning pathways for each student to increase retention, graduation, and job placement rates.

Our Mission - To ensure student success and leverage our region’s unique assets in the creation of knowledge and application of research that benefits humankind.

Our Vision - To send a new standard for public research universities in adding economic value and enriching lives.

A CIVIL CLIMATE FOR LEARNING: Statement of Expectations

The University of Akron is an educational community of diverse peoples, processes, and programs. While all of us have our individual backgrounds, outlooks, values, and styles, we all share certain principles of personal responsibility, mutual respect, and common decency. Our campus culture requires that we maintain and extend these principles, for without them we cannot move as a humane and worthwhile university. To keep ourselves aware of these shared principles, this statement articulates some of the expectations and responsibilities of a civil climate for learning on our campus.

Principles of Our Campus Culture

Our campus culture acknowledges the importance of all in our community for their participation in our common enterprise as a university. We value the contributions we and respect the needs of students, faculty, contract professionals, staff, administrators, maintenance and service personnel, and everyone else whose work and dedication enables us to pursue our individual and collective academic goals. Together we maintain an intellectual culture that is accessible, disciplined, free, safe, and committed to excellence. By our behavior with one another we endorse a culture of diversity, celebrating the uniqueness of the individual and developing our understanding and tolerance of differences in gender, ethnicity, age, spiritual beliefs, sexual orientation, and physical or mental potential. We take our faculty are for sustaining a caring culture, nurturing growth and fulfillment in one another and in the larger communities of which we are a part. We insist on a culture of civility, unity in our rejection of violence, coercion, deceit, or terrorism. We work to increase collaboration, cooperation, and consensus within rational dialogue characterized by mutual respect and consideration. Ours is a responsible culture. We expect each member of our community to contribute responsibly his or her duties for preserving the integrity, quality, and decency of our environment and our discourse.

Expectations and Responsibilities

To preserve and propagate the Culture of The University of Akron, everyone must engage in certain specific behaviors. Anyone new to this campus must be aware of the expectations we have of each other and be committed to fulfilling his/her responsibility in maintaining our culture.

Inside the Classroom

Inside the classroom, faculty are expected to respect the sanctity of the teaching/learning process by honoring their commitment to students in terms of time, fairness, and enthusiasm. It is the responsibility of faculty to set and enforce the classroom rules of conduct. Faculty members are expected to treat men and women, persons of all colors and ethnicities, and persons with varying abilities, spiritual preference, or sexual orientation with equitable respect and consideration. Faculty should value and pursue excellence in teaching as well as research. Faculty shall not engage in sexual or other forms of harassment or engage in inappropriate dual relationships, nor tolerate academic dishonesty or discrimination or harassment from students to other students.

Students are expected to respect the sanctity of the teaching/learning process by expressing respect for the faculty member as the organizer and guide through this learning experience, as well as for fellow students. Disruptive, disrespectful, discriminatory, harassing, violent and/or threatening behavior is explicitly prohibited. Academic dishonesty will not be tolerated. Students are expected to take responsibility for their own learning and, in return, can expect responsible teaching from the faculty member. Students should report unprofessional behavior on the part of faculty members. Students have a right to expect that they will not be sexually otherwise harassed, intimidated, or threatened.

On the Campus

On the campus, everyone is expected to respect and protect the dignity and freedom of each other. There must be the opportunity for expression of all points of view, without name-calling or ridicule. All members of the University are expected to be civil and tolerant of others. It is the responsibility of each member of the University community to express dissatisfaction with anyone who fails to meet the responsibility of civility and to request that they do so. In the event that cooperation cannot be attained, proper authorities must be involved to insist upon these minimum expectations. Only by campus-wide compliance to these expectations can we achieve a clear sense of our campus culture and, accordingly, a sense of mutual pride.

Students can expect that each representative of all departmental and administrative offices will treat them with respect, a sense of cooperation and with concern for their welfare. Students can also expect appropriate coordination of services among departments.

Everyone is expected to respect the campus environment by behaving in ways that protect the safety, order, and appearance of all campus facilities. Each person must take steps to preserve the ecological and aesthetic aspects of the campus.

Additional Behavioral Expectations

All members of the University community are required to abide by all laws and regulations of The University of Akron, the City of Akron, the State of Ohio, and the Federal Government. Students are expected to abide by the Student Code of Conduct and the University Disciplinary Procedures. Faculty, contract professionals, administrators, and staff are expected to abide by all University regulations and procedures.

ACCREDITATION

Accreditation assures that degrees are recognized and approved by select regional and national education associations, societies and councils. Accreditation serve two fundamental purposes: quality assurance and institutional and program improvement.

There are two types of accreditation of educational institutions: institutional accreditation and specialized accreditation. Institutional accreditation evaluates the entire institution and accredits it as a whole. The University of Akron has been approved by The Higher Learning Commission of The North Central Association of Colleges and Schools (230 South La Salle Street, Suite 7-500 Chicago, IL 60604 (312) 294-3100) since 1914 and has been reaccredited at the highest level as a comprehensive doctoral degree-granting institution.

Institutional accreditation is separate from the accreditation given by professional associations or organizations. Specialized accreditation evaluates particular units, schools or programs within an institution and is often associated with national professional associations or with specific disciplines.

Accreditation provides the security of knowing that the University will honor most credit earned at a similarly accredited college or university. Degrees earned at the University are respected and sought after by prospective employers.

Institutional Accreditation:

The Higher Learning Commission of The North Central Association of Colleges and Schools

Specialized Accreditations:

AACSB International - Association to Advance Collegiate Schools of Business
Accreditation Board for Engineering and Technology
American Association of Family and Consumer Sciences
American Association of Marriage and Family Therapy (provisional)
American Association of Nurse Anesthesia — Council on Accreditation
American Deleter Association
American Psychological Association
American Speech-Language-Hearing Association
Association of Collegiate Business Schools and Programs
Commission on Accreditation for Athletic Training Education (CAATE)
Commission on Collegiate Nursing Education
Committee on Allied Health Education and Accreditation of American Medical Association
Council for the Accreditation of Counseling and Related Educational Programs (provisional)
Council on Social Work Education
Foundation for Interior Design Education Research
International Fire Service Accreditation Congress
National Association of Schools of Art and Design
National Association of Schools of Dance
National Association of Schools of Music
National Certification Board of Pediatric Nurse Practitioners and Nurses
National Council for Accreditation of Teacher Education
National League of Nursing Accrediting Commission
Ohio Department of Education
Professional Society for Sales & Marketing Training

The School of Law is accredited by or holds membership in the following:

American Bar Association
American Bar Association - Law Schools
League of Ohio Law Schools
Council of the North Carolina State Bar
State of New York Court of Appeals

The University also holds membership in the following educational organizations:

American Association of Colleges for Teacher Education
American Association of Colleges of Nursing
American Association of Community Colleges
American Association of State Colleges and Universities
American Council on Education
American Society for Engineering Education
American Society for Training and Development
Council of Graduate Schools
Council for Higher Education Accreditation
Department of Baccalaureate and Higher Degree Programs (National League for Nursing)
International Council on Education for Teaching (associate)
Midwestern Association of Graduate Schools
National Association of Graduate Admission Professionals
National Association of State Universities and Land-Grant Universities
North American Association of Summer Sessions
Ohio College Association
Ohio Continuing Higher Education Association
United States Association of Evening Students
University Council on Education for Public Responsibility
University Continuing Education Association
University Sales Center Akron

The American Association of University Women grants membership to women graduates with approved baccalaureate degrees from The University of Akron.
The University of Akron 2013-2014

The Campus

Currently, the Akron campus covers 218 acres and encompasses 88 buildings. Recent and continued growth with new academic, administrative, and recreational spaces, in a center to formally converted buildings, are attributes to the University’s commitment to provide an "Infrastructure for Academic Success.”

LOCATION

The University is situated in a large metropolitan area. The campus, although centrally located within the City of Akron, features park-like pedestrian areas. Students have easy access to retail outlets, transportation, and churches. The University is located between East Market Street and East Exchange Street on the eastside of the downtown area. Akron is easily reached by automobile from major national east-west routes (Interstates 80, 90, 76, and the Ohio Turnpike) and north-south routes (Interstates 71 and 77), all of which link Akron to the surrounding states and regions. For airline passengers, limousine service is available from the Cleveland Hopkins International Airport located to the north and Akron-Canton Regional Airport, located to the south.

BUILDINGS

Many of the buildings on campus bear the names of prominent persons who are recognized for their contributions in administration, education, business, science, or University service. Major buildings include:

Akron Polymer Technology Center. The Akron Polymer Technology Center, located at the corner of E. Mill and College streets, is a teaching facility that serves the region’s academic and industrial needs by offering a wide variety of non-credit and rubber training courses.

Arts & Sciences Building. Located at 290 E. Buchtel, the College of Arts & Sciences Building is occupied by the Dean of the Buchtel College of Arts & Sciences, Computer Science, Economics, History, Mathematics, Statistics, Psychology, and 16 classrooms.

Athletics Field House. The building is adjacent to the Student Recreation Center and the Ocasek Natatorium and is one of the best indoor facilities in the nation. The field house features a full 120-yard Astro Play field, 300-meter six-lane Mondo track, 8,000-square foot strength and conditioning center, batting cages, indoor golf training facility, locker rooms, sports medicine and rehabilitation center and spectator seating for 1,200.

Auburn Science and Engineering Center. Named for Dr. Norman P. Aubern, 10th president of the University, this complex is one of the largest academic buildings in the state. This complex houses the College of Engineering Dean’s office, the Engineering Co-op Office, Mechanical, Electrical, and Civil Engineering, as well as the Science and Technology Library and Department of Biology and Biology Research Facility.

Ayer Hall. Named for the first dean of the College of Engineering, Frederic E. Ayer. Ayer Hall provides classrooms and offices for the Physics department and Academic Achievement programs.

Bierce Library. This building is named for General Lucius V. Bierce, an Akron mayor, lawyer, historian, state senator, philosopher, philanthropist, and soldier. In addition to the book and periodicals collections, the facility houses audio-visual materials, maps, and microforms.

Buchtel Hall. Originally built in 1870, this structure was destroyed by fire in 1899 and rebuilt in 1901 (Buchtel Hall II). The administrative center of campus, Buchtel Hall was completely restored in 1973 following a devastating fire in 1971. It is the University’s link with its predecessor, Buchtel College. It provides office space for numerous administrative officials of the University, including the Office of the President.

Business Administration Building. This facility, located at 259 South Broadway, houses offices, classrooms, and laboratory facilities for the College of Business Administration, the George W. Davern School of Accountancy, and the departments of Finance, Marketing, and Management.

Crouse Hall. Crouse Hall houses the Department of Geology and Environmental Science, the Center for Environmental Studies, classrooms, and some of the College of Education offices as well as the H.K. Barker Center for Economic Education.

E.J. Thomas Performing Arts Hall. Named for Edwin J. Thomas, prominent industrialist and dedicated member of the University Board of Trustees from 1952 to 1975, this cultural center was formally opened in 1973. Designed to accommodate concerts, opera, ballet, and theater productions, the hall is a masterpiece in architecture, acoustics, and creative mechanisms. It stands at the corner of University Avenue and Hill Street.

Folk Hall. This building, at 150 E. Exchange St., provides modern, well-equipped facilities for the Mary Schiller Myers School of Art. Studios are available for graphic arts, photography, drawing, painting, metalworking, ceramics, and computer design. The Emily Davis Art Gallery is also located in the facility.

Mary Gladwin Hall. Housing the School of Nursing and biology laboratories, this building was named in honor of distinguished alumna Mary E. Gladwin (1887), who rendered unselfish service to the nation during World War I. The $10 million complex opened in 1979 and includes the administrative offices of the School of Nursing, faculty offices, the Center for Nursing, a Learning Resources Center that includes patient care simulation areas, an audio-visual center, and a state-of-the-art computer learning center.

Goodyear Polymer Center. This building, located at 170 University Avenue, houses offices for the Dean of the College of Polymer Science and Polymer Engineering, the Vice President for Research and Dean Graduate School and the Office of Technology Transfer. The facility features a 200-seat lecture hall, offices, classrooms, and research laboratories for the Institute and Department of Polymer Science.

Guzzetta Hall. Located at 157 University Avenue, Guzzetta Hall is occupied by the Division of Dance, Theatre, and Music. In addition to student practice rooms, an experimental theater and a 300-seat recital hall.

James A. Rhodes Arena. This structure on Buchtel Common contains an intercollegiate basketball and volleyball arena with seating for 5,500. The facility also serves as a concert and special event venue, and houses an indoor walking/jogging track, physical education facilities, meeting rooms, department of intercollegiate offices, locker rooms, a sports medicine room and a ticket office.

Infocision Stadium-Summa Field. Located at 375 East Exchange, this state-of-the-art multiplex facility was completed in 2009.

Knight Chemical Laboratory. This complex is named in honor of Dr. Charles M. Knight, who taught the first courses in rubber chemistry at Buchtel College as early as 1909. Opened in 1979, the building houses the Department of Chemistry and features many innovative laboratories with the most sophisticated safety equipment, as well as classrooms and faculty and administrative offices.

Kolbe Hall. Named for the first president of the Municipal University of Akron, this building was remodeled for the School of Communication. Additions to and remodeled space within the building have provided space for faculty and staff offices, TV studio areas, WZAP-FM radio station, computer labs and classrooms. The building also houses the Paul A. Dam Teaching Kitchen.

Leigh Hall. Leigh is named in honor of Warren W. Leigh, first dean of the College of Business Administration. This building is occupied by the offices of Distributed Education, Institute of for Teaching and Learning, and Institutional Research, in addition to The John S. Knight Auditorium.

Paul E. Martin University Center. Located at 105 Fire Hill, the Paul E. Martin University Center has changed from a private club serving dues-paying members to a University-operated restaurant and banquet center. The Grille Room restaurant is open for lunch between 11:30 a.m. and 2 p.m. Business and departmental functions, banquets, receptions, and parties can be scheduled by contacting the Martin University Center.

McDowell Law Center. Named for C. Blake McDowell, prominent local attorney, alumnus, and benefactor of the University, the center houses the School of Law. Opened in 1973, it provides space for the law library, classrooms, moot courtroom, appellate-review office, seminar rooms, and faculty offices. An addition provides library and support space, and a second expansion has linked McDowell Law Center to West Hall, providing additional administrative office space. The law complex stands at the corner of University Avenue and Wolf Ledges Parkway.

National Polymer Innovation Center. Located at 240 South Forge Street this building houses the Austen BioInnovation Institute of Akron, Center for BioMaterials and Medicine and Polymer Engineering.

Ocasek Natatorium. Named for former Ohio State Senator, Oliver Ocasek, the natatorium houses an Olympic-size swimming pool with adjacent spectator seating area, locker rooms, and showers. It also houses eight racquetball courts as well as cardiovascular fitness and strength training areas.

Olin Hall. Named in honor of Professor Oscar E. Olin and Mr. Charles Olin, this facility houses the following departments and institutes: Arts & Sciences Careers Program, Ray C. Bliss Institute of Applied Politics, Philosophy, English Language Institute, Sociology, Political Science, Center for Conflict Management, English, Modern Languages, and Anthropology and Classical Studies.

Olson Research Center. This facility, adjacent to the Polymer Engineering Academic Center on Forge Street, houses space for the Department and Institute of Biomedical Engineering and the Department and Institute of Polymer Engineering, including equipment and laboratories.

The Polsky Building. This renovated downtown department store is home to the University Archives, the Archives of the History of American Psychology, the School of Speech-Language Pathology and Audiology and its Audiology and Speech Center, the Department of Public Administration and Urban Studies, the School of Social Work, the Continuing Education Office, the Office of International Programs, the Graduate School, the Office of Research Services and Sponsored Programs, the Institute of Bioscience and Social Research, and Taylor Institute for Direct Marketing. A University food service facility, Starbucks, and a campus bookstore are in operation on the High Street level (third floor).

Polymer Engineering Academic Center. This 32,000 sq. ft. facility houses the student, faculty, and administrative offices of the Department of Polymer Engineering.

Quaker Square Complex. This complex, located at 135 South Broadway, once used by the Quaker Oats Company, now houses the Quaker Square Inn and Quaker Square Residence Hall, in addition to academic uses, retail, banquet, office, and dining facilities.

Schrank Hall. Named for Harry P. Schrank, longtime member and chairman of The University of Akron Board of Trustees. This complex, which adjoins Auburn Sci-
ence and Engineering Center, is composed of two academic structures and a parking deck. Schrank Hall North contains space for Adult Focus, Biology, College of Engineering, Computer-Based Assessment and Evaluation, Summit College and Women’s Studies. Schrank Hall South contains space for the School of Family and Consumer Sciences, and is accredited by The American Association of Family and Consumer Sciences.

The Department of History is housed in Simmons Hall. This building, located at 277 East Buchtel Avenue, is occupied by departments of Student Engagement and Success, University College, and Business and Finance. Major services provided in this building are the Office of Accessibility, Undergraduate Admissions, Career Center, Counseling Center, Student Financial Aid, Office of the University Registrar, University College, New Student Orientation, and Business and Finance (Student Financial Services).

Stitzlein Alumni Association Center. Named for Harry P. and Rainey G. Stitzlein, this recently remodeled building, north of East Buchtel Ave. at Fir Hill, houses the Office of The Alumni Association.

Student Recreation and Wellness Center. This facility houses all of the recreational and fitness equipment, services, and programs that support our students’ health, well-being and balanced lifestyles. The building is connected to the Ocasek Natatorium. Student Health Services can also be found inside the center.

Student Union. The Student Union, located in the center of campus, serves as a hub for social and educational activities for students, faculty, and staff. This facility houses various food venues, a ballroom and meeting rooms, theater, game room, student organization offices, Off-Campus Student Services, Student Judicial Affairs, Computer Solutions — the computer technology store, DocuZip copy center, bank, Information Center, Starbucks, Zip Card office and Barnes and Noble Bookstore. Visit our Web site at http://www.uakron.edu/studentunion.

Whitby Hall. Located at 200 Buchtel Common, Whitby Hall is named in honor of G. Stafford Whitby, a pioneer in the development of polymer science. This building is occupied by the Department of Chemical and Biomolecular Engineering, faculty offices and research labs, and a computer lab and classroom.

Zook Hall. Named to honor George F. Zook, president of the University from 1925 to 1933, this Buchtel Common facility houses the College of Education offices of the Dean, Associate Deans for Academic Affairs and Student Services, and admission advisement offices. Other facilities include a lecture room that seats 245, general classrooms, a science and mathematics classroom/laboratory, a distance learning classroom, a Center for Literacy, two technology-enhanced demonstration classrooms, two computer-training classrooms, and a multi-media laboratory.

FACILITIES AND EQUIPMENT

The University’s addition of modern teaching aids demonstrates its recognition of the need, in this technological age, for up-to-date facilities and equipment. Many of these facilities are described below.

Buchtel College of Arts and Sciences

The Department of Anthropology and Classical Studies has a Macintosh-based computer lab which gives easy student access to a collection of several thousand original and reproductions of ancient Mediterranean buildings, artifacts and art works, to the Perseus program, a digital multimedia database on the Greek world (20,000 images and most of Greek literature both in Greek and in translation), and to the Internet and the Web. Additional information on the department can be found at www.uakron.edu/anthropology-classics.

The Department of Biology houses greenhouses, controlled-environment chambers, a general research facility, a molecular biology research center, advanced research laboratories, and equipment that includes advanced light microscopes (differential interference contrast, fluorescence), electron microscopes (scanning and transmission), sputter counters, ultracentrifuges, DNA sequencing apparatus, and physiographs; vehicles, boats and a 400-acre nature preserve are available for fieldwork. Additional information about the department, faculty and programs can be found on the department Web site at www.uakron.edu/biology.

The Department of Chemistry is located in the Knight Chemical Laboratory building. The department is home to state-of-the-art facilities for the spectroscopic identification and characterization of compounds. These include the centers for Laser spectroscopy, Mass spectrometry, Nuclear Magnetic Resonance spectroscopy, and X-ray crystallography. Students have access to the department’s computer lab for internet and Web assignments, data analysis, computations, word-processing and printing. The facility maintains an inventory of 11,100 items, including chemicals, glassware, and apparatus. Additional information about the department, faculty, and programs can be found on the department Web site located at www.uakron.edu/chemistry.

The School of Communication features a television classroom/studio and a wide complement of supporting audio and video equipment, including graphics generators and linear and non-linear editors. Portable audio and video equipment is available for location use. There is an audio recording facility with multipath capability. The School also provides several media-related co-curricular activities, including the nationally rated student-run radio station, WZIP, the Emmy Award winning television station, Z-TV, the nationally ranked speech and debate team, and the student newspaper, The Buchtelite. Additional information about the school, its faculty, and programs is available at www.uakron.edu/schcomm.

The Department of Computer Science is located on the second floor of the College of Arts and Sciences Building. Students in Computer Science have access to a wide variety of computing facilities, operating environments, languages and software in laboratories maintained in and by the department. In addition to a PC lab, a UNIX lab and a Graphics Research laboratory, the department has a cluster computer available for research and instruction. Our facilities are state-of-the-art and provide a broad range of experience that is attractive to potential employers. Additional information on the department is available at www.uakron.edu/computer-science.

The School of Dance, Theatre, and Arts Administration is located in Guzzetta Hall. The School offers graduate programs in Theatre and Arts Administration. The state-of-the-art facility includes administrative and faculty offices, scene and costume shops, technology enhanced classrooms, including a design lab/studio. Additional information about the school, its faculty, and programs is available at www3.uakron.edu/dtas.

The Department of Economics is housed on the fourth floor of the College of Arts and Sciences Building in a modern office complex with space for both faculty and graduate students. Economics as a discipline has become increasingly analytic. The department has a computer laboratory for faculty and students. It is equipped with the latest equipment running in a Windows environment. In addition, the department has a variety of software, including economics tutorials, word processing programs and SAS. The lab is also equipped with a laser printer. Network access allows students to search for books, journal articles, the latest economic data, etc., remotely from either Ohio Link or the World Wide Web. The lab is located in close proximity to the faculty offices which facilitate interaction between students and faculty. The department has a varied complement of supporting audio and video equipment, including graphics generation, video editing, audio recording, and multitrack capability. The lab complements the educational experience. Additional information about the department, the faculty, and the programs is available on the department Web site at www.uakron.edu/economics.

The Department of English is located on the third floor of Olin Hall. The department offers students the opportunity to take composition classes in its state-of-the-art computer classrooms. Students have the opportunity to submit written work for literary prizes every spring as well as apply for various English scholarships. The Department hosts the Literary Guild for students, runs a journal of creative writing for students, and sponsors an open mic night featuring poetry and fiction readings by students. Additional information about the department, the faculty, and the programs is available on the department Web site at www.uakron.edu/english.

The School of Family and Consumer Sciences is housed in Schrank Hall South and is accredited by The American Association of Family and Consumer Sciences and offers three graduate programs. Nine laboratories, including a computer center, are available for student use. The programs provide community experiences through internships, clinicals, and student teaching. These programs have active Advisory Committees of community professionals who provide advice and networking assistance. The School’s Center for Family Studies offers a variety of certificate programs, including Divorce Mediation, Home Based Intervention, and Case Management. The College of Arts and Sciences, the School maintains the Center for Child Development for the study of child development and teacher education. The school also houses the University of Akron Nutrition Center, a comprehensive regional center for the study and delivery of effective nutrition interventions. The Center also serves as an educational resource for students and the community, provides nutrition services and conducts research. Additional information about the school is available on the internet at www.uakron.edu/fcs.

The Department of Geosciences covers a range of traditional and contemporary research, from environmental and engineering geology to structural geology, geophysics, geochemistry, paleontology, and geophysics, and paleontology. A focus within the department is Terrestrial Records of Environmental Change (TREC). This research covers such diverse but related topics as hydrogeology, paleoclimate reconstruction, climate change, glacial geology, modern siliclastic and carbonate sedimentology, geomorphology, and aqueous geochemistry. The department is also a recognized leader in Earth science and educational research and maintains excellent modern instrumentation for geologic and environmental research. This includes an environmental scanning electron microscope, environmental magnetism laboratory, and a full suite of instruments for aqueous geochemistry. Additional departmental information can be accessed at www.uakron.edu/geo.

The Department of History occupies one wing on the second floor of the College of Arts and Sciences Building. This office complex includes a multi-media room for Web-based computer work in close proximity to faculty offices, enhancing students-faculty interaction. The endowed interdisciplinary Sally A. Miller Humanities Center is housed within the department and offers fellowships, sponsors speakers and runs pedagogical workshops. The online Journal of Northeast Ohio History, which offers both editorial experience and opportunities of scholarly publication, has its office in the
The Computer Center is equipped with Macintosh computers and MIDI/sound and video equipment. An electronic music studio features digital and analog multitrack recording and sound synthesis equipment for music composition. Classrooms, studios, and 40 practice rooms (acoustical sound modules) are used for teaching, rehearsal, and additional information about the school, its faculty, and programs is available on the internet at www.uakron.edu/music.

The Department of Philosophy is located on the second floor of Olin Hall. It houses a small computer lab and a private library for philosophy students. Brief biographies and pictures of each faculty member in the department can be found on the University Web site at www.uakron.edu/philosophy/.

The Department of Physics is located on the first three floors of Ayer Hall. Facilities include research laboratories used for faculty and student research projects, laboratories for introductory courses and computer lab for undergraduate and graduate student use, and smaller PC clusters for research. Additional information about the department, its faculty, and its programs is available on the internet at http://www.uakron.edu/physics/.

The Department of Political Science is located on the second floor of Olin Hall. The department maintains an instructional computer lab consistently used by students as they analyze real-world political conflicts. The department also houses the facilities for the internationally known Bliss Institute of Applied Politics, one of the largest internship programs in the area, and the Center for Conflict Management. Additional information about the department, the faculty, and the programs is available at www.uakron.edu/polisci.

The Department of Psychology is located on the third floor of the College of Arts and Sciences Building. The department maintains three computer labs that are available for undergraduate and graduate students in Psychology. All labs have access to the internet. Some of the lab's computer stations are statistical packages which include SAS, SPSS, and MPlus. A full-time research programmer/analyst provides hardware and software support for the department and writes custom software for computerized research. In addition to the computer labs, a counseling clinic is maintained by the psychology faculty. The lab also houses a computerized mock laboratory for research in cognitive and physiological processes. The department's Center for Organizational Research engages in outreach to the greater Akron community and provides applied research experience for students. Additional facilities of the department include: research areas for individual computer research and for small group behavior research, and a Test Room where current psychological testing materials are kept. Additional information about the department, its faculty, and its programs, is available on the internet at http://www.uakron.edu/psychology.

The Department of Public Administration and Urban Studies is appropriately located on Main Street in downtown Akron in the Polsky Building. The office suite includes a computer laboratory that is available exclusively for graduate students. The lab has twenty computers and computer projection equipment to facilitate web-enhanced course offerings. Each computer has SPSS X, SAS, and other statistical packages, research methods, and market research applications, and computer games taught in the lab. Additional information about the department is available on the internet at http://www.uakron.edu/paus.

The Department of Sociology facilities include research laboratories used for funded research projects and a research laboratory for undergraduate and graduate students. The Newman Library, providing many current professional journals, is open for students' use. Additional information about the department, its faculty, and its programs is available on the internet at http://www.uakron.edu/sociology.

College of Business Administration

The College of Business Administration is located in the 81,000 square foot four-story College of Business Administration Building, which houses the college's offices, classrooms, computer laboratories, and advising services. The departments of Finance, Management, Marketing, the George W. Daviemo School of Accountancy, the Fitzger-ald Institute for Entrepreneurial Studies, the Fisher Institute for Professional Selling and the Institute for Global Business share the CBA. All undergraduate and graduate programs are fully accredited by AACSB International — The Association to Advance Collegiate Schools of Business, the most prestigious accrediting agency for business schools.

The lab has twenty computers and computer projection equipment to facilitate web-enhanced course offerings. Each computer has SPSS X, SAS, and other statistical packages, research methods, and market research applications, and computer games taught in the lab. Additional information about the department is available on the internet at http://www.uakron.edu/sociology.

College of Education

The offices, laboratories, and other facilities of the College of Education are located in Zook Hall, Chima Hall, Crouse Hall, the James A. Rhodes Health and Physical Education Building, and Inforcement Stadium.

The Department of Counseling offers graduate programs leading to the Ph.D. as well as the Master's degree. The Ph.D. is offered in Counselor Education and Supervision (which includes specialization in Counselor Education and Marriage and Family Counseling Ther-apy), and Counseling Psychology (a collaborative program with the Department of Psy-chotherapy in the College of Arts and Sciences). Masters programs are offered in Clinical Mental Health Counseling, Marriage and Family Counseling/Therapy, School Coun-
The Department of Curricular and Instructional Studies offers graduate programs leading to the Ph.D in Secondary or Elementary Education as well as the Master's degree. The Master of Arts programs include Elementary Education with Literacy option, Secondary Education, or Secondary Education with Literacy option. The Master of Science in Curriculum and Instruction leads to licensure in a chosen field. Initial teacher preparation programs are available at the graduate level. The early childhood program prepares teachers to teach age three to grade three. The middle childhood program prepares teachers to teach grades four through nine. The secondary program prepares teachers of grades seven to twelve to teach language arts, mathematics, science, social studies, family and consumer science (grades 4-12). The P-12 program prepares teachers of foreign language, music, dance, drama, or visual arts. Endorsements are available in reading and teaching English as a second language. The special education options prepare graduate students to be master teachers. The University Center for Child Development, under the direction of the College of Education, provides child care for children while serving as an experimental learning site for teacher education students. Additional information about the department, its faculty, and programs is available on the internet at www.uakron.edu/education/academic-programs/CIS.

The Department of Education Foundations and Leadership serves undergraduates and graduate students in the College of Education. The department provides graduate courses in school administration, higher education administration, and teaching and training technical professionals (formerly postsecondary technical education). The department members also teach the core curriculum of historical, philosophic, psychological, and social foundations required in all graduate education programs. They teach, advise, and supervise problems, theses, and dissertations of students in their degree programs. The department prepares teachers of foreign language, music, dance, drama, or visual arts. The special education options prepare graduate students to be master teachers. The University Center for Child Development, under the direction of the College of Education, provides child care for children while serving as an experimental learning site for teacher education students. Additional information about the department, its faculty, and programs is available on the internet at www.uakron.edu/education/academic-programs/CIS.

The Department of Sport Science and Wellness Education prepares students for careers in teaching, athletic training, exercise science, coaching, and related recreational fields. The graduate program in Curriculum and Instruction with Physical Education licensure option P-12 is a collaborative program between the Department of Curricular and Instructional Studies and the Department of Sport Science and Wellness Education. There are laboratories for the study of exercise physiology, anatomy, athletic training, motor behavior, teaching skills (microteaching), and computer utilization in physical and health education. The department has access to the James A. Rhodes Health and Physical Education Building and Infusion Station (classrooms, the main gym, an indoor running track, a multi-purpose room, and four teaching station areas), Student Recreation and Wellness Center (cardiovascular fitness and weight training areas) Athletic Field House (sports medicine equipment), Ocasek Natatorium (classroom, swimming pool, racquetball courts, and cardiovascular fitness and weight training equipment), and Lee Jackson Field (an outdoor running track). Visit the department's website at www.uakron.edu/education/academic-programs/SSE.

College of Engineering

The offices, laboratories, classrooms, research facilities, machine shops, computer laboratories, and other facilities of the College of Engineering are located in the Abram Science and Engineering Center, Schrank Hall North, Whitby Hall, and the Olson Research Building. The master’s programs in the College consist of departmentally administered Master of Science degrees in Chemical and Biomolecular, Civil, Electrical, and Mechanical Engineering. The Dean’s Office administers the Master of Science in Engineering degree with specializations in Biomedical Engineering, Polymer Engineering, and Engineering Management. The Doctor of Philosophy in Engineering is offered in the interdisciplinary fields of Environmental Engineering, Mechanics, Systems Engineering, Materials Science, Transport Processes, Biomedical Engineering, Engineering Applied Mathematics, Chemical Reactions and Process Engineering, Microscale Physiochemical Engineering, and Polymer Engineering. This interdisciplinary degree integrates knowledge and skills from several disciplines and is administrated by the Dean’s Office. There is the centralized Doctor of Philosophy in Engineering Degree with Youngstown State University and a joint MD/Doctor of Philosophy Degree in Engineering with the Northeast Ohio Medical University.

The Department of Biomedical Engineering is located in the Abram Science and Engineering Center and Olson Research Center and has classrooms, instructional laboratories, and research laboratories. The department provides educational opportunities at both the undergraduate and graduate levels. Biomedical engineering graduate students may also participate in the joint MD/Doctor of Philosophy in Engineering Degree program between the College of Engineering and the Northeast Ohio Medical University. Faculty members in the department are engaged in a wide variety of research areas both on campus and in collaboration with other researchers in health care institutions and biomedical industry. Interdisciplinary interactions are encouraged to promote vibrant research activities and to provide exceptional scholarly atmosphere for learning.

The Biomechanical Interfaces Laboratory conducts research into interactions between skin and contacting surfaces. This laboratory is equipped with a custom-designed pressure and distributed shear system capable of measuring skin stresses with 200 μm resolution, thermal conductivity systems for assessing materials used for prosthetic liners and sockets, and associated computer hardware and software. The Bone Biomechanics and Mechanobiology Laboratory focuses on both macroscopic and microscopic investigations of bone. The laboratory is equipped with mechanical testing machines and standard biology equipment to study bone’s cellular responsiveness to mechanical loading.

The Biofluid Microtechnology Laboratory includes a robotic liquid handler for high throughput applications as well as capabilities for cell culture, microscopy, and wet chemistry work. In addition, the laboratory is equipped with an optical table with camera-lens for high-resolution side view imaging and contact angle and surface tension measurement software and hardware to examine two phase interactions. The Motion Analysis Laboratory studies all aspects of human movement. This laboratory is equipped with a Vicon Motion Analysis System, two AMTI force plates, a MA-1—EMG system, and associated computer hardware and software.

The Materials for Tissue Engineering Laboratory incorporates both a tissue culture facility with an incubated, scanning-stage, inverted fluorescence microscope and hydrogel synthesis and analysis equipment, including an ARES fluids rheometer and an atomic force microscope.

The Biophotonics Laboratory develops new photonics imaging, spectroscopy and sensing technologies for disease diagnostics and therapeutics. The laboratory is equipped with a high-resolution confocal microscope, two VIS-NIRS spectrometers, an ULTRAPOL polishing machine, and Epilog CO2-laser, and an optical table.

The Biomaterials and Tissue Engineering Laboratory provides equipment infrastructure to investigate all aspects of biomaterials. The facility includes a wet lab for formulation, development, and analysis of biomaterials, including medical applications for nanomaterials, in addition to a tissue culture facility for in vitro testing.

The Stem Cell and Tissue Engineering Laboratory aims to develop stem cell-based tissue engineering strategies to explore their biomedical applications. This laboratory has a BSL-2 tissue culture facility and equipment for molecular- and cellular-level analyses.

Visit the department’s website at www.bme.uakron.edu.

The Department of Chemical and Biomolecular Engineering is located in Whitby Hall and provides educational opportunities for students at both the undergraduate and graduate levels in Chemical and Biomolecular Engineering. The department offers a minor in Chemical Engineering and a minor in Engineering Management.

The Applied Colloid and Surface Science Laboratory has a state-of-the-art laser light scattering facility including a Lexel argon-ion laser, a vibration isolated optical bench, a Brookhaven correlation and probability analyzer, FTIR-Raman, TGA, and an IBM PC-based data acquisition system. The Biochemical and Environmental Bioengineering Laboratory is a satellite center of the Ohio Bioprocessing Research Consortium, housing a state-of-the-art HPLC-MS with additional luminescence, UV/VIS, and IR detectors. The labs are well equipped with several bioreactor assemblies, Sorvall RC-5C refrigerated super centrifuge, Perkin-Elmer UV/VIS spectrometer and LS-50B luminescence spectrophotometer, and on-line NAD(p)H fluorometers. The Biomaterials Laboratory is available for polymer synthesis and storage and include a nitrogen hood, Sephadex separation columns, an oil bath, a dry bath, a vacuum oven, a Buch reactor evaporator, and a Lobaconco lyophilizer.

The Catalysis Research Laboratory is equipped with high pressure and high temperature IR reactor system with a Nicolet Magna-IR 550 Spectrometer Series II, a Nicolet Magna-IR 560 Spectrometer E.S.P. and a Balzers Prisma QMG 200 Mass Spectrometer for in situ catalyst preparation, in situ characterization, temperature programmed desorption of NO, H2, and CO, and in situ reaction studies.

The Multiphase and Solids Processing Laboratory is equipped to do research in filtration and flows through porous media. The labs are equipped with a gamma ray instrument for measuring porosity of packed columns and filter cakes, a Frazier Test to measure air permeability of filter media, a Hiac Royco BR8 particle counter, a Zeta Meter and a Brookhaven EKA Streaming Potential Instrument for measuring zeta potentials. An optical system is set up to measure particle sizes and size distributions. The Nonlinear Optical Laboratory is equipped with UreX based worksstations and a variety of engineering software packages.

The Supercritical Fluids Laboratory, a key lab in the Ohio Supercritical Fluid Technol- ogy Consortium, is equipped with FTIR/Raman/ATR, GC/FID/TCD high pressure phase behavior apparatus, Berty Reactor, 1-liter stirred Reactor, dynamic light scattering, mechanical testing and high temperature GPC. The Thin Film Laboratory is equipped with plasma systems, thermal chemical vapor deposition, and in situ microlaminate.

Additional information about the department, its faculty, and programs is available on the internet at www.uakron.edu/engineering/CE.

The Department of Civil Engineering is located in the Abram Science and Engineering Center and Schrank Hall North and has five major laboratories. In the Environmental Engineering Laboratory, students learn to analyze water, wastewater and contaminated soils to assess its quality and to determine the most effective treatment techniques. Laboratory equipment includes UV-visible spectrophotometers, reprimeters, gas chromatographs, high-performance liquid chromatographs, toxicity analyze-
ers, an atomic absorption spectrophotometer, and a total organic carbon analyzer. Water and wastewater analytical kits are available for field studies.

The Wendell Ladue undergraduate computer room is equipped with personal computers and associated facilities for civil engineering students for both class and personal use.

In the laboratories, a tilting flume enables the student to visualize water flow in streams and rivers. A pressurized pipe module is used to study frictional losses in different size pipes. Instructional laboratories introduce several hydraulic software tools such as HEC-RAS, for calculating water surface profiles for natural streams and channels, and Water CAD. In the soil mechanics and foundation engineering laboratory, a student learns how to analyze soil by a variety of tests and equipment to determine shear strength, compaction characteristics, and consolidation. In addition to the standard equipment for routine testing, the laboratory has a computer-controlled cyclic triaxial testing system, flexible wall permeameters, and particle image analysis systems.

In the structural materials laboratory, students have the opportunity to observe the experimental verification of the behavior of structural materials, members, and connections subjected to tension, compression, bending and torsion. Physical testing is accomplished through the use of two universal testing machines with a maximum capacity of 500,000 lbs., five closed loop servohydraulic testing machines with a maximum capacity of 100,000 lbs., a load frame used to test full scale members and structural systems. One of the closed loop systems has the capability to apply both axial and/or torsional loads. Further, a full array of data acquisition equipment is available.

The transportation lab is equipped with a complete signal control system supported by video and laser speed/range detection systems to provide traffic data for systems operation and analysis. The global positioning system tracks the position of probe vehicles on transportation network and the spread spectrum radio transmits the video and traffic data from one such system to another wirelessly.

Additional information about the department, its faculty, and programs is available on the internet at www.uakron.edu/engineering/CES.

The Department of Electrical and Computer Engineering is located in the South Tower of the Auburn Science and Engineering Center. The Department has learning facilities that are available which include laboratories for the study of circuits, analog and digital electronics, control, computers, energy conversion, embedded systems interfacing, power electronics, and electromagnetics/microwaves. Laboratories follow instruction to help the student apply the materials learned in class.

In the circuits laboratory, students learn the basics of circuit design, instrumentation, and measurements. The laboratory is equipped with digital oscilloscopes, digital volt/tampere meters, and other basic measuring equipment.

The analog and digital electronics laboratory builds on the circuits sequence and introduces the student to more advanced design tools and concepts, including computer simulation of circuits. In addition to digital oscilloscopes, the laboratory contains signal generators and the like, specialized equipment such as a transistor curve tracer, single-board microcomputers, development systems, personal computers, and other specialized instruments.

The computer laboratory is an open laboratory with free access to students. The laboratory contains personal computers with all software necessary for other courses, as well as word processing and networking software. The laboratory also serves courses in computer engineering and many elective courses and for research purposes.

The two control laboratories teach the basics of analog and digital control and are equipped with digital measuring equipment, analog and digital computers and interfacing components.

The energy conversion laboratory teaches electric machines, energy conversion, and machine control. The laboratory is equipped with motors, generators and controllers, both digital and analog. Emphasis is placed on computer control of machines.

The embedded systems laboratory is designed to introduce the students to the computer outside world. Students learn how to connect devices to computers, how to program them, and how these can be used in design. The laboratory uses a variety of real-world designs and projects to keep students up to date on this important engineering activity. The equipment in the laboratory includes personal computers, single-board microcomputers and industrial controllers in addition to measurement equipment and components.

The power electronics lab is taught as part of a power electronics course and teaches design of power components and circuits for operation at high voltage, high current and high power. Digital controllers and general measuring equipment are available for model and software development projects in all courses. The senior design project laboratories provide bench space and instrumentation for assembly and test of team projects. Additional laboratories for signal processing and advanced control exist as part of elective courses.

Additional information about the department, its faculty, and programs is available on the internet at www.uakron.edu/engineering/ECE.

The Department of Mechanical Engineering is located in the Auburn Science and Engineering Center. There are eight laboratories in the Department of Mechanical Engineering. The Thermal and Fluid Science Laboratory has internal combustion engines, a super sonic wind tunnel, a subsonic wind tunnel, and a water tunnel. The Hydrodynamics laboratory has laser perforation measurement systems, a gas laser, and a spectrum of heat exchangers. The Mechanical Measurements Laboratory has a complete array of transducers, calibration equipment and standards, signal conditioners, analog recording devices and microprocessor-based digital data acquisition systems. The Materials Testing Laboratory has a computer controlled servo-hydraulic structural testing machine and a uniaxial universal testing machine for performing static, quasi-static, cyclic and dynamic tests on a spectrum of engineering materials and several types of hardness testing equipment. The Parker Hannifin Motion and Control Laboratory has hydraulic and pneumatic servo systems as well as servovalve systems controlled by PLCs and computer controllers. The Experimental Mechanics Laboratory has photoelastic strain measuring equipment and associated facilities, coupled with a complete range of strain gage instrumentation for both static and dynamic measurements. The Mechanical Design Laboratory has several software packages for computer-aided design connected to the College’s Engineering Computer Facility (ECFN). The System Dynamics and Controls Laboratory is composed of several microprocessors, analog computers, and digital controllers, as well as equipment for process control and robotics. The Micro Electro Mechanical Systems (MEMS) Laboratory has instrumentation to build and characterize MEMS devices.

The Vibration and Acoustics Laboratory has electromechanical shockers, sound pressure level instrumentation, and frequency spectrum analyzers for modal analysis. The Metallurgy and Failure Analysis Laboratory has a complete set of metallographic instrumentation for microstructural analysis of both conventional and advanced engineering materials, and electron microscopes for analysis of failure.

The facilities in the Department of Polymer Science contain extensive laboratories for polymer synthetic chemistry and for the characterization of macromolecules and polymer morphology. A nuclear magnetic resonance laboratory is maintained with several high-resolution instruments. The applied research section of the Maurice Morton Institute of Polymer Science operates a variety of analytical and compound/processing laboratories to serve the needs of industry and government agencies for a reliable source of problem solving and data. Processing laboratories include unique blending/compounding and molding facilities. The Akron Polymer Training Center serves as a laboratory for the processing and testing of rubber and plastic materials. This Center provides classrooms and laboratories for undergraduate students in the Mechanical Polymer Engineering program.

The laboratories available in the Department of Polymer Engineering include and the Extrusion Laboratory, the Electromagnetic Radiation and Electronic Optics Laboratory, the Thermal and Dielectric Laboratory, the Rheological Laboratory, and the Mechanical Laboratory.

Additional information about the department, its faculty, and programs is available on the internet at www.uakron.edu/engineering/MEE.

College of Health Professions

The College of Health Professions opened in 2012. The college includes the schools of nursing, nutrition and dietetics, social work, and speech-language pathology and audiology and will focus on graduating students prepared to excel as professionals in an evolving health care environment. History of the College

The College of Health Professions located in Mary Gladwin Hall, provides professional nursing education at the master’s and doctoral levels. The school is approved by the Ohio Board of Nursing and the master’s program is accredited by the Commission on Collegiate Nursing Education. Academic advising services are available to prospective students. The school contains a state-of-the-art Learning Resource Center, including a computer laboratory exclusively for nursing students. The Nursing Center for Community Health within the school is closely linked to the Akron community and is used by faculty and students for community service, practice, education and research. The school also has a Center for Gerontological Health Nursing and Advocacy whose primary goal is to improve the health care and quality of life for elders.

The Master’s Program includes advanced practice options as a clinical nurse specialist, nurse practitioner, or nurse anesthetist and an advanced role option in nursing service administration. Advanced Role Preparation in Nursing Educator Role and Nursing Management and Business Certificate Programs are also available. Advanced practice specialties include adult/gerontological health nursing, psychiatric mental health nursing, child and adolescent health nursing, and nurse anesthesia. Postmasters certificate programs include adult/gerontological health nursing, psychiatric mental health nursing, child and adolescent health nursing, and nurse anesthesia. Core courses in the Master of Science in nursing program are offered via distance learning from the Akron campus to the Lorain County Community College (LCCC) campus.

The University of Akron 2013-2014
The College of Polymer Science and Polymer Engineering

The College of Polymer Science and Polymer Engineering offers graduate degrees leading to the Master of Science and Doctor of Philosophy in both Polymer Science and Polymer Engineering. In addition, there are elective courses in both polymer science and polymer engineering for undergraduate science and engineering majors. Options which emphasize polymer engineering have been developed with the College of Engineering through the Departments of Chemical Engineering and Mechanical Engineering for undergraduate students interested in the polymer industry. An option has also been developed in the college of Arts and Sciences in Chemistry which emphasizes polymer science. In addition, an interdisciplinary undergraduate program leading to a degree in Mechanical Polymer Engineering, approved by the faculties of the colleges of Engineering and Polymer Science and Polymer Engineering was started in Fall 1995.

The facilities of the Department of Polymer Science and the Maurice Morton Institute of Polymer Science (MMIPS) support fundamental and applied research in polymer chemistry, polymer physics, and many aspects of polymer behavior. There are extensive laboratories for polymer synthetic chemistry and for the characterization of macromolecules and polymer morphology. A nuclear magnetic resonance laboratory, operated jointly with the Department of Chemistry, provides several high-resolution instruments supervised by a professional staff. The Applied Polymer Research Center, managed by the University of Akron Research Foundation, but working closely with MMIPS, operates a variety of analytical and compounding-processing laboratories to serve industry and government agencies for a reliable source of problem solving and data. The total value of major instrumentation and equipment housed in the polymer science laboratories exceeds $15 million. Additional information about the department, its faculty, and programs is available on the internet at www.uakron.edu/ssps.

The Department of Polymer Engineering and Institute of Polymer Engineering maintain a broad-based range, state-of-the-art processing, structural, and rheological/mechanical characterization facilities to meet the needs of research and development. Facilities for polymer characterization include scanning electron microscopy, atomic force microscopy, X-ray diffraction (including a rotating anode X-ray generator), Fourier transform infrared, small angle light scattering, optical microscopy, radiography, differential scanning calorimetry, thermogravimetric analysis, oxygen permeability tester, and surface profiling. Rheological and mechanical testing equipment, including rotation and capillary shear rheometry, dynamic mechanical, tensile and impact testing, are also available. Our students receive hands-on training on the operation of all processing and characterization equipment. Additional information about the department, its faculty, and programs is available at http://www.poly-eng.uakron.edu.

Positioned in the Rubber City, where polymers are the focus of innovation and technology, the Akron Polymer Training Center (APTC) is the training division of the College of Polymer Science and Polymer Engineering. Poised to meet the needs of our changing environment, the center strives to be the world’s leading provider of virtual workforce development and training. The 18,000 sq. ft. facility houses three classrooms, two polymer-processing laboratories, and a laboratory devoted to chemical measurements and instrumentation.

The APTC serves the region’s academic and industrial needs by offering a wide variety of hands-on, non-credit courses as well as customized training. Since its opening in 1993, the APT has trained thousands of incumbent employees in the rubber and plastics industry worldwide. By actively listening to our clients, we have responded by adding courses of interest in the new and emerging fields of bio-materials and polymers for bio-medical applications in anticipation of collaboration with the newly formed Bioinnovation Institute in Akron. With a diverse set of course offerings that serve our industry, the APTC is the largest polymer training center in the United States.

The center offers non-credit, short courses in the area of rubber chemistry, mixing and compounding. In addition, it presents a full complement of hands-on plastics programming designed to enhance the skills of incumbent workers in the plastics processing field. Its world-class training seminars and workshops are presented by instructors from the industry, who bring practical experience to the classroom.

For more information on the center, please contact Tayba Tahir, director: Akron Polymer Training Center, College of Polymer Science and Polymer Engineering, at (330) 972-8661 or via email at tahir@uakron.edu. Visit the APTC website at http://www2.uakron.edu/aptc.

The Akron Global Polymer Academy at The University of Akron assists the College of Polymer Science and Polymer Engineering in creating and disseminating knowledge about polymer science, polymer engineering, and Science, Technology and Engineering, and Mathematics (STEM) education by supporting initiatives in Pre-16 education and other distributive education ventures. Providing consulting and training services to the polymer industry worldwide, the Akron Polymer Training Center is the workforce development division of the Akron Global Polymer Academy. Visit the Academy’s website at http://www.apga.uakron.edu for additional information.

University Libraries

Library facilities are housed in three separate locations: in Bierce Library on Buchtel Common, the Science and Technology Library in Auburn Science and Engineering Center, Room 104; and Archival Services in the Pinks Building, lower level.

Library services include reference and research assistance, and user education. Materials can be borrowed from the University Libraries through the circulation department or obtained from other libraries through the OhioLINK network or other resource-sharing arrangements. The University Libraries’ collections contain more than 3 million items: books, periodicals, government documents, curricular materials, microforms, maps, audio-visual materials, and archival documents. The library receives more than 15,000 magazines, journals, newspapers, and other serial publications. Through the library’s memberships in the Center for Research Libraries, the Ohio Library and Information Network, the Online Computer Library Center (OCLC), and the Ohio Network of Academic Research Centers, access to vast resources is greatly increased for University students, faculty, and staff.

University identification cards function as library cards. Group study rooms, photocopy services, and equipment for use in making paper copies from microforms are available in Bierce Library and in the Science Library. Students may use one of the 180 circulating laptop computers available in Bierce and Science Libraries.

Audiovisual Services, located in Bierce Library, Room 75, maintains an extensive centralized collection of media hardware and audio-visual resources for student and faculty use. It also has a collection of instructional materials in various media formats (filmstrips, slides, etc) to supplement classroom instruction. Audio Visual Services also designs, installs, and maintains technology-enhanced general purpose classrooms, offering permanent-in-room projection, sound reinforcement and a sophisticated media retrieval system. Additional information about the libraries is available on the internet at http://www.uakron.edu/libraries/
Computer Labs: A combination of 400 Dell, Apple, and iPad devices are available for two- and four-hour loans in Bierce Library, the Science and Technology Library, Circulation Desk, and the Student Union information desk. The wireless laptops can be used anywhere within the building to access the internet, to get mail, or to do class assignments. A general purpose computer lab of 20 Windows Desktop PCs for students is located in the College of Arts & Sciences building. Room 103B. Both the wireless and general purpose labs have the same productivity tools such as Microsoft Office, SPSS and SAS. All computers have internet and e-mail capabilities.

Virtual Computer Labs: 24/7/365 online access to selected software. Log into MyAkron and click on UA Virtual Lab.

Internet Repair Kiosks: 124 strategically placed internet kiosks provide instant access to email and Web registration on campus.

Computer Repair Services: University of Akron students with knowledgeable and experienced assistance in the setup and operation of their computer equipment. CRS will install University-approved software and assist in installing hardware and peripherals, which will enable you to connect to the University computer network and the internet. CRS will also provide hardware diagnostics, software diagnostics (within reason) and basic troubleshooting. CRS will not install or troubleshoot any software or hardware relating to games. If a hardware problem is found or suspected, our student technicians will give you an idea as to where the problem lies. CRS can also help you set up your direct network connection or wireless for residence hall students.

CRS will install (you must have the original media) and troubleshoot the following software products:

- Microsoft Windows 8, 7, XP, Vista, 2000, ME
- Microsoft Publisher
- Adobe Acrobat Reader
- Microsoft Security Essentials

Walk-in support is available for Tier 1 support. This allows you to come into the Computer Center between 8:00 a.m. and 4:00 p.m. without an appointment to get service. Some of the services are:

- Triage Apple and Windows machines for software issues
- Smart Phone and Tablet setup/service
- Basic encryption problems
- Wireless setup and issues
- Memory installation

**Please note that all Microsoft software must be purchased by the student prior to installation. An agreement between the University and Microsoft allows the University to sell Microsoft software products to University of Akron students through Computer Solutions at significantly reduced prices.

Computer Repair Service information can be found at:
http://www.uakron.edu/dts/computer-repair-service.dot

Location: The Computer Center, 185 Carroll St., Room 129; (330) 972-7626

Hours of Operation: Monday-Friday: 8:00 a.m. - 5 p.m.

Technology Learning Support Services (TLSS) provides the campus community with support services for applications such as SpringBoard and PeopleSoft. The Walk-in Support Center combined with laptop checkout area is conveniently located in Bierce Library.

The Zip Support Center (walk-in) provides the campus community with support services for applications such as SpringBoard and PeopleSoft, IDs and passwords, computer hardware and software issues. The walk-in Support Center is combined with the laptop checkout area and is conveniently located on the main floor of Bierce Library.

The Zip Support Desk provides call (330) 972-6888, email support (support@uakron.edu), and online chat (supportchat.uakron.edu) for all students, faculty, and staff. The Support Desk maintains a self-service wiki that can be found at support.uakron.edu.

Hours of operation during the Fall and Spring semesters:
- Monday–Thursday: 8 a.m. – 12 p.m.
- Friday: 8 a.m. – 9 p.m.
- Saturday: 9 a.m. – 8 p.m.
- Sunday: 1 p.m. – 12 p.m.

Summer hours are modified and are posted on the Web page.

Software Training Services develops Web-based tutorials and documentation for student self-service applications, the portal (MyAkron), and SpringBoard! For more information, visit Software Training Service’s Web site at http://www.uakron.edu/training.

To access tutorials for hundreds of software applications log into MyAkron, click the Help Center link in the upper right, then click the Atomic Learning link under the Computer Software Help heading.

Department of Instructional Services coordinates the activities of Computer Based Assessment and Evaluation, Design, and Development Services, Distance Learning Services, and Audio Visual Services. Access these services through the Instructional Services website at http://www.uakron.edu/its/instructional_services.

Computer Based Assessment & Evaluation supports learning and assessment by providing a variety of online testing, assessment, and survey services. Services offered by CBAE include:

- Design, develop, and deliver online tests
- Provide and support online testing in a proctored testing lab
- Score tests completed on bubble sheets.
- Administer placement testing for incoming university students.

The testing lab is located in Schrank Hall North, Room 152. For additional information please visit the CBAE website at http://www.uakron.edu/testing.

Design and Development Services provides support for the design and development of web-based and multimedia instructional materials. Our team is composed of instructional, curriculum, graphics, and multimedia designers and producers.

- We provide support for traditional and online courses using the Springboard! enterprise Learning Management System.
- We support departments in the design and development of online programs and courses that provide access and interaction.
- We offer Web site design and other graphic design for a variety of applications.
- We support faculty in the design and development of Web-based and Web-enhanced course materials, including multimedia and assessment.
- We provide services for instructors in digital photography, high definition and conventional videography, video post-production, and image scanning.
- We offer live and on-demand video streaming and hosting.
- We support classroom technologies such as clicker response systems and lecture capture/recording systems.
- We explore emerging technologies and how they can be used to enhance teaching and learning, and we offer training on a number of these technologies.

For further information, contact Design and Development Services at (330) 972-2149 or visit the website: http://www.uakron.edu/its/instructional_services

Distance Learning Services: Distance Learning Services provides synchronous videoconferencing and Web collaboration capabilities to the classroom environment. Students at the University are able to interact and share materials with students at one or more remote locations via classrooms equipped with state-of-the-art videoconferencing and Web collaboration technologies. In addition to accommodating traditional course offerings, Distance Learning Services also provides:

- A corporate videoconferencing suite ideal for group meetings and personal interviews.
- A relationship with a network of content service providers that specialize in events such as virtual field trips.
- Special event connections that support educational initiatives, i.e. work shops and professional development.

For further information, contact Distance Learning Services at (330) 972-2720.

Audio Visual Services: Audio Visual Services is located on the ground floor of Bierce Library, Room 75.

- Call (330) 972-7811 to order audio visual equipment. Staff will deliver equipment on campus, assist with the set up of the equipment and will help troubleshoot any technical problems.

Audio Visual Services: Audio Visual Services provides network connectivity and remote access for faculty, staff, and students. Network connections are available in the Residence Halls and the entire campus is covered with 802.11b wireless services. Remote access is provided by the use of VPN access. High speed cable modem service from the local area cable provider is also available at a reduced rate.

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RESEARCH CENTERS AND INSTITUTES

The University Research Council is responsible for encouraging, supporting, and making recommendations pertaining to sponsored and contractual research carried out at the University’s departments, schools, centers, and institutes. The council consists of the Vice President for Research and Dean of the Graduate School, the Director of Research Services and Sponsored Programs, representatives of the Faculty Senate, various college deans and institute directors, and General Counsel. Sponsored research activities on campus are coordinated by the Vice President for Research and Dean of the Graduate School and the Director of Research Services and Sponsored Programs.

Akron Global Polymer Academy
Mark Foster, Ph.D., Director
The Akron Global Polymer Academy at The University of Akron assists the College of Polymer Science and Polymer Engineering in creating and disseminating knowledge about polymer science, polymer engineering, and Science, Technology, Engineering, and Mathematics (STEM) education by supporting initiatives in P-16 education and other distibutive education ventures. Providing consulting and training services to the polymer industry worldwide, the Akron Polymer Training Center is the Workforce Development division of the Akron Global Polymer Academy.

Ray C. Bliss Institute of Applied Politics
John C. Green, Ph.D., Director
The Ray C. Bliss Institute of Applied Politics is a non-partisan, public education and research adjunct of The University of Akron and its Department of Political Science. The broad purposes of the institute, in keeping with the career of its namesake, Ray G. Bliss, are: to give all citizens, and particularly students, an opportunity to learn how to become active and competent in public life; to help maintain a tradition of ethical public service in politics; to foster useful relationships between applied politics and political science; to promote public comprehension of political organizations and the requirements for their effectiveness; and to improve understanding of continuity and change in American political institutions.

Institute for Biomedical Engineering Research
Brian L. Davis, Ph.D., Director
This institute was established in 1979 to promote interdisciplinary studies in the rapidly growing intersections between medicine, engineering, and the physical sciences. The mission of IBER is to promote the growth and development of Biomedical Engineering research in medical devices and biomaterials in the Northeast Ohio region through collaboration with regional hospitals, industry, the Austen Bioinnovation Institute in Akron, Northeast Ohio Medical University (NEOMED), and The University of Akron. As such, the objective of the institute serves to offer medical professionals in the health services industry in the region with opportunities to collaborate with engineering and basic science faculty, staff, and graduate students in strengthening the development and application of biomaterials and medical devices. Effective use of the combined resources of the University, NEOMED, and the affiliated health care members permits a more cost-effective solution to design and development of biomedical products than could be achieved by each entity working independently.

Center for Advanced Vehicles and Energy Systems (CAVES)
J. Alex De Abreu, Ph.D., Director
The mission of the Center for Advanced Vehicles and Energy Systems (CAVES) is to be a leader in the creation of sustainable and clean energy sources and to facilitate the adoption of these technologies, considering the entire energy pipeline—energy generation, conversion, and usage. The center efforts are geared toward product-oriented research, development and commercialization of cost-effective solutions to alternative transportation systems, advanced energy sources and storage devices, and their real-time control. In addition to providing research and testing services to industry, private, and government agencies, CAVES also provides engine performance, emission, and fuel economy testing services, seminars, training, and product-oriented graduate and undergraduate design experiences. Specific expertise can be found in the areas of power electronics, charging stations, battery management, bidirectional grid-interfaces, motor design, motor drives, hybrid and electric vehicles, wind turbines, solar energy, fuel cells, energy harvesting, control systems, and wireless embedded networked sensor design.

As part of the University of Akron-Wright Center for Sensor Systems Engineering partnership CAVES houses the Center for Clean Technology Sensors, a one-stop shop for sensor and sensor system design, development, testing, and commercialization. CAVES unique facilities include a 150KW dynamometer for testing motors, generators, hybrid-electric drivetrains, and power electronic drive sensors; a high temperature electronics lab; a real-time computing lab; an alternative energy lab; a tribology lab; an optical strain analysis lab; a number of corrosion facilities; facilities for developing specialized coatings and surfaces; and access to a clean room in the Timken Engineering Surfaces Center. Please contact Dr. J. Alex De Abreu at alexis4@uakron.edu or (330) 972-6709 for additional information.

Center for Applied Polymer Research
Crittenden J. Ohlemacher, Ph.D., Manager
Robert H. Seipke, M.S., Special Projects
Operating under the Institute of Polymer Science and Polymer Engineering, the Applied Polymer Research Center (APRC) provides technical services to hundreds of companies. Industrial clients of all sizes gain access to top researchers, knowledge bases, and advanced equipment. With a full-time professional staff, the APRC is dedicated to providing timely and reliable contractual technical services for industrial and government clients. Key areas of technical service include: polymer characterization, additive identification, defect analysis, thermal analysis, dynamic mechanical thermal analysis (RTA, DMTA), chromatography and spectroscopy.

Center for Collaboration and Inquiry
Operated jointly by the Buchtel College of Arts and Sciences and the College of Education, the Center for Collaboration and Inquiry was created in 2002 to promote the practice, research, and dissemination of inquiry-based teaching and learning. The Center supplies the resources and assistance necessary for P-16 teachers to create effective learning environments and fosters collaborative research efforts between experts of both content and educational methods.

Center for Conflict Management
William T. Lyons, Jr., Ph.D., Director
The University of Akron has a long and proud history of the interdisciplinary study of conflict, because understanding the nature of conflict is the first step toward reducing conflict and violence at home, in our communities, workplaces, and schools. The Center for Conflict Management, jointly administered by the departments of Political Science and Sociology, seeks to build on that tradition by combining courses in several departments to enhance the capacity of students to effectively work toward reducing the harms associated with conflict and violence—from interpersonal to international.

For more information, contact the office, 202 Olin Hall, (330) 972-5855, wtyons@uakron.edu, or www.uakron.edu/conflict.

H. Kenneth Barker Center for Economic Education
The center exists to improve the economic literacy of individuals to help them function competently as citizens, producers and consumers. The center conducts workshops, seminars and economic programs for teachers, students, and interested groups. It provides consulting services in the area of economic education and acts as a clearinghouse for the gathering and dissemination of economic education materials and programs. It also fosters an understanding and appreciation of the American economic system.

Robert M. Schwartz, Ph.D., Director
The Center for Emergency Management and Homeland Security Policy Research at The University of Akron is dedicated to create a supportive environment for research, academics, and outreach in Emergency Management and Homeland Security. This Center will support and encourage multidisciplinary endeavors in these fields that will make a positive contribution to society.

Center for Environmental Studies
Ira D. Sadowsky, Ph.D., Director
The Center for Environmental Studies matches the expertise of about 100 faculty in 33 disciplines with the needs of students seeking study and research opportunities related to the environment. Since its founding in 1970, the center has sponsored, or in other ways supported, activities appropriate to understanding the Earth system and maintaining a quality environment for humanity.

The center offers both undergraduate and graduate certificate programs. By enrolling in selected co- courses outside of their major field of study, students receive the broad training required to address environmental concerns. The center also coordinates special forums, workshops, and seminars that address major issues. Examples include the National Energy Forum, the World Food Forum, and Evaluation of Environmental Data. Workshops on environmental studies in England, energy, and natural history exemplify the interdisciplinary approach to the understanding of issues.
Center for Family Studies
Pamela Schulze, Ph.D., Director
The Center for Family Studies, established in 1979, was designed to stimulate and encourage the interdisciplinary study of the family. It serves both the University and the community by fostering collaboration between faculty, students, practitioners, and community leaders on curriculum development, educational conferences and seminars, research and training, and public policy relevant to important family issues. The Center is a member of the Sloan (Foundation) Work and Family Research Network and can supply current and credible information on work-family issues and its cultural contexts.

The Center is represented by faculty from the University’s colleges and over 15 disciplines. It also includes leaders from various community systems, such as the schools, hospitals, courts, churches, mental health, social and health care agencies. In addition, the Center has a fellows program in which outstanding faculty and community leaders are named as either fellows, adjunct fellows or senior fellows.

The Center offers certificates in the following specialty areas: General Mediation, Divorce Mediation, and Home-Based Intervention. For more information, please refer to the descriptions of Interdisciplinary and Certificate Programs in this Bulletin or the General Bulletin. Any student, faculty member or community person interested in family issues is invited to call the director to learn how they can participate or learn more about the Center’s activities.

Center for Information Technologies and eBusiness
Bindiganavale S. Vijayaraman, Ph.D., Director
The Center for Information Technologies and eBusiness (CITe) is a multi-disciplinary center within the College of Business Administration. CITe provides an important resource connecting IT executives with IS faculty and students that will provide IS faculty and students with expertise in business and educational research and networking opportunities. CITe was created in 2000 with the mission to teach students and develop faculty in the principles and practices of the related disciplines of Information Technology and electronic business. CITe is made up of an advisory board of Information Technology leaders from the Northeast Ohio region and the College of Business Administration faculty, staff, and students. The objectives of CITe are to advance information technology (IT), information systems (IS), and eBusiness (EB) programs, research, best practices, and related activities at The University of Akron. Visit the CITe website at http://cite.uakron.edu for more information.

Center for Literacy
Lisa Lenhart, Ph.D., Director
The Center for Literacy furthers the mission of both the University of Akron and its College of Education through a variety of programs that support development of expertise and dissemination of knowledge about language learning. The Center brings preserve, inservice, and university teachers together with children and families in the greater Akron area through a wide range of literacy related projects. Further information about the Center for Literacy can be found at http://www.uakron.edu/education/community-engagement/literacy/.

Center for Organizational Development
The Center for Organizational Development in the College of Business Administration was established to meet the training and development needs of the business community. The Center offers management development seminars, programs, conferences, and consulting services designed to enhance the skills of individuals and improve company productivity in a rapidly changing world. The Center specializes in offering dedicated supervisory training and management development programs that are custom designed to meet the specific needs of companies.

Center for Organizational Research
Dennis Doverspike, Ph.D., Director
The Center for Organizational Research is a business research and consulting center managed by the Industrial/Organizational Psychology Department at the University of Akron. The Industrial/Organizational Psychology Department at the University of Akron consistently ranks as one of the top ten programs in the nation (according to U.S. News & World Report).

The COR’s mission is to provide top quality consultation and research-based interventions to the business community. The COR also serves the purpose of providing professional training and research opportunities for graduate and undergraduate students. The COR is able to provide a tailored approach to the clients’ needs because of its smaller client base and research orientation. COR offers larger organizations access to solutions on cutting-edge research from a nationally regarded academic program.

Center for Public Service Research and Training
Peter J. Leahy, Ph.D., Director
The Center for Public Service Research and Training (CPSRT), established in 2002, is a division of the Institute of Bioscience and Social Research (IBSR), a multipurpose research institute of the University of Akron. CPSRT’s mission is to assist the local and regional community in policy analysis and evaluation, applied research, professional service and the resolution of social, economic and public management problems. CPSRT offers its services to governments at all levels, to community foundations, to human service agencies and to community organizations. Particular expertise is available in program evaluation and program improvement strategies, strategic program planning, organizational design, needs assessment, community planning and the conceptualization and design of research projects.

CPSRT draws upon the full range of senior research associates, professional staff and related research centers available in the IBSR, as well as upon faculty and doctoral students from the Buchtel College of Arts and Sciences.

Center for Statistical Consulting
The mission of the Center for Statistical Consulting in the Department of Statistics is to provide the university community and the community at large with professional assistance in the design and analysis of statistical problems for theses, dissertations, and research. The office is located in the College of Arts and Sciences Building, Room 118B. When requesting statistical consulting refer to the Center’s website at http://www.uakron.edu/statistics/about-us/; fill out the Request for Statistical Consulting form and e-mail it to the department on the available link. The department will contact you for an appointment.

Center for Urban and Higher Education
Bridgie A. Ford, Ph.D., Director
The Center for Urban and Higher Education is an education and research unit within the College of Education with the broad purpose of improving student learning pre-K through higher education. CUHE serves both the University and the community by building and sustaining collaborative partnerships among practitioners, faculty, students, and community leaders. CUHE’s urban education institutes, professional development workshops and trainings, and research initiatives provide the frameworks for innovative collaborative services. The Center is located in Quaker Square 232 and 232a. For more information and when requesting services, please visit the Center’s website at www.cuhe.uakron.edu or via e-mail at cuhe1@uakron.edu or call (330) 972-8183.

English Language Institute
Established in 1979, the English Language Institute (ELI), part of Buchtel College of Arts and Sciences, offers a program in English as a Second Language (ESL) instruction. Its English for Academic Purposes Program provides non-credit ESL courses to international students and nonnative residents who plan to pursue an undergraduate or graduate degree at The University of Akron or another U.S. university. The intensive, 20-hour per week program also serves individuals who wish to improve their English to meet their own professional and/or personal goals. ELI courses at four levels of English proficiency target language and academic skills needed for successful study at a U.S. university; reading efficiently, writing clearly, taking lecture notes, and communicating effectively in English. Students also study grammar and vocabulary and prepare for language proficiency tests to meet the University’s English requirement. (The TOEFL, Test of English as a Foreign Language, or the ELI-ASSET, Academic Study Skills and English Test, along with ELI course grades may be used to successfully complete the ELI and begin academic coursework.) In addition, students receive a wide variety of support services to facilitate their transition to life and study in the United States.

In addition to its instructional program, the ELI administers the University of Akron Diagnostic English Proficiency Exam (the U-ADEPT), which assesses the speaking ability of prospective international teaching assistants at UA and determines their readiness to provide classroom-related services in their graduate departments. The ELI serves as a resource on issues relating to language proficiency for University faculty, staff, and students as well as for members of the local community. For more information, visit the ELI website at www.uakron.edu/eli/, e-mail us at eli@uakron.edu, or call 330-972-7544.

Fisher Institute for Professional Selling
Chris Plouffe, Ph.D., Director
Established through a gift from Ronald and Diane Fisher in 1992, the Ronald R. and Diane C. Fisher Institute for Professional Selling is the second oldest sales program in the world and widely regarded as one of the best.

The mission of the Fisher Institute for Professional Selling is (1) to enhance the image of the sales profession and to promote professional selling and sales management as rewarding lifelong careers; (2) to provide world-class, high quality excellence in sales education through our sales major, minor, and certificate programs; (3) to forge strong partnerships with the business community by providing them with...
top talent and outstanding training and consulting to their sales executives and their business needs; and (4) to conduct research that advances the field of sales. The sales function generates the revenue that enables the rest of the corporation to operate. Jobs are abundant in the field of sales. Current placement is 100% (compared to 37% in all other majors).

Visit the website at http://www.uakron.edu/cba/fisher for more information.

William and Rita Fitzgerald Institute for Entrepreneurial Studies
Steven Washington, Director
In 1995, a generous gift from William and Rita Fitzgerald created the Fitzgerald Institute for Entrepreneurial Studies in the College of Business Administration. The Institute is established to promote the principles of free enterprise and encourage entrepreneurial spirit and practices both within the University’s curriculum and throughout the business of community.

The Fitzgerald Institute focuses on the development of curriculum appropriate for both new ventures and the entrepreneurial development and growth of existing businesses. The Institute provides the needed link between the University and the community of entrepreneurs critical to business development in the future.

For information, contact the Institute, CBA 412, 330-972-7015.

Institute for Global Business
Akhilesh Chandra, Ph.D., Director
The University of Akron received special grant from the State of Ohio to expand its offerings of undergraduate and graduate degree programs in international business.

As a result of the State grant the Institute for Global Business (IGB) was established in 1996 as an academic unit of the College of Business Administration. The mission of the Institute is to educate students with requisite skills and preparation to assume leadership roles in the global business model.

The Institute coordinates both credit and noncredit programs in international business as the undergraduate and graduate levels. The Institute also offers short courses and seminars to assist in improving international competitiveness of area organizations. With a focus on providing to our students holistic academic experience with significant global learning opportunities, the Institute has been an integral component of the College since its inception.

Institute of Bioscience and Social Research
Joseph Wilder, Ph.D., Director
Mission Statement: Improving Health and Social Services for Individuals and Communities through Research
The Institute of Bioscience and Social Policy (IBSR), located in the Polsky Building, operates under the direction of the Buchtel College of Arts and Sciences. The Institute, which was established in 1998, is dedicated to the research of health and social services. IBSR values and encourages a multidisciplinary approach to research. IBSR offers graduate students an opportunity to work and learn from some of the top social science researchers in the country.

IBSR provides full administrative support for as many as 48 projects per year - projects that are funded by federal, state, and local agencies. Since its opening, the Institute's staff and researchers have brought in more than $43 million in grants and contracts. Research staff members conduct project results, give presentations locally, nationally, internationally, and belong to more than 60 professional organizations. IBSR takes pride in the invaluable staff and dedicated researchers who have contributed to its founding and growth.

IBSR supports research and researchers with the following: analytical experience, research support, research co-op, technical support, facilities, compliance, and administrative/fiscal support.

Institute of Polymer Science and Polymer Engineering
Alamgir Karim, Ph.D., Interim Director
The Institute of Polymer Science and Polymer Engineering provides research support and technical service for the graduate research programs in the Department of Polymer Science and the Department of Polymer Engineering. The technical support staff provide instruction and service for students and faculty in laboratories dedicated to electron microscopy (SEM, TEM EDS, EDX), polymer characterization (SEC, DSC, TGA, light scattering, FTR, UV-vis, X-ray AFM, contact angle goniometer), polymer processing (mixing, extrusion, film formation, molding, filament winding, pultrusion, electrospinning), electronics and electrical repair, machining, glassblowing and a variety of analytical and processing equipment. In cooperation with the Department of Chemistry and Chemical Engineering, the University of Akron NMR Center maintains a satellite nuclear magnetic resonance laboratory equipped with 500 MHz solid-state and solution spectrometers supervised by a professional staff. The Polymer Blending and Compounding Center and the Applied Polymer Research Laboratory provide contract technical service for industry and government.

Institute for Teaching and Learning
Theresa S. Beyerle, Ph.D., Associate Director
Mission
The Institute for Teaching and Learning at The University of Akron coordinates, promotes, and supports efforts to improve the success of our students both inside and outside the classroom, and to advance and disseminate scholarly investigations into the teaching and learning process as well as discipline-specific research activities involving students.

The ITL’s Responsibilities
• Consulting with colleges, departments, and individual faculty teaching, learning, evaluation, and assessment issues
• Assisting faculty with service learning and undergraduate research experiences
• Developing and providing targeted professional development activities, information-gathering and sharing
• Assisting faculty with effective course design, implementation, and assessment of learning
• Providing information, advice, and leadership on teaching and learning matters
• Providing leadership and support for research on the scholarship of teaching and learning, service learning, pedagogy, and inclusive excellence

For more information, visit the ITL website at http://www.uakron.edu/itl or contact ITL at (330) 972-2574.

Intellectual Property Law and Technology Center
Jeffrey M. Samuels, J.D., Director
The Intellectual Property Law and Technology Center in the School of Law is one of approximately 14 such centers in the nation. The center exposes the community to critical thinking in the intellectual property law field, coordinates and implements the Law School intellectual property law curriculum, and hosts an annual Conference on Intellectual Property Law and Policy. The Center works with other schools within the University in the design and implementation of interdisciplinary courses relating to intellectual property law. Commencing the fall of 2005, the Center launched a new Master of Law Program in Intellectual Property Law. In August 2011 the Center began administering a joint J.D./LL.M. program in Intellectual Property Law.

Institute for Life-Span Development and Gerontology
Harvey L. Sterns, Ph.D., Director
The Institute for Life-Span Development and Gerontology, founded in 1976, coordinates multidisciplinary credit certificate programs in gerontology at the undergraduate and graduate levels. There is a combined graduate certificate program with Kent State University. Combined, the two universities offer a diverse range of graduate courses with aging-related content and joint faculty that are nationally and internationally recognized scholars in gerontology.

The Institute of Life-Span Development and Gerontology has grown into a campus-wide program involving more than 63 faculty in over 20 different departments, representing six colleges. Students in the certificate programs carry out field placements at numerous community service settings. There are over 30 courses at the undergraduate and graduate levels. Research, education, training and service support has been received from the U.S. Administration on Aging, National Institute on Aging, U.S. Department of Education, Office of Special Education and Rehabilitation Services, National Institute on Disability and Rehabilitation Research, AARP Andrus Foundation, Ohio Department of Aging, and Area Agency on Aging 10B. The Institute has served as a major site for the Rehabilitation Research and Training Center Consortium on Aging and Developmental Disabilities involving seven universities in six states.

Examples of outreach activities include The Tri-County Senior Olympics.

Microscale Physicochemical Engineering Center (MPEC)
George G. Chase, Ph.D., Director
The Microscale Physicochemical Engineering Center (MPEC) was established in 1996 by faculty with a common research interest in materials composed of very small particles and fibers. These particles and fibers can be used in applications including heterogeneous catalysis, fluid/solid separations, paper-pulp processing, soil remediation, waste water decontamination, and solid transport.

The unique feature of MPEC is the ability to form multi-disciplinary teams of faculty and graduate students to solve specific industrial problems.

The Center promotes networking, provides a forum for industry-university cooperation, and is a consortium of industrial sponsors for fundamental and applied research in microscale physicochemical engineering.
Nursing Center for Community Health
Annette Mitzel, MSN, RN, Director
The Nursing Center for Community Health (NCCH) was founded in 1982 as one of the first academic nurse managed centers in the United States. Operated through the School of Nursing, the NCCH and its six satellite clinics in the community functions as an Academic Nurse Managed Clinic as well as serving as a practice site for faculty and students.

Within the NCCH Advanced Practice Nurses lead an interprofessional team of students and faculty from the College of Health Professions to provide non-emergency, primary, and episodic health care to vulnerable and uninsured community residents.

Serving both the local community and the University of Akron the Nursing Center facilitates collaboration, not only between faculty and students, but among various health care disciplines, building a model for interdisciplinary education, practice, and research. As part of its mission the Center strives to positively affect the health and wellness of the individual and the greater community.

Nutrition Center
Kathy Schupp, MA, RD, CSG, LD, Director
The University of Akron Nutrition Center is a comprehensive center for the study and delivery of effective nutrition interventions. It provides the needed link between UA nutrition expertise and the extensive preventative health care needs of the campus and surrounding community. The center serves as an educational resource for faculty, staff, students and the community, providing nutrition services and conducts research in chronic disease treatment, wellness and disease prevention, nutrition information technology, sports nutrition, food safety and sanitation, and community nutrition.

Taylor Institute for Direct Marketing
The Taylor Institute for Direct Marketing is an educational and research organization focused on Direct Interactive Marketing at The University of Akron, College of Business Administration, on the fifth floor of the Polsky Building.

The Taylor Institute offers two Direct Interactive degrees: a Master of Business Administration (MBA) with a concentration in Direct Interactive Marketing and an undergraduate Advanced Marketing Minor in Direct Interactive Marketing which is available to Marketing and IT Management majors. The Taylor Institute is home to a wide range of marketing courses that focus on emerging direct interactive marketing trends encompassing e-Commerce, Interactive Marketing, Social Media, Integrated Marketing Communications, Marketing Management, Marketing Research, and Marketing Analytics.

University of Akron Magnetic Resonance Center (UA/MRC)
Peter Rinaldi, Ph.D., Director
The MRC provides UA students and faculty, and the industrial and external academic scientific community, with access to routine and state-of-the-art magnetic resonance facilities and technical expertise. These capabilities include instruments for solution and solid state NMR, and the expertise of technical staff with experience in using these instruments for problem solving in chemistry, biological sciences, and polymer science and polymer engineering. Students and faculty are trained in the use of the instruments and NMR techniques in general through an ongoing educational process. The center has instruments in The Knight Chemical and Goodyear Polymer buildings. For more information contact Peter Rinaldi at (330) 972-5990 or peter.rinaldi@uakron.edu or visit our website at http://www.uakron.edu/chemistry/magnet

Training Center for Law Enforcement and Criminal Justice
Michael Jalbert, Interim Director
The Training Center for Law Enforcement and Criminal Justice provides Basic Peace Officer Training Academies, Police Refresher Training, Firearms Requalification, and In-service Seminars.

Training Center for Fire and Hazardous Materials
The Training Center for Fire and Hazardous Materials brings the University, government and industry together into one comprehensive regional center to integrate educational programs, fire and hazardous materials training and other applications of fire and safety technology. The center is chartered from the Division of EMS and offers all State Certified Classes for firefighter certification. The Center employs 190 certified Emergency Services Instructors to fill any training requirement for municipal and business and industry. The center coordinates seminars and workshops presented by the Federal Emergency Management Agency (FEMA), the National Fire Academy, the Division of State Fire Marshal, and other related organizations. Training in all phases of hazardous materials containment and fire prevention and control is provided under contract to various municipalities, industries and agencies. The programs are supported by the faculty of the Fire Protection Technology degree program and the Emergency Management degree program in association with other state and nationally recognized professionals. The Training Center serves a multi-county area, having partnerships with the Medina County Career Center and Cuyahoga Valley Career Center and offering all levels of Fire Classes at the Medina County University Center.

Workforce Development and Continuing Education
The mission of Workforce Development and Continuing Education is to serve the people of Northeastern Ohio by offering courses and programs that increase access to The University of Akron, linking it with community, business and industrial workforce needs.

Counseling Center
The Counseling Center provides psychological counseling, career planning, educational counseling, testing, outreach, and consulting services to the University community. The Center is staffed by a culturally diverse group of licensed psychologists and doctoral trainees. Counseling services are free and confidential to enrolled students. There is a fee for testing services. The Center is located in Simmons Hall, 306. Phone numbers are: Counseling Services (330) 972-7082, and Testing Services (330) 972-7084. Visit our website at http://www.uakron.edu/counseling.

Counseling Services
- Short-term personal counseling and psychotherapy addresses many areas including stress, loneliness, anxiety, and depression; alcohol and drug use; relationships (family, partners, friends), sexual assault; oppression, cultural identity and self-esteem. Biofeedback services are also available for stress management. ULifeline is an informative mental health and wellness link on the Web page.
- Career counseling helps students decide on a major and career direction. Students identify interests, values, abilities and goals and relate these to the world of work. Testing and occupational information is available through counseling, workshops, and on website.
- Educational counseling helps students develop educational goals and motivation, as well as effective study skills. A streaming study skills Web video is on the Web page.
- College Survival Kit workshops cover many topics including improving academic performance, career planning, increasing wellness, and personal issues; as well as providing support groups for students of diverse cultures. Brochures are available.

Testing Services
- Numerous testing programs including, CLEP, college entrance examinations, career assessments, academic placement testing, on-campus academic testing and learning disorder assessments are available.

Career Center
The Career Center’s mission is to provide career services to all students and alumni of The University of Akron. Career Services for students and alumni include opportunities to participate in on-campus interviews with representatives from business, industry, education, and branches of the government. Numerous educational
outreaches are provided throughout the campus community which include a wide variety of topics such as resume writing, job search skills, dress for success, etiquette dining, and mock interviews. In addition, the Career Center offers leadership opportunities for students and sponsors career expos in collaboration with academic colleges, giving students the opportunity to network with hundreds of potential employers. The Career Center maintains a career resource library that enables students and alumni to utilize computers, employer literature, videotapes, job search information, job openings, and career-related books and periodicals. Career consultation services are available and may be scheduled by contacting the Career Center. The Career Center is located in Simmons Hall, Room 301 and can be contacted at (330) 972-7747 or via the web at http://www.uakron.edu/career.

The Career Center also houses the Office of Student Employment. Student Employment helps students find part-time job opportunities both on and off campus. The Office of Student Employment can be reached at (330) 972-7405.

**Student Health Services**

Student Health Services, located in Suite 260 of the Student Recreation and Wellness Center, assists students in meeting their academic and personal goals by addressing their health care concerns by providing quality, cost-effective, culturally competent health care and health education.

The student who becomes seriously ill or suffers a serious injury on campus should be taken to an emergency room at one of the local hospitals without delay. Those persons present in this kind of emergency should call University Police or 911 immediately. The University assumes no legal responsibility or obligation for the expenses of such transportation or for medical services at the hospital.

Student Health and Accident Insurance, designed specifically for students, is available to students enrolled for six or more credit hours. More information on the student health insurance plan is contained in brochures available at Student Health Services or online at www.leonardinsurance.com.

For more information regarding Student Health Services contact (330) 972-7808 or visit the website at http://www.uakron.edu/healthservices.

**Student Services Center**

The Student Services Center provides a single location to assist students with services relating to registration, financial aid, and student accounts. These services include, but are not limited to, adding/dropping classes, reviewing/collecting financial aid documents, explaining tuition and fees charges, and much more.

The Student Services Center is located on the first floor of Simmons Hall and can be contacted at (330) 972-7272.

**Office of Accessibility**

The University welcomes students with disabilities. The mission of the Office of Accessibility is to provide students with full access to and the opportunity for full participation in the academic environment. We are advocates of social justice for students with disabilities and work to end oppression by examining the social, cultural and institutional barriers to inclusion of all students. We embrace the diversity of our student body and celebrate a culturally sensitive and accessible campus through outreach, partnership, and advocacy with many university departments. Our goal is to provide reasonable accommodations and a supportive, well-resourced environment to students with disabilities in order to promote student success in the university environment. For more information, call (330) 972-7928 or (330) 972-5764 (TDD), see our Web site at www.uakron.edu/access, email access@uakron.edu, or visit Simmons Hall Room 105.

**Center for Child Development**

The University of Akron Center for Child Development provides a variety of early childhood programs which are open to students, faculty, staff, and the community. The trained teaching staff provides a stimulating learning environment and opportunities for growth in all areas of development—social, emotional, physical and intellectual. The Center for Child Development is open year round between 7:30 a.m. and 6:00 p.m. Monday through Friday. The program offers hourly flexible and half-day programs for children three to five years old and toilet trained. Full-day sessions are available year round for children 18 months to five years old.

A summer program is also offered for school-aged children. This program is offered from 7:30 a.m. until 6:00 p.m.

For more information call the Center for Child Development, 330-972-8210 or visit the website at http://www.uakron.edu/education/community-engagement/ccd.

**The Student Union**

The Student Union, located in the center of campus, houses numerous functions of student life and student engagement, and serves students, faculty, and staff. This facility offers various food venues, ballroom and meeting rooms, theater, game room, student organization offices, Off-Campus Student Services, Student Judicial Affairs, Computer Solutions—the computer technology store, ZipCard office, DocuZip copy center, bank, Information Center, Barnes & Noble Bookstore, the Buchtelite student newspaper, and Starbucks.

Visit our website at www.uakron.edu/studentunion.

- **Food Areas.** On the first level is Zee’s convenience store, which has a variety of items, including sundry items for the busy student. On the second level are Subway, Auntie Anne’s, Ohio Burger Company, the Union Market, and Starbucks.
- **DocuZip Copy Center,** located on the second level, offers the following services: copying, including color, oversized and reduced copies; binding of materials; mailing facilities for campus, U.S. mail, and United Parcel Service (UPS); literature distribution; and class support files.
- **Barnes & Noble Bookstore** is located on the first level. The primary purpose of the Bookstore is to make available books and supplies required for coursework. In addition, the store also carries a wide range of classroom supplies, paperbacks, engineering and art supplies, photo supplies, greeting cards, University memorabilia and clothing.
- **The Student Union Theatre,** located on the second floor, screens second-run movies as well as occasional first-run sneak previews. The theater also hosts special events and performances.
- **The Information Center,** located on the second floor, is operated seven days a week. The Information Center staff can answer questions regarding department and student organizations, on-campus events, and the Rou Express. Laptops can be checked out for use in the Union at the Information Center. Please call (330) 972-4636 if you need a question answered.
- **Room Reservations** can be obtained in the Student Union. Call (330) 972-8689 to reserve the balcony and meeting rooms located in the Student Union.
- **Computer Solutions,** located on the third level, is The University of Akron’s computer technology store. As an education reseller, personal computer hardware, peripherals, and software are available at educational pricing. The store is a service for students, faculty, and staff. Computer Solutions is an authorized reseller of Apple and Dell products.
- **The Game Room,** located on the first floor, has a pool hall, bowling lanes and video gaming. The bowling lanes feature Extreme glow-in-the-dark bowling. Bowling and Billiards physical education classes are conducted in the Game Room.

**Off-Campus Student Services**

Off-Campus Student Services resource center and administrative offices are located on the first floor of the Student Union. The center provides up-to-date information on apartments and housing around town and transportation options to get to campus including carpools. Educational programs are designed by the center to meet the needs of students living off campus. Much of the general information is posted to the website at www.uakron.edu/offcampus. For additional information students may stop in for assistance during posted hours or reach the center by phone at (330) 972-5500.

**Student Judicial Affairs**

Student Judicial Affairs is the department that receives and reviews referrals that allege violations of the University’s Code of Student Conduct. The University of Akron has the responsibility to protect the rights, health and safety of our academic community and to ensure that the members of our community may pursue their educational goals without undue interference. The development and enforcement of standards of conduct for students is an educational endeavor, which fosters students’ personal and social development. Students are expected to abide by applicable federal, state, and local laws and may be held accountable for any violations in which they are involved. Confidentiality is maintained and records of proceedings are released in accordance with the Family Educational Rights and Privacy Act (FERPA). All hearings follow written procedure and respect the rights of the individuals involved. By becoming familiar with the definition of student misconduct, students can be aware of their rights and responsibilities as a student at The University of Akron and have a successful, rewarding experience.

Students are advised to become aware of the disciplinary procedures published in the University Rules and Regulations Concerning Campus Conduct and Student Discipline Procedures (Code of Student Conduct). The Code of Student Conduct, can be accessed by visiting www.uakron.edu/cja or visiting Student Judicial Affairs, Student Union 216. For more information regarding the Code of Student Conduct, please contact Student Judicial Affairs at sja@uakron.edu or (330) 972-6380.
Campus Safety and Security Information

Safety and Security
This information is provided as part of The University of Akron’s commitment to safety and security on campus and in compliance with the Federal Crime Awareness and Campus Security Act of 1990.

The Campus
The University employs many people to keep the campus safe and secure. The Division of Public Safety provides for student and employee safety and security through the departments of University Police and Environmental and Occupational Health and Safety. The Division of Student Engagement and Success is responsible for security and safety policies governing residence halls, fraternities, and sororities and for teaching students about security and crime prevention.

It is the intent of the University to continue and enhance current safety and security education and awareness programs throughout the year. The purpose of these programs is to assure that the campus community frequently receives information and instruction on University crime and safety policies and procedures, and on drug and alcohol control and prevention.

A safe campus can be achieved only with the cooperation of the entire campus community. The University hopes students will read and become familiar with this material and be responsible for their own safety and the security of others.

University Police
Campus law enforcement is primarily the responsibility of The University of Akron Department of Police. University police provide 24-hour-a-day patrol protection to the campus, parking lots, residence halls, and on-campus fraternity and sorority houses. The police station is located in the Physical Facilities Operation Center at the corner of Hill and South Forge streets and is staffed 24 hours a day. The University’s 44 police officers are fully commissioned by the State of Ohio and have full law enforcement authority identical to municipal police officers and sheriff’s deputies. The Police Department works closely with the Akron Police Department and other law enforcement agencies. Reports are exchanged every business day so that both agencies receive pertinent information. Information is shared through personal contacts and by phone and radio. University and City of Akron police regularly work together at large campus events such as athletic competitions and dances.

UA Police officers have met or exceeded the training standards of the Ohio Peace Officers Training Council. They also receive ongoing in-service and specialized training in first aid, CPR, firearms, defensive tactics, legal updates, and other skills.

UA Police officers enforce laws regulating underage drinking, the use of controlled substances, weapons, and all other incidents requiring police assistance. They also are responsible for public safety services such as crime reports, medical emergencies, fire emergencies, and traffic accidents.

Incidents which may not rise to the level of a violation of law are referred to Student Judicial Affairs. The Code of Student Conduct explains the University’s disciplinary process for an educational program, call extension 2911. To schedule an appointment for an educational program, call extension 2911.

For emergencies, dial 911 from any campus telephone or (330) 972-2911 from a cell phone.

Student Campus Patrol
A student escort service operates 5 p.m. to 2 a.m. during the fall and spring semesters and from 5 p.m. to midnight during summer sessions. By calling extension 7263, an escort will come to the student’s location and accompany him/her to any campus building or parking lot.

Employed and trained by The University of Akron Police Department, the campus patrol teams are easily identified by labeled blue jackets or maroon shirts. These teams assist the University police in patrolling campus parking lots and other campus areas and report suspicious individuals or activities directly to the police dispatch center.

Campus Buildings
Most University academic facilities are open to the public from 7 a.m. until the latest evening classes let out. Administrative buildings are generally locked at 6 p.m. in the fall and spring semesters. Buildings are locked and may be opened only by authorized personnel.

Health and Safety
Members of the Department of Environmental and Occupational Health and Safety routinely inspect the campus for environmental and safety concerns. The Department of Physical Facilities maintains University buildings and grounds and regularly inspects facilities and promptly makes repairs to ensure safety and security. University Police work with both units to report hazards or potential safety and security concerns, such as broken windows and locks. UA police also work with physical facilities personnel to help maintain adequate exterior lighting and safe landscaping practices.

Personal Responsibility
The cooperation and involvement of students, faculty, and staff in any campus safety program is absolutely necessary. All must assume responsibility for their own safety and security and that of their property by following simple, common sense precautions. For example, although the campus is well-lighted, everyone should confine their movements to well-traveled areas. There is safety in numbers, and everyone should walk with a companion or with a group at night. Valuables should be marked with a personal identification number in case of loss or theft. Bicycles should be properly secured when not in use. Automobiles should be locked at all times. Valuables and purses should never be lying in view in a car but locked in the car trunk for safekeeping. Protect your identity and personal information.

Crime Statistics
The University of Akron Police Department complies with reporting standards set by the United States Department of Education guidelines. Our crime statistics can be found at our police department website, www.uakron.edu/safety/annual-safety-report/crime-statistics.dot. A hard copy of crime statistics can be obtained at The University of Akron’s Police Department located at 146 Hill St., Akron, OH 44325-0402.

Drug and Alcohol Prevention
The issue of drug and alcohol abuse concerns the entire University community as well as our surrounding neighborhoods. The federal Drug Free Schools and Communities Act Amendments of 1989 require schools, colleges, and universities receiving federal financial assistance to implement and enforce drug and alcohol prevention programs for students and employees.

The University of Akron prohibits the illegal use, possession, sale, manufacture, or distribution of drugs and alcohol by all students and employees on University premises or as part of any University activity. Any misuse of substances by University students and employees that presents physical or psychological hazard to individuals also is prohibited.

It is the responsibility of The University of Akron to adopt and implement a drug prevention program for its students and employees. The University as an institution, and each of us as individuals, must eliminate the use of illicit drugs and alcohol that contribute to the unrecoverable loss of time, talent, and lives.

Crime Prevention
Through the Office of Community Policing/Crime Prevention, University police officers provide educational programs to students and employees on personal safety, sexual assault/acquaintance rape prevention, drug and alcohol abuse prevention, and related topics. The University Police Department welcomes the chance to talk with any campus group. Candid dialogue between UA Police and the public has created greater confidence in the community to report unlawful activities. These programs are scheduled when requested.

Potential illegal actions and on-campus emergencies can be confidentially reported by any student, faculty, or staff member. Complaints received by UA police which fall outside their jurisdiction will be referred to the appropriate agency, or the complainant will be provided a phone number where the complaint can be filed. Likewise, other agencies refer complaints to University Police when appropriate. The University Police encourage prompt reporting of crimes.

Security considerations in maintenance are a high priority.

Police officers patrol parking lots 24 hours each day. UA Police also offer assistance to motorists with battery jumps, inflating tires, unlocking vehicles, and obtaining fuel.

To request nonemergency assistance, call extension 2911. To schedule an appointment for an educational program, call extension 2911.

Outdoor security phones are at the main entrances of all campus residence halls. UA Police and other campus numbers can be dialed on these phones.

If using an off-campus phone, dial 330-972-2911 before the campus extension.
EMERGENCY PHONE NUMBERS

Call extension 911 on campus to reach UA police immediately.

Police ........................................................................... 2911
Campus Patrol ............................................................... 7263
(Police Nonemergency): ............................................. 2911
Environmental and Occupational
Health and Safety ....................................................... 6866
Fire ..............................................................................911
EMS/Medical .............................................................. 911
Electrical/Plumbing ..................................................... 7415
Hazardous Materials .................................................. 2911
Closing Information .................................................... 7669

Emergency numbers are monitored 24 hours a day. If calling from an off-campus phone, dial 330-972 and then the four-digit number you wish to reach. Use 911 for emergencies when dialing from all campus extensions.

Graduate School

George R. Newkome, Ph.D., Vice President for Research and Dean
Mark B. Tausig, Ph.D., Associate Dean

OBJECTIVES

The purpose of the Graduate School is to provide a quality program of education by the following means:

• Advanced courses in various fields of knowledge beyond the baccalaureate level.
• Opportunities to develop and apply research techniques and to use the resources appropriate to various graduate programs.
• Advancement of student’s knowledge for the benefit of mankind through the efforts of its faculty and students.

Nature of Graduate Education

The Graduate School provides a qualified student with education which may be required for the full development of scholarly and professional capacities, subject to the criteria developed by graduate departments.

Graduate education involves the extension of knowledge. However, it is by no means a mere continuation of undergraduate study. At its best, graduate education is characterized by an able and enthusiastic advanced student who joins faculty leaders to form a community of scholars dedicated to the pursuit of truth. Critical analysis, independence of thought, originality of method, intensity of purpose, freedom from bias, thoroughness of inquiry, keenness of perception and vital creativity combine to produce in the successful student both the professional competence and the breadth of understanding essential to leadership in many areas of human endeavor.

History of the Graduate School

Graduate study began a few years after Buchtel College opened its doors, and the first earned master’s degree was conferred in 1882. The College of Education awarded its first master’s degree in 1924, the Colleges of Engineering and Business Administration in 1959, the College of Fine and Applied Arts in 1967 and the College of Nursing in 1979. The School of Speech-Language Pathology and Audiology (previously the Department of Speech and later, the School of Communicative Disorders), now housed in the College of Health Professions, was formerly a part of the Buchtel College of Arts and Sciences and conferred a master’s degree in 1963. The first earned doctoral degrees were conferred in 1959. Professor Charles Bulger was appointed first dean of graduate work in 1933, and he continued in that capacity until 1950. Professor Ernest H. Cherrington, Jr. served as director of graduate studies from 1955 to 1960 and as dean of the Graduate Division from its establishment in 1960 to 1967. Dr. Arthur K. Brintnall was appointed dean of Graduate Studies and Research in 1967, being succeeded in 1968 by Dr. Edwin L. Lively. Dr. Claibourne E. Griffin succeeded Dr. Lively in 1974 and served in that capacity until 1977. Dr. Joseph M. Walton, associate dean of Graduate Studies and Research, was administrative head of the Graduate School during the 1977-78 academic year. Dr. Alan N. Gent was appointed dean of Graduate Studies and Research in 1978 and served in that capacity until 1986. Dr. Joseph M. Walton served as acting dean of Graduate Studies and Research from 1986 until 1989. In 1989 Dr. Patricia L. Carrell became dean of the Graduate School. Dr. Charles M. Dye was named interim dean in 1993 and became the dean of the Graduate School in 1995 until his retirement in July 2000. Dr. George R. Newkome was appointed Vice President for Research and Dean of the Graduate School in January 2001.

The administrative functions of the Graduate School include establishment of suitable entrance requirements, admission of qualified students, maintenance of high-quality instruction and approval of graduate requirements for advanced degrees.

Graduate Programs

A qualified student who has completed the baccalaureate program with sufficiently high grades may continue studies through the University’s Graduate School in a program leading to the master’s degree as well as to the doctoral degree. An under-graduate student who qualifies may enroll in certain graduate-level classes and apply the credits earned to the total required for the baccalaureate degree. To receive graduate credit for the courses, however, the student must first be admitted to the Graduate School.

The Graduate School offers programs of advanced study leading to the degree of Doctor of Philosophy in chemistry, counseling psychology, elementary education, engineering (biomedical, chemical, civil electrical, engineering applied mathematics, mechanical, and polymer), guidance and counseling, history, integrated biomedicine, nursing, industrial psychology, secondary education, sociology, and urban studies and public affairs. The Doctor of Philosophy programs in nursing and sociology are joint programs with Kent State University. The Doctor of Audiology (Au.D.) Program is a joint degree program administered by The University of Akron and Kent State University. The Doctor of Philosophy program in urban studies and public affairs (admissions currently suspended) is a joint program with Cleveland State University.
State University. Further, the school also offers programs of study leading to master’s degrees with majors in diverse areas as delineated in the following pages. Several departments offer a limited amount of work which may be taken on the graduate level. Such courses may supplement the major program of study for students who do not wish to devote their entire attention to one field.

**Graduate Faculty and the Graduate Council*\**

The graduate faculty is comprised of those members of the faculty who hold appointments at the rank of assistant professor or above and teach graduate courses, supervise theses and dissertations and are generally responsible for the content in the graduate programs at the University. They are appointed by the dean of the Graduate School after recommendation by the department, college dean and Graduate Council. Guidelines for recommendation and appointment include the following:

- quality and experience in upper-level and graduate-level teaching,
- possession of terminal degree in field,
- scholarly publication record,
- activity in research, and
- activity in profession or discipline.

The purpose of the graduate faculty is to encourage and contribute to the advancement of knowledge through instruction and research of highest quality, and to foster a spirit of inquiry and a high value on scholarship throughout the University.

The graduate faculty recommends a student who has been nominated by the student’s college faculty for the appropriate master’s or doctoral degree.

Graduate Council is elected by the graduate faculty. Membership in the council presently includes two members from the College of Engineering, two members from the College of Business Administration, two members from the College of Education, five members from the Buchtel College of Arts and Sciences, two members from the College of Health Professions, one member from the College of Polymer Science and Polymer Engineering, and one student member elected yearly by the Graduate Student Council. Members serve three-year terms and may not succeed themselves. The dean of the Graduate School serves as chair of both the graduate faculty and the Graduate Council.

The functions of the council include examination of proposed graduate programs and course offerings, recommendation of policy for all phases of graduate education, recommendation of persons for membership in the graduate faculty and advising and counseling the dean in administrative matters.

*A exclusive listing of graduate faculty and Graduate Council can be found in the “Directory” of the Graduate Bulletin.

**Graduate Student Government**

All registered graduate students at the University are constituents of the Graduate Student Government (GSG). The government council consists of elected representatives from each of the graduate departments, an executive board of officers, and a faculty advisor.

The objectives of GSG are to govern graduate student affairs, represent graduate student sentiment, and promote interdepartmental social exchange and interaction between students. These objectives are met by appointing members to participate in various administrative committee meetings, such as the Faculty Senate, Graduate Council and Board of Trustees meetings.

Anyone wishing more information or anyone who wants to air a complaint, problem or suggestion concerning graduate students may contact the Graduate School or attend the GSG meetings, where all graduate students are welcome.

**Other Graduate Student Organizations**

Chi Sigma Iota-Alpha Upsilon Chapter
Counseling Psychology Graduate Student Organization
Graduate Nursing Student Association
Industrial/Organizational Psychology Graduate Students
Master of Social Work Student Association
Minority Graduate Student Council
Polymer Engineering Student Organization
Polymer Science Graduate Student Organization
Public Administration and Urban Studies Student Association
Student Association for Graduates in Education (SAGE)

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**SECTION 2. General Information**

**REGULATIONS**

**Student Responsibility**

A student assumes full responsibility for knowing the regulations and pertinent procedures of the Graduate School as set forth in this Bulletin. Normally, the degree requirements in effect at the time a student is admitted to a program will apply through graduation. However, if existing programs are revised, the student has the option of pursuing the revised program as long as all requirements in the revised program are met. Additional information pertaining to programs can be obtained from the appropriate department chair.

**Admission**

Every person who desires to enroll in or audit any graduate credit course must be first admitted or approved by the Graduate School. Online applications for admission to the Graduate School should be submitted electronically at least six weeks (domestic) and six months (international) before the start of the term for which admission is sought in order to allow adequate time for complete processing. Some programs have earlier deadlines. Applicants should contact the departments for more detailed application information. Information on graduate programs, including application deadlines, is available on the Graduate School website at http://www.uakron.edu/gradsch.

First-time applications to the Graduate School must be accompanied by an application fee. The fee for domestic students is $40. The fee for international students is $60. A fee of $40 must accompany all domestic and international reapplications. Applications fees are not refundable under any circumstance.

An official transcript from each college or university attended must also be received by the Graduate School before the application will be processed. This applies to the complete academic record, both undergraduate and graduate. Transcripts should be sent from the institutions attended directly to the Graduate School. The applicant is responsible for seeing that the above conditions are met by the deadlines for filing applications.

All documentation submitted to the Graduate School becomes the permanent property of The University of Akron. The Graduate School converts all documentation into an electronic file. After the document is converted into an electronic file the hard copy document is destroyed, and, as a result, the Graduate School is not able to provide or return original documentation to any applicant.

An offer of admission may only be made to an applicant who meets all admission requirements. It must be recognized that staff, facilities, and other resources are limited, so the number of students accepted will vary among departments and from term to term. An accepted applicant may begin graduate work in the fall, spring or summer semester. The offer of admission is void, however, if the applicant does not register for and attend courses within one year from the semester for which admission was granted. An individual whose offer of admission has lapsed must submit a new application along with the reapplication fee to be reconsidered.

The student is admitted only for the purpose or objective stated on the application for admission. A new request for admission must be filed when the original objective has been attained or when the student wishes to change objectives. The admitted status terminates when the time limits have been exceeded or other conditions for continued admitted status have not been met.

No student will be admitted without approval and acceptance by an academic department within the University, but admission to a department does not necessarily imply candidacy for any graduate degree program in that department. Admission for graduate study in any program can only be granted by the Dean of the Graduate School and the staff of that office.

**Admission Validity**

An applicant is admitted for the term for which he/she seeks admission as indicated on the graduate application. Admission for graduate studies is valid for one year; thus an applicant is provided the option of deferring admission to a later semester within the one year timeframe. The offer of admission is void, however, if the applicant does not register for courses within the one year from the semester of admission. This does not apply to admission to those programs that admit for the fall semester only. Admission to such programs is only valid for that fall term for which admission was granted.

An applicant who is admitted for a given term and then seeks to have that term of admission made retroactive will be required to submit a reapplication to Graduate School along with a fee of $25. There is no guarantee that the academic department will approve admission for retroactive term changes.

**Nonaccredited American School Graduates**

A student holding a baccalaureate degree from a non-accredited American college or university, is required to complete at least 10 semester credits of postbaccalaure-
Transfer Students
A graduate student matriculated in the Graduate School of another college or university who wishes to transfer to The University of Akron to continue graduate education must be in good standing at the other school.

Entrance Qualifying Examinations
The use of examinations to determine admissibility to enter a graduate program or eligibility to continue in that program is the prerogative of the departments offering graduate programs. The department has the right to select the examination and minimum acceptable level of performance. Information and procedure may be obtained from the chair of the appropriate department.

Classification
All students are identified by the Graduate School as being in one of the following categories. Any change must be arranged through the Graduate School.

- **Full Admission** may be given to any applicant who desires to pursue a graduate degree and has a baccalaureate degree from an accredited college or university with an overall grade-point average of 2.75 or better or 3.00 for the last two years (64 semester credits or equivalent); or holds an advanced degree from an accredited college or university in or appropriate to the intended field; or holds a baccalaureate or master's degree from a foreign college or university with first-class standing or its equivalent, plus satisfactory evidence of competence in English. Full admission may also be granted to applicants to the College of Business Administration who meet the college’s admission requirements.

- **Deferred Admission** may be granted to a person who has not met all of the requirements for full admission (2.74-2.5 overall GPA or 2.75 over the last two years). This admission status permits a student to take up to 15 semester credits of graduate coursework. Graduate courses taken under this admission status may be applied to a graduate degree program, but only when all requirements for full admission have been met.

- **Deferral Admission** may be granted to an applicant who has not met the required proficiency in English. This proficiency can be demonstrated by an official TOEFL score of at least 550 on the paper-based TOEFL or 213 on the computer-based TOEFL, or 79 on the internet-based TOEFL, or by the successful completion of courses offered by the University’s English Language Institute (ELI). Students may not enroll in graduate courses until the English proficiency requirement has been satisfied. Note: Some academic departments require higher TOEFL scores.

- **Non-Degree Admission** may be granted to a person who wishes to take graduate courses but who is not working toward a graduate degree. This admission status permits a student to take unlimited credits of graduate coursework. Graduate courses taken under this admission status may be applied later to a graduate degree program, but only when all requirements for full admission have been met.

- **Special Workshop Status** is for a person permitted to take workshops for graduate credit without being admitted to Graduate School. Such permission is granted by the workshop director upon receipt of a signed statement of possession of a baccalaureate degree by the applicant, and terminates upon completion of this workshop. A student admitted to special workshop status must apply through regular channels for any other category. A maximum of six workshop credits may be applied to a graduate degree. A student admitted to special workshop status must apply through regular channels for any other category. A maximum of six workshop credits may be applied to a graduate degree.

- **Transit** may be given to a person who is a regularly enrolled graduate student in good standing in a degree program at another accredited university and has written permission to enroll at The University of Akron. Such permission is valid only for the courses and semester specified, with a maximum of 10 semester credits allowable, and is subject to the approval of the instructor, department chair and Graduate School. A transcript student is subject to registration fees and program degree requirements.

- **Undergraduate Status** is for an undergraduate student at the University who may be granted permission to take one or more graduate-level courses if all the following conditions are met.
  - senior standing (at least 96 credits completed);
  - overall grade-point average of 2.75 or better through preceding term (if a student does not have a 3.00 or better in the major field, special justification will be required from the department);
  - written approval is given by the instructor of the course and the student’s advisor.

Sixty-Plus (60+) Program
Developed in accordance with State Law 3345.27, passed in 1976 and amended in March 1999, the Sixty-Plus Program provides residents 60 and older the opportunity to audit credit classes or take courses for credit on a space-available, non-tuition basis.

To qualify for the Sixty-Plus Program, the prospective student must be 60 years of age or older and have resided in the State of Ohio for at least one year. Sixty-Plus students are exempt from payment of tuition and general service fees but are expected to pay for any books, special fees, laboratory or instructional fees and parking, if needed. Auditing allows students to attend classes, but college credit is not awarded.

Sixty-Plus participants may enroll for 11 or fewer credits unless request to enroll in a greater number of credits is approved by the Senior Vice President and Provost. Participants in this program may be prohibited from enrolling in certain courses or classes for which special course or training prerequisites apply or in which physical demands upon students are inappropriate for imposition upon persons 60 years of age or older, or in which the number of participating regular students is insufficient to cover the University’s or college’s course-related expenses as determined by the University.

Space availability is determined after the degree-seeking students have registered. Sixty-Plus registrations are held immediately before the start of each term and participants must register in-person. Sixty-Plus participants are subject to the same disciplinary and/or governance rules affecting all students.

A Sixty-Plus student will be issued a Student ID Card which will permit them to use specific University facilities and services and obtain student rates for purchases of goods and services.

To be eligible to enroll in a course for credit, the student’s family income must be less than 200 percent of the Federal poverty guidelines as revised annually by the U.S. Secretary of Health and Human Services for a family size equal to the size of the family of the person whose income is being determined.

Course Load
A full load of coursework at the graduate level is normally 9-15 semester credits including audit. Full-time status is defined as a minimum of 9 semester credits; as defined by the Internal Revenue Service for those students with graduate assistantships.
Registration
The responsibility for being properly registered lies with the student, who should consult with the assigned advisor in preparing a program of courses and research. A schedule of courses, hours, class location and registration procedures is obtainable from the registrar.

Cross Registration
Under specific circumstances a graduate student may take one or more graduate courses at Cleveland State University, Kent State University, The University of Akron, Ohio University, or Youngstown State University without registering as a transient student. The course for which a student wishes to register should contribute to the student’s program of study and be unavailable when needed to complete the student’s program at the home institution. The student must be in good standing (GPA>3.0) and within the time limits for degree completion. The graduate program unit at the student’s home institution will establish a graduate special topics or independent study course identification capable of being “tagged” by the home university with a title that will correspond to the course title at the host university and with the initials of that university; i.e. CSU, KSU, or YSU. Registration for such a course is controlled by the home department and will be permitted only upon receipt of an approved Cross Registration form. Cross Registration forms can be obtained online at http://www.uakron.edu/gradsch/current-students/currentforms.dot.

Financial Assistance
The University awards a number of graduate assistantships to qualified students. These assistantships provide stipends of $6,000 to $22,000 plus remission of tuition and some fees and are available in all departments with graduate degree programs. A graduate assistant renders service to the University through teaching and/or research. For information and applications, contact the department chair or school director. Partial tuition scholarships may be available for first-time graduate students on a limited basis. A number of fellowships sponsored by industry and government agencies are available in some departments. For information, contact the chair of the department. Information about student loans can be obtained from the Office of Student Financial Aid.

International Students
The University of Akron welcomes international students and seeks to make their educational experience pleasant and meaningful. Currently, more than 1,000 international students and scholars from 90 countries pursue studies and research at The University of Akron.

Admission
International students may apply to begin their graduate studies for the Fall, Spring, or Summer Sessions. Students should submit their applications at least six months in advance of the dates they wish to begin studying. Graduate students applying for assistantships should submit applications nine months before the term begins for best consideration. The following procedures should be followed:

- Access the online graduate application through the Graduate School website at www.uakron.edu/gradsch. A nonrefundable application fee of $60 must also be submitted.
- An official transcript and degree from all institutions and universities attended. Original records in languages other than English must be accompanied by exact English translations and certified by the school, U.S. consulate, or other legal certifying authority.
- Proof of adequate financial support. An international student must submit to the Office of International Programs, The University of Akron, P.O. Box 483, Akron, OH 44325-3101, the Declaration and Certification of Finances (DCF) and an original statement from the bank showing availability of sufficient funds to cover the cost of the first year of study. The Office of International Programs will prepare the Certificate of Eligibility (I-20A/B or DS-2019) upon receipt of adequate financial support and admission to the University.
- International applicants, U.S. citizens, and Permanent Residents whose native language is not English must submit evidence that they have a sufficient level of English to undertake graduate studies at The University of Akron.

Applicants to graduate programs can demonstrate their English proficiency in one of these ways:

- A minimum score of 550 on the paper-based Test of English as a Foreign Language (TOEFL) or 213 on the computer-based TOEFL or 79 or higher on the internet-based TOEFL. (The following departments require a higher standard of proficiency: the Ph.D. program in Sociology requires a TOEFL of 577/233/90-91; the Ph.D. program in Urban Studies and Public Affairs requires a TOEFL of 577/233/90, English and History require a TOEFL of 590/237/92, and Bio-medical Engineering requires a TOEFL of 590/243/96.) Scores more than two years old will not be accepted. See http://www.toefl.org for information about the TOEFL.
- A minimum score of 6.5 on the International English Language Testing System (IELTS), which is managed by University of Cambridge ESOL Examinations, British Council, and IDP Education Australia. Scores more than two years old will not be accepted. See http://www.ielts.org for information about the IELTS.
- Successful completion of a full course of study in the Advanced Level of the English Language Institute (ELI) at The University of Akron. The ELI is an intensive (20 hour a week) program in English for academic purposes. The Advanced Level course of study is offered every Fall, Spring, and Summer according to the university’s academic calendar. For details about successful completion and about applying to the English Language Institute, see http://www.uakron.edu/eli.
- Successful completion of 24 credit hours of upper-level undergraduate or 18 credit hours of graduate course work at a U.S. university or college in which English is the primary language of instruction. Successful completion is defined as maintaining a 3.0 GPA in full-time, continuous studies. Applicants must submit original transcripts of their course work.
- Successful completion of an undergraduate or graduate program at a university outside the United States in which English is the language of administration and instruction. English must be used for all administrative functions and for all areas of instruction (with the exception of foreign language courses) including course lectures, materials, discussions, readings, and writing assignments. Applicants must submit an original official document from the undergraduate or graduate institution certifying that all of the administrative functions and instruction are conducted in English. The document must be signed by an officer of the institution and carry an official seal. The Associate Dean of the Graduate School at The University of Akron will review the submitted documentation and inform the applicant if he or she has satisfied the English requirement. The decision will be final.

Costs, Financial Aid, and Medical Insurance
Information on estimated expenses for international graduate students on F-1/J-1 visas can be found on the form “Declaration and Certification of Finances” (DCF), which can be downloaded at http://www.uakron.edu/oip/immigration/forms.dot. Annual tuition and living expenses for the 2013-2014 academic year will be approximately $30,000. Tuition is subject to change.

Graduate students may request financial aid through fellowships and graduate assistantships. More detailed information can be found on the Graduate School website.

The University of Akron requires that all international students and visiting scholars and researchers who are taking classes purchase major medical health insurance. International students are also required to purchase catastrophic insurance for themselves and each dependent and/or spouse living with them in the United States. Students are required to purchase The University of Akron Student Health Plan unless they have an alternate health plan that meets the requirement for a waiver: government-sponsored, scholarship, or parental employer coverage.

Immigration Information for Graduate Students on F-1/J-1 Visas
Information on estimated expenses for international graduate students on F-1/J-1 status can be found on the “Declaration and Certification of Finances” (DCF) Form, which can be downloaded at http://www.uakron.edu/oip/immigration/forms.dot Before the Certificate of Eligibility(I-20 or DS-2019) can be issued the DCF Form must be completed and returned to the Office of International Programs along with financial documentation as specified on the form and a copy of the biographical page of the passport. The DCF Form also indicates the additional cost for an F-1 or J-1 student’s dependents should they accompany or join the student at The University of Akron. Students who bring dependents are also required to purchase catastrophic insurance for themselves and each dependent and/or spouse living with them in the United States. Students are required to purchase The University of Akron Student Health Plan unless they have an alternate health plan that meets the requirement for a waiver: government-sponsored, scholarship, or parental employer coverage.
A student on an F-1 or J-1 status transferring to The University of Akron from another U.S. college/university, without leaving the U.S., will be eligible for transfer only if he/she maintains valid nonimmigrant status. The I-20 or DS-2019 will be issued upon submission of the documents proving valid status, meeting the requirements mentioned above, and the release of the SEVIS record to The University of Akron. A new I-20 or DS-2019 must be obtained before the student begins his/her program at The University of Akron.

**International Student Orientation**

The required International Student Orientation takes place one week before Fall classes begin, one week before Spring classes begin, and the Friday before each summer session. Students beginning academic studies during the Summer semesters must attend Fall orientation. The cost is $100 (cost subject to change). The fee will be automatically assessed to student’s account during the first semester of enrollment.

**International Transfer Credits**

Transfer credit from foreign institutions is awarded at the discretion of the academic department with the final approval from the Graduate School. Transfer course work is only accepted from institutions that are recognized by the institution’s governing academic body (i.e. Ministry of Education). The student must have earned a minimum of a “B” (or its equivalent) to be eligible for transfer credit.

**Teaching Assistants**

Applicants whose native language is not English and who expect to become teaching assistants are also required to achieve a minimum score of “Pass” on the U-ADEPT or a 23 or greater on the speaking component of the internet-based TOEFL. This exam must be taken prior to functioning as a teaching assistant. Those for whom English is the native language and who expect to become a teaching assistant must demonstrate proficiency in English through departmental certification. Neither English proficiency testing nor departmental certification is required for research, instructional support, or administrative assistants.

**Note:** International students are encouraged to contact the Office of International Programs directly with questions about housing, climate, insurance, or immigration regulations. Questions concerning degree programs should be directed to the academic department with the final approval from the Graduate School. Transfer course work from foreign institutions is awarded at the discretion of the academic department and the final approval from the Graduate School. Transfer course work is only accepted from institutions that are recognized by the institution’s governing academic body (i.e. Ministry of Education). The student must have earned a minimum of a “B” (or its equivalent) to be eligible for transfer credit.

**Grades**

A student admitted to graduate study under any status at the University is expected to maintain a minimum 3.00 grade-point average (4.00=A”) at all times. A minimum grade-point average of 3.00 is required for graduation. No more than six semester credits of “C,” “C-,” and “C+” may be counted toward the degree. Grades of “D,” “D-,” and “D-” are treated as “F” grades. No grades below “C-” may be counted toward a degree.

Official academic records for graduate students are maintained with a grade-point system as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>C-</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>D+</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>D-</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>0.0</td>
<td>Failure</td>
</tr>
<tr>
<td>CR</td>
<td>0.0</td>
<td>Credit</td>
</tr>
<tr>
<td>NC</td>
<td>0.0</td>
<td>No credit</td>
</tr>
<tr>
<td>AUD</td>
<td>0.0</td>
<td>Audit</td>
</tr>
</tbody>
</table>

The following grades may also appear on the term grade reports or on the official academic record. There are no grade points associated with these grades.

I – Incomplete: Indicates that the student has done passing work in the course but that some part of the work is, for good and acceptable reason, not completed at the end of the term. Failure to make up the omitted work satisfactorily by the end of the following term, not including summer sessions, converts the “I” to an “F.” When the work is satisfactorily completed within the allotted time the “I” is converted to whatever grade the student has earned.

IP – In Progress: Indicates that the student has not completed the scheduled course work during the term because the nature of the course does not permit completion within a single term, such as work toward a thesis.

PI – Permanent Incomplete: Indicates that the student’s instructor and the instructor’s dean have for special reason authorized the change of an incomplete (”I”) or an in progress (”IP”) to a permanent incomplete (”PI”).

WD – Withdraw: Indicates that the student registered for the course but withdrew officially sometime after the second week of the term.

NGR – No Grade Reported: Indicates that, at the time grades were processed for the present issue of the record, no grade had been reported by the instructor.

INV – Invalid: Indicates the grade reported by the instructor for the course was improperly noted and thus unacceptable for proper processing.

*If instructors wish to extend the “I” grade beyond the following term for which the student is registered, prior to the end of the term they must notify the Office of the Registrar in writing of the extension and indicate the date of its termination. It is the responsibility of the student to make arrangements to make up the incomplete work. The faculty member should submit the new grade to the Office of the Registrar in writing.

**Academic Reassessment**

A student who meets all the criteria described below may petition the Vice President for Research and Dean of the Graduate School to remove from his/her graduate cumulative grade point average all those grades earned under the student’s prior enrollment at The University of Akron.

- Degree seeking graduate student
- Previous graduate enrollment at The University of Akron
- Not enrolled at The University of Akron for at least five years prior to current enrollment
- Maintain a current graduate grade point average of at least 3.00 or better for the first 15 hours of re-enrollment credit

If the student’s petition is granted, the following will apply to the reassessment policy:

- This policy only applies to the student’s graduate grade point average.
- All University of Akron grades may be counted toward the subsequent degree program requirements. Degree requirements may only be met by courses included in the calculation of the student’s cumulative graduate grade point average at The University of Akron. Thus, the student who successfully petitions for cumulative graduate grade point average recalculation under this policy automatically forfeits the right to use any of the excluded course work toward the current degree requirements.

A student may exercise this graduate reassessment option only once, regardless of the number of times the student enters/attends a graduate degree program at The University of Akron.

**Repeating Courses**

Any graduate course may be repeated once for credit; however, the degree requirements shall be increased by the credit hour value of each course repeated. The hours and grades of both the original and the repeated section shall be used in computing the grade-point average. Required courses in which a “D” or “F” was received must be repeated.

**Audit Policy**

A student choosing to audit a course must be admitted and indicate audit at the time of registration. The student pays the enrollment fee and may be expected to do all the work prescribed for students taking the course for credit, except that of taking the examination. Any faculty member may initiate withdrawal for a student not meeting these expectations.

**Thesis and Dissertation Credits**

Course number 699 will only be used for courses which indicate credit is being given for a master’s thesis. 899 will only be used for courses which indicate credit is being given for a doctoral dissertation. No credit for 699 or 899 will be given unless the thesis or dissertation is completed.

**Colloquia, Seminars and Workshops**

Colloquium (credit/noncredit grading)- A course that normally involves guests, faculty or graduate students as speakers. The intent of the course is to introduce a broad range of topics using resource personnel. Normally, assignments are limited to class participation.

Seminar (letter grades)- A course that normally involves group discussion or other activities based on assigned material. Grades are awarded based on a combination of assignments, tests and class participation.

Workshop (credit/noncredit grading)- A course that normally operates over a shorter period than a semester or a summer session. Workshops focus on a particular aspect or aspects of a field of study, require a combination of assignments, tests and class participation, and may or may not be permitted to satisfy degree requirements.
Probation and Dismissal

Any student whose cumulative graduate grade-point average falls below 3.00 will be placed on probation and is no longer in good standing. In consultation with the college or department, as appropriate, the dean of the Graduate School will dismiss full-time students who do not return to good academic standing within two consecutive semesters (excluding summers) and part-time students who do not return to good academic standing within the attempting of 15 additional credits.

For the purpose of administration of the full-time and part-time provisions of this policy, full-time and part-time status are determined by the semester in which the student goes on probation. Full-time enrollment constitutes nine or more graduate credits; part-time is less than nine graduate credits.

The dean of the Graduate School, with the approval of the relevant department chair, may also dismiss anyone who fails to make satisfactory progress toward declared goals or who accumulates six semester credits of “C+” or below. The accumulation of six semester credits of “F” will result in mandatory dismissal.

A student dismissed from the Graduate School for academic reasons may not be readmitted for one calendar year, and then only if evidence for expecting satisfactory performance is submitted and found to be acceptable.

Grades of “D+”, “D”, and “D-” are treated as “F” grades. (See previous section on Grades.)

Commencement

Students must file an online application for graduation with the Office of the University Registrar after completion of one-half of the credits required for their degree program or by the following dates:

- March 1 for Spring Commencement
- June 1 for Summer Commencement
- October 1 for Fall Commencement

Students wanting to attend the commencement ceremony must visit the Office of the University Registrar website to respond to the ceremony.

Academic Dishonesty

Students at The University of Akron are an essential part of the academic community, and enjoy substantial freedom within the framework of the educational objectives of the institution. The freedom necessary for learning in a community so rich in diversity and achieving success toward our educational objectives requires high standards of academic integrity. Academic dishonesty has no place in an institution of advanced learning. The University community is governed by the policies and regulations contained within the Code of Student Conduct available at www.uakron.edu/sja, in Student Union 216, or by contacting Student Judicial Affairs at 330-972-6380 or sja@uakron.edu.

The University of Akron considers academic integrity an essential part of each student’s personal and intellectual growth. Instances of academic dishonesty are addressed consistently. All members of the community contribute actively to building a strong reputation of academic excellence and integrity at The University of Akron.

It is each student’s responsibility to know what constitutes academic dishonesty and to seek clarification directly from the instructor if necessary. Examples of academic dishonesty include, but are not limited to:

- Submission of an assignment as the student’s original work that is entirely or partly the work of another person.
- Failure to appropriately cite references from published or unpublished works or print/non-print materials, including work found on the World Wide Web.
- Unauthorized copying of an assignment in computer programming, or the unauthorized examination or view of the computer, specifically during examinations.
- Possession and/or unauthorized use of tests, notes, books, calculators or formulas stored in calculators not authorized by the instructor during an examination.
- Providing and/or receiving information from another student other than the instructor, by any verbal or written means.
- Observing or assisting another student’s work.
- Violation of the procedures prescribed by the professor to protect the integrity of the examination.
- Cooperation with a person involved in academic misconduct.

An incident of academic misconduct may be resolved and a sanction assessed in a meeting between the faculty member and student. If the student and faculty member agree on the facts of the incident and the proposed sanction, the matter can be resolved informally. Prior to an informal resolution the faculty member shall confer with Student Judicial Affairs to determine whether any prior academic misconduct has occurred. If the student and faculty member disagree about the facts of the incident or the proposed sanction, then the matter shall be referred to Student Judicial Affairs. When the matter is referred to Student Judicial Affairs a meeting will occur, and if the evidence indicates it is more likely than not that an academic misconduct violation has occurred the department will follow procedures that can be found in the Code of Student Conduct at www.uakron.edu/sja.

Graduate Student Grievance

Specific procedures are set forth that provide graduate students with a formal channel of appeal and redress of grievances arising out of their academic and/or employment relationship with the University. Discussion of these procedures can be found in the Appendix of this Bulletin.

Ohio Residency Requirements

Payment of a non-resident surcharge is required of any student who does not qualify as a permanent resident of Ohio as defined by Section 3333-1-10 of the Ohio Administrative Code.

A. Intent and Authority

1. It is the intent of the Ohio Board of Regents in promulgating this rule to exclude from treatment as residents, as that term is applied here, those persons who are present in the state of Ohio primarily for the purpose of receiving the benefits of a state-supported education.

2. This rule is adopted pursuant to Chapter 119 of the Revised Code, and under the authority conferred upon the Ohio Board of Regents by Section 3333.31 of the Revised Code.

B. Definitions

For purposes of this rule:

1. “Resident” shall mean any person who maintains a 12-month place or places of residence in Ohio, who is qualified as a resident to vote in Ohio and receive state public assistance, and who may be subjected to tax liability under Section 5747.02 of the Revised Code, provided such person has not, within the time prescribed by this rule, declared himself or herself to be or allowed himself or herself to remain a resident of any other state or nation for any of these or other purposes.

2. “Financial support” as used in this rule, shall not include grants, scholarships, and awards from persons or entities which are not related to the recipient.

3. An “institution of higher education” shall have the same meaning as “state institution of higher education” as that term is defined in section 3345.011 of the Revised Code, and shall also include private medical and dental colleges which receive direct subsidy from the state of Ohio.

4. “Domicile” as used in this rule is a person’s permanent place of abode so long as the person has the legal ability under federal and state law to reside permanently at that abode. For the purpose of this rule, only one (1) domicile may be maintained at a given time.

5. “Dependent” shall mean a student who was claimed by at least one parent or guardian as a dependent on that person’s internal revenue service tax filing for the previous tax year.

6. “Residency Officer” means the person or persons at an institution of higher education that has the responsibility for determining residency of students under this rule.

7. “Community Service Position” shall mean a position volunteering or working for: (a) VISTA, Americorps, city year, the peace corps, or any similar program as determined by the Ohio Board of Regents or (b) An elected or appointed public official for a period of time not exceeding twenty-four consecutive months.

C. Residency for Subsidy and Tuition Surcharge Purposes

The following persons shall be classified as residents of the state of Ohio for subsidy and tuition surcharge purposes:

1. A student whose spouse or dependent student, at least one of whose parents or legal guardian has been a resident of the state of Ohio for all other legal purposes for twelve consecutive months or more immediately preceding the enrollment of such student in an institution of higher education.

2. A person who has been a resident of Ohio for the purpose of this rule for at least twelve consecutive months immediately preceding his or her enrollment in an institution of higher education and who is not receiving, and has not directly or indirectly received in the preceding twelve consecutive months, financial support from persons or entities who are not residents of Ohio for all other legal purposes.

3. A dependent student of a parent or legal guardian or the spouse of a person who, as of the first day of a term enrollment, has accepted full-time, self-sustaining employment and established domicile in the state of Ohio for reasons other than gaining the benefit of favorable tuition rates. Documentation of full-time employment and domicile shall include both of the following documents:

   a. A sworn statement from the employer or the employer’s representative on the letterhead of the employer or the employer’s representative certifying that the parent, legal guardian, or spouse of the student is employed full-time in Ohio.

   b. A copy of the lease under which the parent, legal guardian, or the spouse is the lessee and occupant of rented residential property located in Ohio which parent, legal guardian, or spouse is the owner and occupant; or if parent, legal guardian, or spouse is not the lessee or owner of the residence in which he or she has established domicile, a letter from the owner...
of the residence certifying that parent, legal guardian, or spouse resides at that residence.

D. Additional criteria which may be considered by residency officers in determining residency may include but are not limited to the following:

1. Criteria evidencing residency
   a. If a person is subject to tax liability under Section 5747.02 of the Revised Code;
   b. If a person qualifies to vote in Ohio;
   c. If a person is eligible to receive Ohio public assistance;
   d. If a person has an Ohio driver’s license and/or motor vehicle registration.

2. Criteria evidencing lack of residency
   a. If a person is a resident of or intends to be a resident of another state or nation for the purpose of tax liability, voting, receipt of public assistance, or student loan benefits (if the student qualified for that loan program by being a resident of that state or nation);
   b. If a person is a resident of or intends to be a resident of another state or nation for any purpose other than tax liability, voting or receipt of public assistance (see paragraph (D)(2)(a) of this rule).

3. For purposes of determining residency for tuition surcharge purposes at Ohio’s state-assisted colleges and universities, an individual’s immigration status will not preclude an individual from obtaining resident status if that individual has the current legal status to remain permanently in the United States.

E. Exceptions to the general rule of residency for subsidy and tuition surcharge purposes

1. A person who is living and is gainfully employed on a full-time or part-time and self-sustaining basis in Ohio and who is pursuing a part-time program of instruction at an institution of higher education shall be considered a resident of Ohio for these purposes.

2. A person who enters and currently remains upon active duty status in the United States military service while a resident of Ohio for all other legal purposes and his or her dependents shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person’s domicile.

3. A person on active duty status in the United States military service who is stationed and resides in Ohio and his or her dependents shall be considered residents of Ohio for these purposes.

4. A person who is transferred by his or her employer beyond the territorial limits of the 50 states of the United States and the District of Columbia while a resident of Ohio for all other legal purposes and his or her dependents shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person’s domicile as long as such person has fulfilled his or her tax liability to the state of Ohio for at least the tax year preceding enrollment.

5. A person who has been employed as a migrant worker in the state of Ohio and his or her dependents shall be considered residents of Ohio for these purposes.

6. A person who enters the United States military service while a resident of Ohio and his or her dependents shall be considered residents of Ohio.

F. Procedures

1. A dependent person classified as a resident of Ohio for these purposes (under the provisions of Section C.1. of this rule) and who is enrolled in an institution of higher education when his or her parents or legal guardian removes their residency from the state of Ohio shall continue to be considered a resident during continuous full-time enrollment and until his or her completion of any one academic degree program.

2. In considering residency, removal of the student or the student’s parents or legal guardian from Ohio shall not, during a period of twelve months following such removal, constitute relinquishment of Ohio residency status otherwise established under paragraphs C.1. or C.2. of this rule.

3. For students who qualify for residency status under C.3. of this rule, residency status is lost immediately if the employed person upon whom resident student status was based accepts employment and establishes domicile outside Ohio less than twelve months after accepting employment and establishing domicile in Ohio.

4. Any person once classified as a nonresident, upon the completion of twelve consecutive months of residency, must apply to the institution he or she attends for reclassification as a resident of Ohio for these purposes if such person in fact wants to be reclassified as a resident. Should such person present clear and convincing proof that no part of his or her financial support is or in the preceding twelve consecutive months has been provided directly or indirectly by persons or entities who are not residents of Ohio for all other legal purposes, such person shall be reclassified as a resident. Evidentiary determinations under this rule shall be made by the institution which may require, among other things, the submission of documentation regarding the sources of a student’s actual financial support.

5. Any reclassification of a person who was once classified as a nonresident for these purposes shall have prospective application only from the date of such reclassification.

6. Any institution of higher education charged with reporting student enrollment to the Ohio Board of Regents for state subsidy purposes and assessing the tuition surcharge shall provide individual students with a fair and adequate opportunity to present proof of his or her Ohio residency for purposes of this rule. Such an institution may require the submission of affidavits and other documentary evidence which it may deem necessary to a full and complete determination under this rule.

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**Fees**

All fees reflect changes in 2013-2014 and are subject to change without notice.

**Application Fee** (this fee is not refundable under any circumstances)
- Domestic: $40.00
- International: $60.00

**Retroactive Admission Term Request Fee**: $25.00

**Retroactive Continuous Enrollment Requirement Fee**: $400.00/hr per semester (assessed to doctoral students who are not in compliance with the University’s continuous enrollment policy requiring a minimum enrollment of at least one credit hour for each fall and spring semester)

*Graduate Application Fee is deferred for federally funded TRIO program alumni.

**Tuition Fees**

- Resident student per credit: $412.80
- CBA student per credit: $452.40
- Nurse Anesthesia student per credit: $497.60
- Non-resident student per credit: $706.80
- Non-resident CBA student per credit: $746.40
- Non-resident Nurse Anesthesia student per credit: $791.60

(same fees apply when auditing classes)

**General Fee**

- Per credit hour: $15.81 per credit
- Maximum of: $198.72 per semester

**Administrative Fee**

- Graduate, transient students: $12.00 per term

**Facilities Fee**

- Per credit hour: $18.55
- Maximum of: $222.60 per semester

**Technology Fee**

- Per credit hour: $16.25

**Library Fee**

- Per credit hour: $3.00

**Engineering Infrastructure Fee**

- Per credit hour (all Engineering courses): $20.00

**International Executive MBA Program**

- All inclusive tuition, fees, travel, and program costs:
  - Tuition Deposit (Due July 15): $5,000.00
  - First Semester: $15,000.00
  - Second Semester: $10,000.00
  - Third Semester: $10,000.00
  - Application Fee: $120.00
  - Waiver Exam Fee: $100.00 per exam

**Master of Public Health Program**

- Tuition: $543.00 per credit hour
- Non-resident surcharge: $288.25 per credit hour
- Parking (if enrolled in more than five credit hours): $150.00 per semester

*Plus Administrative, Library, Technology, and Facilities Fees

**Master of Fine Arts**

- Tuition: $531.00 per credit hour
- Non-resident surcharge: $288.25 per credit hour
- Parking (if enrolled in more than five credit hours): $150.00 per semester

*Plus Administrative, Library, Technology, and Facilities Fees
International Students
A student in the United States on a student or other temporary visa is not eligible for any state or federal financial aid. Application for scholarships, short-term loans, graduate assistantships, and some types of employment may be made.

Regulations Regarding Refunds
All fees are subject to change without notice. Students shall be charged fees and/or tuition and other fees in accordance with schedules adopted by the Board of Trustees. Students are advised to consult the website of the Office of Student Accounts/Bursar and this bulletin for tuition and fees. Registration does not automatically carry with it the right of a refund or reduction of indebtedness in cases of failure or inability to attend class or in cases of withdrawal. The student assumes the risk of all changes in business or personal affairs.

Fees Subject to Refund
- Ohio resident tuition and nonresident surcharge
- General service fee
- Facilities fee
- Technology fee
- Course materials fee
- Transportation fee (only if permit is returned)
- Library fee
- Residence hall fees (note: subject to special policy)
- Meal plans (note: subject to special policy)
- Administrative fee (note: only with complete withdrawal)
- Career advantage fee
- Developmental programs support fee
- Engineering infrastructure fee

Amount of Refund
Amount of refund is to be determined in accordance with the following regulations:

- In full
  - if the University cancels the course;
  - if the University does not permit the student to enroll or continue except for disciplinary reasons. No refund will be granted to a student dismissed or suspended for disciplinary reasons;
  - if the student dies before or during the term; is drafted into military service by the United States; is called to active duty; or if the student enlists in the National Guard or Reserve prior to the beginning of the term. Notice of induction or orders to active duty is required if the student is called to active duty. A student who enlists voluntarily for active duty should see “in part” below.

- In part
  - all refund calculations are determined by class length percentage, not by class meetings completed or class meeting percentage. Class length is defined as the number of days between and including the beginning and ending dates of any given term/session (including weekend days and holidays). The standard fifteen-week fall/spring/summer semester percentages which apply are:
    - If 66.667% of class completed 100%
    - If 33.333% of class completed 70%
    - If 20% of class completed 50%
    - If 13.333% of class completed 30%
    - If 6.667% of class completed 20%
    - Greater than 33.333% of class completed 0%

Refunds for course sections which have not been scheduled consistent with the standard 15 week fall/spring/summer semester scheduling pattern will also be calculated on a pro rata basis according to the number of days of the section (class, institute, workshop) which has passed prior to official withdrawal compared to the number of days said section has been scheduled to meet.

Refunds will be determined as of the date of formal withdrawal unless proof is submitted that circumstances beyond control of the student, e.g., hospital confinement, prevented the filing of the official withdrawal earlier, in which case the refund will be determined as of the date of said circumstance. The student assumes responsibility for filing for a refund.

Refunds will be mailed as soon as possible. Refund checks are subject to deduction for any amount owed to The University of Akron by the student. Depending on the date of the withdrawal and the refund due, if any, a balance may still be owed on an installment payment plan contract.

No refund will be granted to a student dismissed or suspended for disciplinary reasons.

The University reserves the right to cancel a course for insufficient enrollment.

Amount of Refund - Noncredit Courses
If a noncredit course is canceled by The University of Akron, a full refund will be issued. Withdrawal requests received up to three business days prior to the first class meeting will result in a full refund, less a $15 processing charge, or an opportunity to transfer to another course. Thereafter, withdrawal requests received up to the beginning of the second class meeting will receive a 50 percent refund. No refunds are issued after the start of the second day of classes.
Refunds for noncredit courses are determined by the date the withdrawal request is received. The refund period cannot be extended if the student fails to attend the first class. Charge cards and refund checks will be processed promptly. Parking permits must be returned to the Workforce Development and Continuing Education Office to receive a refund.

The University reserves the right to cancel a course for insufficient enrollment.

Payment of Tuition and Fees/Withdrawal

Tuition and fees for the semester are to be paid or arranged for payment on or before published due dates. Students who receive financial assistance should be aware that they may be responsible for fees. Students will be responsible for assuring that their personal accounts are up-to-date. Payment plans are available for those students who wish to spread payments over an extended period. Students with accounts that are not fully paid or properly arranged for payment by the end of the semester may be prevented from registering for subsequent coursework. If a student enrolls in classes and then decides not to attend, it is still the student's responsibility to drop his or her classes and to notify the University in order to prevent unnecessary charges.

SECTION 3. Academic Requirements

MASTER'S DEGREE REQUIREMENTS

Admission

When a student is admitted to graduate study, an advisor is appointed by the chair of the major department. A student who is academically qualified in general but deficient in course preparation may be required to make up the deficiencies at the post-baccalaureate level. This may be recommended prior to beginning graduate work, or in some cases, can be done simultaneously.

Residency Requirements

There are no formal residency requirements for the master's degree. A student may meet the degree requirements of the Graduate School and the department through either full- or part-time study.

Continuous Enrollment Requirement

There is no formal Graduate School continuous enrollment requirement for the master's degree. Individual master's programs, however, may require continuous enrollment. Students should consult their advisors about this requirement.

Time Limit

All requirements must be completed within six years after beginning graduate-level coursework at The University of Akron or elsewhere. Extension of up to one year may be granted in unusual circumstances by the Graduate School upon written request by the student and recommendation by the adviser, department head, and college dean.

Credits

A minimum of 30 semester credits of graduate work is required in all master's degree programs. This includes thesis credit. Some departments require more (see departmental requirements). A minimum of two-thirds of the total graduate credits required in any master's program must be completed at the University. A maximum of six workshop credits may be applied to a master's degree. Such credits must be relevant to the degree program, recommended by the student's advisor and approved by the dean of the Graduate School.

It should be noted that the requirements listed by department elsewhere in this section refer to the minimum necessary for a degree. It is entirely within the prerogative of the department to assign additional credits of coursework or other requirements in the interest of graduating a fully qualified student.

No graduate credit may be received for courses taken by examination or for 500-numbered courses previously taken at the 400-number course level as an undergraduate without advance approval from the dean of the Graduate School. "Repeat for change of grade" is not available at the graduate level.

Transfer Credits

Up to one-third of the total credits required for a master's degree may be transferred from an accredited college or university, including The University of Akron. Departments and colleges may set more restrictive limits. All transfer credit must be at the "A" or "B" level (4.00 to 3.00) in graduate courses. The credits must be relevant to the student's program as determined by the student's academic department and fall within the six-year time limit. A University of Akron student must receive prior approval from his or her academic department for transfer courses taken elsewhere. A block transfer of credit may be requested if the student holds a prior graduate degree from an accredited college or university, including The University of Akron. A block transfer of credit does not apply to the student's six-year time limit for degree completion.

A student seeking to transfer credit must have full admission and be in good standing at The University of Akron. Transfer credit shall not be recorded until a student has completed 12 semester credits at The University of Akron with a grade-point average of 3.00 or better. Transfer credit from other institutions shall not be computed as part of a student's University of Akron grade point average.
Optional Department Requirements

Each department may set special requirements with regard to entrance examinations, qualifying examinations, foreign language, required courses and thesis. Details are available from the chair of the major department.

Graduation

To be cleared for graduation, a candidate must have completed coursework with a minimum cumulative graduate grade-point average of at least 3.00; submitted an online application for graduation with the University Registrar; paid all applicable fees; and met any other applicable department and University requirements.

If a thesis is required, a final online submission, properly prepared, is due to the Graduate School at least three weeks prior to commencement. This copy must be signed by the adviser, faculty reader, department head, and college dean prior to submission to the Graduate School. A manual titled Guidelines for Preparing a Thesis or Dissertation is available online and all copies of the thesis must conform to these instructions.

DOCTORAL DEGREE REQUIREMENTS

A master’s degree is not a prerequisite for the doctorate; however, the first year of study after the baccalaureate will be substantially the same for both the master’s and doctoral student. Some programs admit students to doctoral programs directly after the bachelor’s degree; others require a master’s degree. No specific number of courses or sequence of courses constitutes a doctoral program or assures attainment of the degree. A formal degree program consists of a combination of courses, seminars and individual study and research that meet the minimum requirements of the Graduate School and those of the committee for each individual student.

Admission

Usually, a student is not officially considered as a doctoral student until completion of a master’s program or its equivalent and approval for further study. Departments offering doctoral degree programs review each candidate carefully before recommending admission.

A minimum grade-point average of 3.00 is required for graduation of a candidate for all doctoral degrees.

Residency Requirements

A doctoral student may meet the degree requirements of the Graduate School and department by full-time study or a combination of full- and part-time study. The minimum residency requirement for a doctoral candidate in all programs is at least two consecutive semesters of full-time study and involvement in departmental activities. Full-time study is defined as 9-15 semester credits, except for graduate teaching and research assistants for whom full-time study is specified by the assistantship agreement. The summer sessions may count as one semester provided that the candidate is enrolled for a minimum total of six semester credit hours per combined summer terms. Programs vary in their requirements beyond the minimum, e.g., credits or courses to be completed, proper time to fulfill the residency requirement, and acceptability of part-time employment.

Before a doctoral student begins residency, the student’s advisor and the student shall prepare a statement indicating the manner in which the residency requirement will be met. Any special conditions must be detailed and will require the approval of the student’s committee, the department faculty members approved to direct doctoral dissertations, the collegiate dean, and the dean of the Graduate School.

Continuous Enrollment Requirement

The Graduate School requires that a doctoral student register for a minimum of one graduate credit as approved by his or her adviser during each fall and spring semester. Individual departments may exceed this minimum requirement. A doctoral student should consult with his or her academic department.

Time Limit

All doctoral requirements must be completed within ten years of starting coursework at The University of Akron or elsewhere. This refers to graduate work after receipt of a master’s degree or the completion of 30 semester credits. Extension of up to one year may be granted in unusual circumstances by Graduate School upon written request by the student and recommendation by the adviser, department head, and college dean.

Credits

A doctorate is conferred in recognition of high attainment and productive scholarship in some special field of learning as evidenced by the satisfactory completion of a prescribed program of study and research; and the successful passing of examinations covering the special field of study and the general field of which this subject is a part. Consequently, the emphasis is on mastery of the subject rather than a set number of credits. Doctoral programs generally encompass the equivalent of at least three years of full-time study at the graduate level. A minimum of 50 percent of the total credits above the baccalaureate required in each student’s doctoral program must be completed at the University. A maximum of six workshop credits may be applied to a doctoral degree. Such credits must be relevant to the degree program, recommended by the student’s advisor and approved by the dean of the Graduate School.

Transfer Credit

Up to one-half of the total credits above the baccalaureate required in a doctoral program may be transferred from an accredited college or university, including The University of Akron. Departments and colleges may set more restrictive limits. All transfer credit must be at the “A” or “B” level (4.00 to 3.00) in graduate courses. The credits must be relevant to the student’s academic program as determined by the student’s academic department and fall within the ten-year limit. A University of Akron must receive prior approval of his or her academic department for transfer courses taken elsewhere.

Individual course transfer of credit must fall within the ten-year time limit to complete degree requirements. A block transfer of credit may be requested if a student holds a prior graduate degree from an accredited college or university, including The University of Akron. No more than 30 semester credits may be transferred from a single master’s degree. A block transfer of credit does not apply toward the student’s ten-year time limit to complete the degree.

A student seeking to transfer credit must have full admission and be in good standing at The University of Akron. Transfer credit shall not be recorded until a student has completed 12 semester credits at The University of Akron with a grade-point average of 3.00 or better. Transfer credits from other institutions shall not be computed as part of a student’s University of Akron grade point average.

Language Requirements

There is no University-wide foreign language requirement for the doctoral degree. The student is required to demonstrate one of the following skills depending upon the particular program.

- Plan A: Reading knowledge, with the aid of a dictionary, of two approved foreign languages. At the discretion of the major department an average of “B” in the second year of college-level courses in a language will be accepted as evidence of proficiency in reading knowledge for that language. English may be considered as one of the approved foreign languages for a student whose first language is not English; and demonstrated competence in research technique (e.g., statistics and/or computers) may be substituted for one of the two foreign languages. Under the last option, each department should define competence and publicize.

- Plan B: Comprehensive knowledge of one approved foreign language, including reading without the aid of a dictionary and such additional requirements as the department may impose.

- Plan C: In certain doctoral programs the demonstration of competence in appropriate research skills may serve as a substitute for the foreign language requirements.

- Plan D: In certain doctoral programs there is no foreign language requirement.

Optional Department Requirements

Each department may determine requirements for a doctoral student with regard to entrance examinations, qualifying examinations, preliminary or comprehensive examinations and course sequences.

Dissertation and Oral Defense

The ability to do independent research and demonstrate competence in scholarly exposition must be demonstrated by the preparation of a dissertation on some topic related to the major subject. It should represent a significant contribution to knowledge, be presented in a scholarly manner, reveal the candidate’s ability to do independent research and indicate experience in research techniques.

A doctoral dissertation committee supervises and approves the dissertation and administers the oral examination upon the dissertation and related areas of study. This examination is open to the graduate faculty. The dissertation and oral examination must be approved by the committee before the dissertation is submitted to the Graduate School.

A final online submission of the dissertation is due in the Graduate School at least three weeks prior to commencement. This copy must be signed by the adviser, department head, and college dean prior to submission to the Graduate School. A manual titled Guidelines for Preparing a Thesis or Dissertation is available online and all copies of the dissertation must conform to these instructions.
Graduation
To be cleared for graduation, a candidate must have completed coursework with a minimum cumulative graduate grade-point average of at least 3.00; submitted an approved dissertation and passed an oral examination; submitted an online application for graduation with the University Registrar; paid all applicable fees; and met any other applicable department and University requirements.

GRADUATE CERTIFICATE REQUIREMENTS

Admission
A student interested in pursuing a graduate certificate program must possess at least a baccalaureate degree from an accredited college or university. Some certificate programs may require that a student already be enrolled in a specific graduate degree program. Students should consult with the academic department.

Residency Requirements
There are no formal residency requirements for graduate certificate programs. A student may meet the program requirements of the Graduate School and the department through full- or part-time study.

Time Limit
All requirements must be completed within three years after beginning graduate-level coursework at The University of Akron or elsewhere unless concurrently pursuing a master’s or doctoral degree. When this is the case the graduate degree program time limits apply for completion of the certificate requirements. Extension of up to one year may be granted in unusual circumstances by the Graduate School upon written request by the student and recommendation by the adviser, department head, and college dean.

Credits
The number of credits required to earn a graduate certificate varies by certificate program. A minimum of two-thirds of the total number of graduate credits required in any certificate program must be completed at The University of Akron. Unless otherwise specified, no substitute courses will be permitted to meet certificate program requirements.

No graduate credit may be received for courses taken by examination or for 500-numbered courses previously taken at the 400-number course level as an undergraduate without advance approval from the dean of the Graduate School.

Transfer Credits
Up to one-third of the total graduate credits required for a certificate program may be transferred from an accredited college or university, including The University of Akron. However, the total number of credits that may be transferred may not exceed the total allowable transfer credits for a concurrent graduate degree program. All transfer credit must be at the “A” or “B” level in graduate courses. The credits must be relevant to the student’s program. A University of Akron student must receive prior approval from his or her academic department for transfer courses taken elsewhere.

A student seeking to transfer credit must have full admission and be in good standing at The University of Akron. Transfer credit shall not be recorded until a student has completed nine semester credits at The University of Akron with a grade-point average of 3.00 or better. This applies to students who are not concurrently enrolled in a graduate degree program. Twelve semester credits must be completed at The University of Akron with a grade-point average of 3.00 or better for those students concurrently pursuing a graduate degree.

Individual course transfer of credit must fall within the three-year time limit for those students pursuing only a graduate certificate. The six-year time limit applies to those students concurrently pursuing a master’s degree, and the ten-year time limit applies to those students concurrently pursuing a doctoral degree. No block transfer of credit is permitted for students pursuing only a graduate certificate.

Award of Graduate Certificate
To be cleared for award of a graduate certificate, a candidate must have completed coursework with a minimum cumulative graduate grade-point average of at least 3.00; submitted an online application for graduation with the University Registrar; paid all applicable fees; and met any other applicable department and University requirements.

Students enrolled in a certificate program without concurrent enrollment in a graduate degree program will not be permitted to participate in the commencement ceremony.

SECTION 4.
Graduate Studies

Buchtel College of Arts and Sciences

Chandrindra, Ph.D., Dean
Kim C. Calvo, Ph.D., Associate Dean
Bill Lyons, Ph.D., Acting Assistant Dean
Neil Sapienza, M.S., Associate Dean
Linda M. Subich, Ph.D., Associate Dean
Sheldon B. Wrice, Ed.D., Associate Dean
John Zipp, Ph.D., Associate Dean

Mission Statement
The mission of the Buchtel College of Arts and Sciences is to provide high quality education in fine arts, humanities, natural sciences, and social sciences. These varied disciplines constitute the foundation of a liberal arts education.

The College strives to foster excellence in teaching, scholarship, and service in a positive environment that will enhance lifelong learning and student accomplishment.

The College develops independent learning, critical thinking, personal responsibility, and leadership to prepare graduates to fulfill their career objectives in an environment of societal and cultural change.

Organization
The Buchtel College of Arts and Sciences has four administrative divisions: Fine Arts, Humanities, Natural Sciences, and Social Sciences.

The Fine Arts Division includes the Myers School of Art, School of Dance, Theatre, and Arts Administration, School of Family and Consumer Sciences, and School of Music. The Arts Division places a premium on learning by doing. Students study side-by-side with talented and caring faculty members who are committed to helping them turn their aspirations into accomplishments.

The Humanities Division includes the departments of Anthropology and Classical Studies, English, Modern Languages, and Philosophy. In these disciplines students learn about the evolution of diverse civilizations, their languages, literatures, cultures, and their contributions to our accumulated wisdom.

The Natural Sciences Division includes the departments of Biology, Chemistry, Computer Science, Geosciences, Mathematics, Physics, and Statistics. Students explore physical and biological processes and learn to use mathematics, the language of science. Student research in the division ranges from the characterization of molecules to mapping the expanses of the universe to mathematical modeling of real processes. Students learn how our physical world works and use this knowledge to create the technologies of the future.

The Social Sciences Division includes the School of Communication, the departments of Economics, History, Political Science, Psychology, Public Administration and Urban Studies, and Sociology. In these disciplines students observe individuals, closely knit organizations, whole cultures developing over the centuries (some-time at peace and sometimes at war), the economic and geographical realities affecting these populations, and the ways societies organize themselves for harmony, protection, and prosperity.

DOCTOR OF PHILOSOPHY DEGREE
The following programs leading to the Doctor of Philosophy degrees are offered in the Buchtel College of Arts and Sciences: the Doctor of Philosophy in Chemistry, the Doctor of Philosophy in Counseling Psychology, the Doctor of Philosophy in History, the Doctor of Philosophy in Integrated Bioscience, and the Doctor of Philosophy in Psychology. The Doctor of Philosophy in Sociology is offered jointly with Kent State University and the Doctor of Philosophy in Urban Studies and Public Affairs with Cleveland State University.

Doctor of Philosophy in Chemistry (315000PHD)
The Doctor of Philosophy in Chemistry is granted for high scholarly achievement in analytical, inorganic, organic, physical or biochemistry. Students with either a baccalaureate or master’s degree may be admitted to the program. They must satisfy the following requirements to receive the degree:
• Complete a course of study designed in consultation with an advisor or advisory committee. This consists of the completion of at least 90 credits beyond the baccalaureate degree, including 24 credits of appropriate coursework.
• Complete monthly cumulative exam requirement.
• Complete oral exam requirement.
• Complete seminar requirement.
• Defend dissertation in an oral examination.
• Complete all general requirements for the doctor of philosophy degree.

Admission Requirements
In addition to submission of the graduate application and official transcripts applicants must submit three letters of recommendation and a statement of purpose. Application materials should be submitted by April 15 for fall enrollment and by October 15 for spring enrollment.

Interdisciplinary Option in Chemical Physics
The faculty in the Departments of Chemistry and Physics jointly offer an option leading to a Ph.D. in Chemistry for students who elect the interdisciplinary field of chemical physics.

Admission Requirements
Applicants for the Chemical Physics Option may be admitted with either a baccalaureate or a master’s degree, in either chemistry or physics. All applicants must have their graduate application and credentials evaluated by the Chemistry Department. All admission requirements for the Doctor of Philosophy in Chemistry, as given in this Graduate Bulletin, shall apply to applicants for admission to the Chemical Physics Option.

Graduate students in good standing in the Physics Department may apply for admission as above. Successful applicants should have some advanced chemistry coursework work (200-level and above) and endorsement by the chair of the Physics Department.

Degree Requirements
The applicable degree requirements for the Chemical Physics option are those of the Doctor of Philosophy in Chemistry, as stated in the Graduate Bulletin. These degree requirements consist of the following:
• complete a course of study designed in consultation with an advisor or advisory committee, consisting of at least 90 credits beyond the baccalaureate degree, including 24 credits of appropriate chemistry coursework and approved physics electives;
• complete the requirements of the monthly cumulative exams, the oral exam, and the seminar;
• defend the dissertation in an oral examination;
• complete all general requirements for the Doctor of Philosophy degree.

Students entering with the endorsement of the Physics Department must choose an advisor in the Physics Department holding a joint appointment in Chemistry; other students must select as research advisor a participating faculty member in the Chemistry Department. Students entering the program with principle preparation in physics may be required to audit certain undergraduate prerequisites for chemistry graduate courses, and visa versa for students whose principle preparation is in chemistry.

Doctor of Philosophy in Integrated Bioscience
(310001PHD)
The Departments of Biology, Mathematics, Biomedical Engineering, Chemical and Biomolecular Engineering, Chemistry, Civil Engineering, Computer Science, Geology, Physics, and Polymer Science and Polymer Engineering offer an interdisciplinary Ph.D. program in Integrated Bioscience. Students are required to incorporate an integrative aspect to their biologically-based research project that will incorporate approaches from multiple disciplines, and all students will have advisers on their committees that include faculty from at least two of the participating departments. This program is designed to train students to understand modern biology in the context of integrated biological systems. This program will combine modern biology, bioengineering, bioinformatics, biochemistry, and biopolymers with the central unifying theme of connection across levels of biological organization. The program is composed of six areas of excellence: (1) molecular cell biology and genetics; (2) physiology and organismal biology; (3) ecology and evolutionary biology; (4) biochemistry and biopolymers; (5) bioinformatics and computational biology; and (6) bioengineering. Integrating information drawn from these areas of excellence will provide students with high-demand, specific skills as well as allow them to develop integrative thinking and problem-solving expertise that will be critical for progressing in the ever-expanding realm of biosciences.

Admission Requirements
The applicant must meet the University admission requirements and have an undergraduate degree from an accredited institution. Applicants must submit GRE scores, although not required it is highly recommended that applicants also submit subject GRE in the field of undergraduate degree, three letters of recommendation, a statement of career goals and research interests, and note up to five faculty (rank-ordered) which they would be interested in having as their faculty adviser(s). Applicants are encouraged to contact their prospective Ph.D. advisers prior to submitting their formal applications. International students should contact The University of Akron Graduate School for specific admission requirements. Applications will be ranked according to:
• Academic background as evidenced by grade point average of at least 3.0
• GRE scores
• Letters of recommendation (three preferred)
• Willingness of one or more potential advisors to take student on as an advisee

Applications are accepted on a rolling basis. Review of applications begins in mid-January for fall enrollment.

Requirements
• Core Courses (12 credits):
  3100:701 Research Techniques in Integrated Bioscience 4
  3100:702 Communicating in Integrated Bioscience 2
  3100:703 Problem Solving Integrated Bioscience 3
  3600:665 Ethics of Science 3
• Complete four credits of 3100:797/798 Integrated Bioscience Colloquium
• Complete a minimum of nine credits of elective courses determined by student advisory committee
• Complete a total of 80 credits for the degree
• Must serve as a teaching assistant for at least one semester
• Complete written and oral qualifying exam
• Complete research proposal defense
• Complete seminar requirement
• Complete dissertation credits (variable with 55 credit maximum)
• Defend dissertation in an oral examination
• Complete all general requirements for the doctor of philosophy degree

Doctor of Philosophy in Counseling Psychology
(376000PHD)
The University of Akron offers a doctoral program in Counseling Psychology. The Collaborative Program in Counseling Psychology allows the student a choice of entry points through the Psychology Department of the Buchtel College of Arts and Sciences or through the Counseling Department of the College of Education. The Collaborative Program in Counseling Psychology is accredited by the American Psychological Association. Students in both departments are expected to attain a level of broad scientific competence in the core areas of psychology: the biological, social, cognitive-affective, and individual bases of human behavior. Practicum and internship experiences are also required of all students and range from skill building in basic psychological assessment and counseling, to actual work with clients, to a year-long, full-time internship in an applied service setting. Pertinent information regarding the emphases, orientation, and coursework for the Psychology Department entry point is included below. Students receive exposure to both colleges through shared coursework and faculty involvement with exams and dissertations.

The Department of Psychology offers a five-year Counseling Psychology program leading to a doctoral degree and, in general, is geared toward students who hold a B.A. in psychology with cumulative undergraduate grade point average of 3.0 or above and a grade point average of 3.25 or above on all psychology coursework. Program emphasis is strongly placed on a scientist-practitioner model of training. Beyond the basic core areas of psychology, students are expected to establish specific competencies in the areas of theory, research, and practice of Counseling Psychology. Academic preparation includes theories of psychotherapy, supervision, diversity issues in counseling psychology, vocational psychology, testing theory and practice, research and statistics, and professional issues. Research and publica-

The University of Akron offers a doctoral program in Counseling Psychology. The Collaborative Program in Counseling Psychology allows the student a choice of entry points through the Psychology Department of the Buchtel College of Arts and Sciences or through the Counseling Department of the College of Education. The Collaborative Program in Counseling Psychology is accredited by the American Psychological Association. Students in both departments are expected to attain a level of broad scientific competence in the core areas of psychology: the biological, social, cognitive-affective, and individual bases of human behavior. Practicum and internship experiences are also required of all students and range from skill building in basic psychological assessment and counseling, to actual work with clients, to a year-long, full-time internship in an applied service setting. Pertinent information regarding the emphases, orientation, and coursework for the Psychology Department entry point is included below. Students receive exposure to both colleges through shared coursework and faculty involvement with exams and dissertations.

The Department of Psychology offers a five-year Counseling Psychology program leading to a doctoral degree and, in general, is geared toward students who hold a B.A. in psychology with cumulative undergraduate grade point average of 3.0 or above and a grade point average of 3.25 or above on all psychology coursework. Program emphasis is strongly placed on a scientist-practitioner model of training. Beyond the basic core areas of psychology, students are expected to establish specific competencies in the areas of theory, research, and practice of Counseling Psychology. Academic preparation includes theories of psychotherapy, supervision, diversity issues in counseling psychology, vocational psychology, testing theory and practice, research and statistics, and professional issues. Research and publication are greatly encouraged. Graduates typically seek out academic teaching, research and training positions, as well as positions in counseling centers and other mental health agencies.

Admission Requirements
The applicant must meet the University admission requirements and have an undergraduate degree from an accredited institution. Applicants must submit GRE scores, although not required it is highly recommended that applicants also submit subject
• Minimum of three letters of recommendation attesting to success in the field and probable academic success at the doctoral level.

Departures from the described program for Psychology Department entry may be made only with the approval of the counseling psychology program faculty.

Requirements
The curriculum reflects the interdepartmental blend of the Collaborative Program in Counseling Psychology. Electives and other classes are to be planned along with the student's advisor.

Doctor of Philosophy in History
(340000PHD)
The Doctor of Philosophy in History is granted primarily for high scholarly achievement in four fields of study selected by the student and for demonstrated ability to pursue independent research. Each student must:
• Fulfill admission requirements of the Graduate School.
• Complete all general requirements for the Doctor of Philosophy degree.
• Demonstration of competency in four fields of study selected from the following areas in which the student will be expected to pass written and oral comprehensive exams: ancient, medieval, early modern Europe to 1789, modern Europe since 1750, America to 1877, United States since 1877, Latin America, Far East, Africa, Middle East, South Asia, and History of Science. These four fields must include at least one each in American, European, and non-Western history. The student's dissertation will fall within one of the four chosen fields;
• Satisfactory performance in written and oral comprehensive examinations;
• Defense of the dissertation in an oral examination.

A reading knowledge of two foreign languages will be required. With the approval of the student's doctoral committee and the Graduate Committee, the student may substitute a cognate field for one of the two required languages when it seems appropriate for the student's general program.

A degree will be awarded to a student who, besides fulfilling the general requirements, has met the following specific requirements:
• Fulfill admission requirements of the Graduate School and department requirements as follows:
  - Completion of master's degree including 30 graduate credits;
  - Attainment of a graduate grade-point average (GPA) of 3.25;
  - Completion of Graduate Record Examination General Test;
  - Securing of three letters of recommendation from persons familiar with applicant's academic work;
  - Submission of a brief personal statement of professional goals and reasons for choosing the field of I/O or Adult Development and Aging and The University of Akron;
  - Submission of a vita outlining educational and professional experiences.

Application materials must be received by January 15.

• Major field:
  - A minimum of 94 graduate credits including a 30-credit master's program. A student may be required to complete additional credits beyond the 94 minimum credit requirement;
  - Completion of Ph.D. core courses in the student's specialty area: industrial/organizational or adult development and aging. Core courses are specified in the Department of Psychology Graduate Student Manual. The student is required to maintain at least a 3.5 GPA in core courses and overall courses;
  - Completion of additional required and elective courses to be planned in conjunction with the student's faculty advisor and subject to approval by the industrial/organizational or adult development and aging committees.

• Written comprehensive examinations:
  - Satisfactory performance on doctoral written and oral comprehensive examinations in the student's major area of industrial/organizational psychology or adult development and aging (refer to the department's graduate student manual).

• Dissertation research:
  - Completion of 3750:899 Doctoral Dissertation; (minimum 12 credits);
  - Satisfactory performance on final examination and defense of dissertation research.

• Other requirements:
  - Refer to the department's graduate student manual for other requirements or guidelines;
  - Complete and fulfill general doctoral degree requirements of the Graduate School.

Doctoral language requirements or appropriate alternative research skills and techniques may be prescribed by the student's advisory committee, depending upon the career plans of the student and upon the academic and/or scientific requirements of the dissertation.

The Psychology departments at The University of Akron and Cleveland State University offer a joint doctoral program in the Psychology of Adult Development and Aging. Students admitted to the program are required to take approximately equal amounts of coursework at each institution. The coursework covers the areas of
research methods/design, foundation courses in adult biobehavioral functioning, adult psychosocial functioning, and advanced research seminars. The doctoral degree will require a minimum of 94 credit hours of coursework comprised of 78 classroom hours from the following:

- 3750:601 Psychological Research Using Quantitative and Computer Methods I
- 3750:602 Psychological Research Using Quantitative and Computer Methods II
- 3750:640 Core IV: Biopsychology
- 3750:727 Psychology of Adulthood and Aging
- 3750:740 Industrial Gerontology
- 3750:754 Research Methods in Psychology
- 3750:780 Graduate Seminar in Psychology: Additional Research Methods Courses (Multivariate Methods, Factor Analysis, Structural Equation Modeling)
- 3750:731 Perception, Attention, and Aging
- 3750:732 Cognition and Aging
- 3750:736 Psychopharmacology in Adulthood
- 3750:728 Social Aging

Cleveland State University Courses:

- PSY 549 Mental Health and Aging (4)
- PSY 561 Learning, Motivation, and Emotion (4)
- PSY 563 Health Psychology (4)
- PSY 655 Motor and Cognitive Disorders of Aging (4)
- PSY 656 Sensation and Motor Functions
- PSY 660 Ethical and Legal Issues (4)
- PSY 663 Neuropsychology (4)

In addition, students will complete four thesis waiver credit hours, six dissertation credit hours, and six thesis/dissertation independent study credit hours (for a minimum total of 94 credit hours). An individual student’s point of entry into the program is at one of the two partner institutions.

Doctor of Philosophy in Sociology

Akron-Kent Joint Ph.D. Program

(38500PHD)

The University of Akron and Kent State University departments of sociology offer a joint program leading to the Ph.D. degree. Faculty and students engaged in the joint doctoral program are for all intents and purposes involved in a single graduate program. Course work is offered at both campuses, and faculty from both campuses serve on student committees and research projects.

Admission to the Program

Our program seeks to admit students who expect to complete a Ph.D. at The University of Akron. We encourage applications from students who have only completed a bachelor's degree as well as from those who have completed a master's degree elsewhere. The curriculum in this program is structured to serve full-time students, and we assume that all students admitted intend to complete a doctorate. For students admitted without a master's degree, the master's degree in Sociology is awarded during the completion of doctoral program requirements. We recommend that students who are not interested in receiving a Ph.D. or who are interested in a part-time program of study consider applying to sociology programs that focus on awarding master's degrees and which are better able to serve the needs of part-time students.

Specific criteria considered for admission include:

- Fulfill the admission requirements of the Graduate School and department requirements;
- Attainment of an undergraduate grade point average (GPA) of 3.0 or a graduate GPA of 3.5;
- Completion of Graduate Record Examination General Test;
- Submission of a writing sample; preferably a course paper or comparable piece of scholarly work;
- Submission of a personal statement indicating reasons for pursuing a graduate degree in sociology at The University of Akron;
- Submission of three letters of recommendation from persons familiar with the applicant's academic work;
- Applicants whose native language is not English must also score at least 577 (paper-based) or 233 (computer-based) on the Test of English as a Foreign Language.

Application materials must be received by January 15 for those applicants seeking funding. Applicants not seeking funding must have application materials submitted by March 1.

Please note that the admissions committee is unable to consider incomplete applications. We encourage interested applicants to visit the department's website for further information about the program and the application process.

Degree Requirements

In addition to meeting the general requirements of the Graduate School, a student working toward the Doctor of Philosophy in Sociology must meet the following requirements:

- 3850:628 Professional Development Coursework:
- 3850:700 Professional and Ethical Issues in Sociology (3 credit hours)
- 3850:700 College Teaching of Sociology (3 credit hours)
- 3850:604 Research Methods and Statistics Coursework:
- 3850:706 Multivariate Techniques in Sociology (4 credit hours)
- 3850:709 Advanced Data Analysis (4 credit hours)
- 3850:714 Qualitative Methodology (4 credit hours)
- 3850:722 Sociological Theory Coursework:
- 3850:722 Early Sociological Thought (3 credit hours)
- 3850:723 Contemporary Sociological Thought (3 credit hours)
- If admitted with an MA: 32 credit hours of elective coursework;
- If admitted without an MA: 26 credit hours of elective coursework plus successful completion of six thesis credit hours. Completion of thesis hours requires the writing and defense of a thesis proposal as well as a final thesis document and oral defense of document;
- Successful completion of comprehensive examinations in major and minor specialty areas (from departmental list);
- Successful completion of dissertation document, oral defense of document, and 30 dissertation credit hours;
- Complete and fulfill general doctoral degree requirements of the Graduate School.

Doctor of Philosophy in Urban Studies and Public Affairs

(398006PHD)

(Admissions currently suspended)

The Department of Public Administration and Urban Studies offers a program leading to the Ph.D. in Urban Studies and Public Affairs. This is a joint program with Cleveland State University Levin School of Urban Studies. Students admitted to the program may take courses at either campus and all doctoral committees contain members from both universities.

The program is designed to educate scholars interested in university or professional careers in the fields of public administration and urban affairs with particular emphases on public administration, urban policy, and policy analysis and evaluation.

Admission

Admission to the Ph.D. program involves faculty consideration of all of the following criteria which, taken together, present evidence of the likelihood of success in advanced study:

- Completion of a master’s degree.
- Grade Point Average GPA) from master’s degree above 3.5. However, having a GPA above 3.5 is not in itself sufficient for admission.
- Submission of official test results on the verbal and quantitative portion of the Graduate Record Examination General Test. Official results from other, equivalent standardized tests used for graduate admissions may be substituted.
- Three letters of recommendation from persons familiar with the applicant's recent performance and abilities.
- A sample of the student's academic work. This should be a thesis or final project paper from the master's degree program.
- A personal statement from the applicant detailing the intended area of specialization and career aspirations. An applicant will be admitted only if faculty resources are available in the area of specialization detailed by the applicant.
- Those applicants for whom English is not their native tongue must demonstrate proficiency in the English language by scoring a minimum of 570 on the Test of English as a Foreign Language (TOEFL), submitting an acceptable score on the Test of Written English (TWE) and by scoring a minimum of 220 on the Test of Spoken English (TSE).

Application materials must be submitted at least six weeks prior to the term for which enrollment is sought.

For applicants seeking a graduate assistantship, application materials must be submitted by April 1 for fall enrollment and November 15 for spring enrollment.

Degree Requirements

A minimum of 64 credit hours are required to complete this degree. A required core of methods and foundational courses totaling 25 credit hours, a field study or specialization area of 27 credit hours, and 12 credit hours of dissertation. The department offers two specializations: Public Administration and Applied Policy.

- Core Requirements (25 credits):
  - 3980:700 Advanced Research Methods I
  - 3980:701 Advanced Research Methods II
  - 3980:705 Economics of Urban Policy

- Professional Development Coursework:
  - 3850:628 Professional and Ethical Issues in Sociology (3 credit hours)
  - 3850:700 College Teaching of Sociology (3 credit hours)
At least two courses of the following six listed below are required

Required Courses for Both Options:
• Participation in seminars – a maximum of two credits.
• Research and thesis – minimum of 12 credits.
• Course work in addition to the master's research and seminars (must be approved

Thesis Option II

• Complete 36 credits, distributed as follows:
  - School core courses – 12 credits:
    7600:600 Introduction to Graduate Study in Communication 3
    Choose two of the following courses:
    7600:602 Qualitative Methods in Communication 3
    7600:603 Quantitative Methods in Communication 3
    7600:670 Communication Criticism 3
    Choose one of the following courses:
    7600:624 Survey of Communication Theory 3
    7600:625 Theories of Mass Communication 3
  - School coursework – 12 credits.
  - Graduate electives – 6 credits.
  - Thesis (699) or Project/Production (698) – 6 credits.
  - Total – 36 credits.

Program Requirements
• Comprehensive examination required for students not pursuing a thesis, project, or production after 24 credits of coursework, including all core courses.
• Registration for six (6) credits of Thesis (699) or Project/Production (698).
• Presentation and defense of a thesis/project/production:
  - The thesis, project, or production requirement is designed to be the culmination of the student's academic program and involves the conceptualization, design and execution of an academic, practical, or aesthetic problem in a manner which requires a high level of substantive, methodological, technical, and written skills. These skills may be demonstrated in any of the three types of activities, depending on the student's background and career orientation.
Computer Science

Master of Science – Computer Science
(346000MS: Non-thesis Option)
(346001MS: Thesis Option)

Admission Requirements
All applicants for admission to the graduate program in computer science must meet the university requirements for graduate admission as published in the Graduate Bulletin. In addition to these requirements, the applicant must also:

• submit three letters of recommendation from individuals capable of evaluating the applicant’s potential for success in the program;
• submit a statement of purpose;
• submit a resume;
• have earned a baccalaureate degree in computer science or a related discipline from an accredited college or university with a GPA of 3.00 or higher in computer science and related courses;
• demonstrate knowledge of at least one high-level programming language; and,
• demonstrate proficiency in data structures, computer organization and operating systems.

A student deficient in one or more of these areas may be granted provisional admission. Application materials must be submitted by March 15 for fall and summer enrollment and by October 15 for spring enrollment. Applications submitted after these deadlines may be considered.

Degree Requirements
The curriculum has been designed to follow the guidelines and recommendations of the Association for Computing Machinery for Master’s Programs in Computer Science. Most full-time degree candidates admitted into the program will complete the degree requirements in two years. The thesis option requires 30 semester hours of graduate work while the nonthesis option requires 39. With prior consent, up to 6 credits of approved graduate-level coursework outside the department may be substituted for elective courses in both the thesis and non-thesis options. The grade point average of all Computer Science courses and pre-approved electives taken at The University of Akron must not be less than 3.0.

• Core Courses (required of all students):
  (1) 3460:335 Algorithms
  or
  3460:365 Advanced Algorithms
  (2) 3460:601 Research Methodology
  (3) Two courses from Software, Languages and Systems: 3460:626, 630, 641, 653, 655, 665, 677, and 680.
  (4) Two courses from Applications: 3460: 645, 658, 660, and 676.

Note: 689 may be counted for requirement area (3) or (4) upon the approval of the department.

Thesis Option (30 credits of graduate work)
24 credits in approved coursework, at least 15 credits of which must be taken at the 600 level. In addition, 3 credits in 3460:698 Master’s Research and 3 credits in 3460:699 Master’s Thesis. The thesis must be of publishable quality and must be successfully presented at a public defense moderated by three full-time Graduate Faculty (two of which must be from Computer Science).

Non-thesis Option (39 credits of graduate work)
39 credits in approved coursework, at least 21 credits of which must be taken at the 600 level.

Cooperative Education Program in Computer Science
(346008MS: Non-thesis Option)
(346009MS: Thesis Option)

Admission Requirements
Arrangements for student entry into the program are on an individual basis, and must be initiated by the student. The Cooperative Education Program is an optional program available only to full-time Computer Science students at The University of Akron who have satisfactorily met the following requirements:

• completion of at least 18 credits in computer science applicable to the master’s degree with a grade point average of at least 3.0 out of 4.0;
• acceptance by a cooperative education coordinator or director following interviews;
• a transfer student must have completed at least 9 credits in computer science at The University of Akron with a grade point average of at least 3.0 out of 4.0.

A student who desires to participate in the program will fill out an application and submit it to the cooperative education office. The student will then meet with a member of the cooperative education staff to discuss the availability of prospective employers. During this interview, the student will be asked to sign a Student Agreement which will become effective upon employment. Employment must be coordinated or have approval of the department and the cooperative education director. The University does not guarantee employment for the student. The student will be expected to remain with the employer during the time period specified by the Student Agreement.

Registration
While no academic credits are assigned, each student must register for 3000:501 Cooperative Education in the same manner that a student registers for any other University course. See department advisor before enrolling for this course.

A cooperative program fee for each work period is charged. Upon completion of a work period, a statement will appear on each student’s official transcript listing the course number, title and name of the employer. In the place of a letter grade, “credit” or “no credit” will be given, depending on the student’s satisfactory or unsatisfactory completion of the following:

• work performance as evaluated by the employer;
• progress report written by the student during the work period;
• written work report as approved by the department chair and cooperative education staff.

Economics

Master of Arts (325000MA)

Admission Requirements
For full admission students require Intermediate Microeconomics, Intermediate Macroeconomics, Calculus I, and Statistics. The academic background of each applicant will be reviewed by the Director of Graduate Studies to determine whether background deficiencies exist for his/her planned program of study. Exceptional departures from these requirements may be approved with the permission of the Director of Graduate Studies and Department Chair. All applicants must submit at least three letters of recommendation (preferably from academics) and a statement of purpose. International applicants must also submit scores from the GRE.

Applications should be submitted at least six weeks prior to the term for which enrollment is sought. Applicants seeking financial support must submit application materials by February 15 for fall enrollment and by November 15 for spring enrollment.

Thesis Option
A minimum of 30 credits of coursework including a thesis equivalent to six credits is required. At least 21 credits must be at the 600 level in economics. Thesis must be written in an area of specialization in which the individual has at least two courses.

Nonthesis Option
A minimum of 30 credits of coursework is required. At least 21 credits must be at the 600 level in economics.

Required courses for both options:
3250:602 Macroeconomic Analysis I 3
3250:611 Microeconomic Theory I 3
3250:620 Applications of Mathematical Models to Economics 3
3250:626 Statistics for Econometrics 3
3250:627 Econometrics 3

Courses taken outside the department must be approved (in writing) by the student’s advisor prior to enrollment.

English

Master of Arts – Literature Track
(330000MA: Non-thesis Option)
(330000MAT: Thesis Option)

Admission Requirements
In addition to the graduate application and official transcripts applicants must submit a statement of purpose. Applications are accepted on a rolling basis.

Thesis Option
A minimum of 33 credits is required (27 credits of coursework and 6 credits of thesis). The 27 credits of coursework, 18 must be at the 600 level and 12 must be in literature or literary theory.

Graduation Requirement: Candidates for graduation must see the Department of English Graduate Coordinator to complete the departmental Graduate Student Survey.
Non-thesis Option
A minimum of 36 credits is required, of which 24 must be at the 600 level and 24 must be in literature or literary theory.

Required Courses for both Options
3300:506 Chaucer†
3300:615 Shakespearean Drama†
3300:665 Literary Criticism
3300:570 History of the English Language† or
3300:670 Modern Linguistics†

At least one course in four of the following five categories is required:

British
Up to 1660
1660-1900
1900-present
American
Up to 1660
1665-present

Graduation Requirement: Candidates for graduation must see the Department of English Graduate Coordinator to complete the departmental Graduate Student Survey.

Master of Arts – Composition Track
(330001MA: Non-thesis Option)
(330001MAT: Thesis Option)
The Composition Track is intended for students interested in teaching English in secondary schools, two-year colleges, and four-year colleges. The degree is also appropriate for those planning to enter a doctoral program in composition and rhetoric. The program does not lead to state certification for teaching; students should consult the Department of Curricular and Instructional Studies for requirements for state certification to teach in the public schools.

Admission Requirements
In addition to the graduate application and official transcripts, applicants must submit a statement of purpose. Applications are accepted on a rolling basis.

Thesis Option
A minimum of 33 credits is required (27 credits of coursework and 6 hours of thesis). Of the 27 credits of coursework, 18 must be in composition studies (including courses in composition, rhetoric, and linguistics). Of the 27 credits of coursework, 15 must be at the 600 level.

Graduation Requirement: Candidates for graduation must see the Department of English Graduate Coordinator to complete the departmental Graduate Student Survey.

Non-thesis Option
A minimum of 36 credits is required, only 6 of which may be individual reading. At least 24 credits are required in composition studies (including courses in composition, rhetoric, and linguistics). Of the 36 credits of coursework, 21 must be at the 600 level.

Required courses for both options:
3300:650 The New Rhetorics
3300:673 Theories of Composition
3300:674 Research Methodologies in Composition

Students must also choose one of the following two courses:
3300:578 Grammatical Structures of Modern English
3300:670 Modern Linguistics

And one of the following three courses:
3300:579 Management Reports
3300:625 Autobiographical Writing
3300:679 Scholarly Writing

Optional courses:
3300:660 Cultural Studies: Theory and Practice
3300:689 Contemporary Reading Theory
3300:689 Composition and Rhetoric
3300:689 Literature and Composition

Graduation Requirement: Candidates for graduation must see the Department of English Graduate Coordinator to complete the departmental Graduate Student Survey.

†Unless the student has passed a comparable course at the undergraduate level with a grade of “B” or better.

Master of Fine Arts in Creative Writing
(330007MFA)
The University of Akron, Cleveland State University, Kent State University, and Youngstown State University offer jointly the MFA in Creative Writing. This degree provides students with opportunities to develop their skills in writing fiction, poetry, drama, and creative non-fiction. It is the terminal degree. Through extensive practice in workshops and craft and theory courses, students will develop their creative writing abilities while also studying literature and completing a relevant internship.

Admission Requirements
Students must be accepted by the Graduate School at The University of Akron or one of the other three participating universities. They must also submit three letters of recommendation, transcripts, and a writing portfolio. The portfolio will be reviewed by an admissions committee of members from all four universities. Application materials must be submitted by February 1.

Degree Requirements
Students must complete the following courses among the participating universities by taking classes restricted to graduate students only, except as noted below:

• Writing Workshops - 15 credits
• Craft and Theory Courses - 9 credits (at least three and no more than six in the student’s primary genre of concentration)
• Literature Courses - 6 credits
• Internship - 3 credits
• Thesis - 6 credits
• Electives - 9 credits, up to six of which may be from advisor-approved courses not solely restricted to graduate students

A total of 48 credit hours is required for the MFA in Creative Writing.

Up to nine credits from previously uncompleted graduate degrees may be accepted for transfer credit in the NEOMFA program.

Family and Consumer Sciences
A program of study is offered leading to the Master of Arts in Family and Consumer Sciences degree offers options in child and family development and clothing, textiles, and interior design.

Admission Requirements
• Minimum GPA of 2.75 for four years of undergraduate study or 3.00 for the last two years of undergraduate study.
• Completion of general Graduate Record Examination within the five years preceding application, with the following scores or higher:
  - For students who have taken the GRE prior to August 2011: 410 on verbal, 430 on quantitative, and 4.0 on analytical writing;
  - For students who have taken the GRE in August 2011 or later: 147 on verbal, 141 on quantitative, and 4.0 on analytical writing
• Three letters of recommendation
• Statement of purpose
• Resume

The graduate faculty of the School of Family and Consumer Sciences may require an interview with any applicant.

Application materials must be received by March 1 for fall enrollment if applying for a graduate assistantship. Applications are accepted on a rolling basis for those not applying for a graduate assistantship, and by October 1 for spring enrollment if applying for a graduate assistantship.

Accepted students will be expected to comply with the following requirements:

• Complete the course of study in one of the two options, with a minimum of 40 credits.

These credits will include:
  - core courses in the area of specialty;
  - option electives and cognate electives, selected in consultation with academic advisor, from within School or in another discipline. These are chosen to strengthen student’s professional goals.
• Pass a written comprehensive examination over major and minor areas after the completion of at least 19 credits of graduate work.
• Complete a master’s thesis or a master’s project. The thesis option involves the design and evaluation of original research in an appropriately related area commensurate with the student’s background and area of pursuit. The project option involves the design, development, implementation, and evaluation of original and creative programs and/or resource materials. A written proposal for the thesis or project cannot be submitted until successful completion of the comprehensive examination.
• Apply for graduation upon successful completion of 24 credits of graduate study, the written comprehensive examination, and an approved prospectus or proposal for a thesis or project.
• Pass an oral examination covering the thesis or project report.
Foundation Courses

• Required by all program options:
  7400:604 Orientation to Graduate Studies in Family and Consumer Sciences 1
  7400:680 Historical and Conceptual Bases of Family and Consumer Sciences 3
  7400:685 Research Methods in Family and Consumer Sciences 3

Child and Family Development Option

(H40110MA)

• Core Courses:
  7400:602 Family in Lifespan Perspective 3
  7400:605 Developmental Parent-Child Interactions (online) 3
  7400:607 Family Dynamics 3
  7400:610 Child Development Theories 3
  7400:685 Development in Infancy and Early Childhood 3

• Option Electives

Select 6 credits from the following courses with approval of advisor (if a course has been taken at the undergraduate level, other courses must be selected):
  7400:501 American Families in Poverty (online) 3
  7400:504 Middle Childhood and Adolescence 3
  7400:506 Family Financial Management 3
  7400:540 Family Crisis 3
  7400:541 Family Relationships in the Middle and Later Years 3
  7400:542 Human Sexuality 3
  7400:546 Culture, Ethnicity, and the Family (online) 3
  7400:548 Before and After School Child Care 2
  7400:560 Organization and Supervision of Child-Care Centers 3
  7400:596 Parent Education (online) 3
  7400:688 Practicum in Family and Consumer Sciences 3

• Cognate Electives

Select 7 credits with approval of advisor from within the School of Family and Consumer Sciences OR from a cognate area outside the School, OR from a combination of the two.
  • Thesis or Project (select one):
    7400:684 Master's Project 5
    7400:689 Master's Thesis 5
    Total 40

Clothing, Textiles and Interiors Option

(H40104MA)

• Core Courses:
  7400:634 Material Culture Studies 3
  7400:639 Theories of Fashion 3
  7400:677 Social Psychology of Dress and the Near Environment 3

• Options Electives (select 13 credits with approval of advisor):
  7400:518 History of Interior Design I 4
  7400:519 History of Interior Design II 4
  7400:523 Professional Image Analysis 3
  7400:525 Textiles for Apparel 3
  7400:527 Global Issues in Textiles and Apparel 3
  7400:536 Textile Conservation 3
  7400:537 Historic Costume 3
  7400:538 History of Fashion 3
  7400:631 Problems in Design 1-6
  7400:688 Practicum in Family and Consumer Sciences 3
  7400:696 Individual Investigation in Family and Consumer Sciences 1-6

• Cognate Electives:

Select 6 credits with approval of advisor from courses within the School of Family and Consumer Sciences OR from a cognate area outside the School OR from a combination of the two.
  • Thesis or Project (select one):
    7400:684 Master's Project 5
    7400:689 Master's Thesis 5
    Total 40

Geography and Planning

Master of Arts in Geography

(335010MA: Thesis Option)
(335000MA: Nonthesis Option)

NOTE: The M.A. in Geography is now being administered by the Department of Geosciences.

Admission Requirements

In addition to the graduate application and official transcripts applicants must submit two letters of recommendation and a statement of purpose. Applications are accepted on a rolling basis.

Thesis Option

• Core Requirements (21 credits)
  3350:505 Geographic Information Systems
  3350:581 Research Methods in Geography and Planning
  3350:583 Spatial Analysis
  3350:596 Field Research Methods
  3350:687 History of Geographic Thought
  3350:600, 601 Seminar (6 credits)

• Geography and Planning Electives (24 credit hours)

Graduate courses from the Department of Geography and Planning

No more than three credits of 3350:698 Independent Reading and Research

• Thesis

At least 9 credits and no more than 15 credits of 3350:699

Nonthesis Option

• Core Requirements (21 credits)
  3350:505 Geographic Information Systems
  3350:581 Research Methods in Geography and Planning
  3350:583 Spatial Analysis
  3350:596 Field Research Methods
  3350:687 History of Geographic Thought
  3350:600, 601 Seminar (6 credits)

• Geography and Planning Electives (24 credits)

Graduate courses from the Department of Geography and Planning

No more than three credits of 3350:698 Independent Reading and Research

Master of Science in Geography/Geographic Information Sciences

(335010MS: Thesis Option)
(335000MS: Nonthesis Option)

NOTE: The M.S. in Geography/Geographic Information Sciences is now being administered by the Department of Geosciences.

Admission Requirements

In addition to the graduate application and official transcripts applicants must submit two letters of recommendation and a statement of purpose. Applications are accepted on a rolling basis.

Thesis Option

• Core Requirements (18 credits)
  3350:581 Research Methods in Geography and Planning
  3350:583 Spatial Analysis
  3350:596 Field Research Methods
  3350:687 History of Geographic Thought
  3350:600, 601 Seminar (6 credits)

• Geotechniques Requirements (9 credits)
  3350:596 Field Research Methods
  3350:581 Research Methods in Geography and Planning
  3350:583 Spatial Analysis
  3350:596 Field Research Methods
  3350:687 History of Geographic Thought
  3350:600, 601 Seminar (6 credits)

• Geotechniques Electives (9 credits)
  3350:549 Advanced Remote Sensing
  3350:547 Remote Sensing

• Geotechniques Electives (9 credits)
  3350:549 Advanced Remote Sensing
  3350:547 Remote Sensing

Nonthesis Option

• Core Requirements (18 credits)
  3350:581 Research Methods in Geography and Planning
  3350:583 Spatial Analysis
  3350:596 Field Research Methods
Graduate Studies

3350:687 History of Geographic Thought
3350:600, 601 Seminar (6 credits)

- Geotechniques Requirements (9 credits)
  3350:505 Geographic Information Systems
  3350:540 Cartography
  3350:547 Remote Sensing

- Geotechniques Electives (9 credits)
  3350:507 Advanced Geographic Information Systems
  3350:541 Global Positioning Systems (GPS)
  3350:542 Cartographic Theory and Design
  3350:544 Applications in Cartography and GIS
  3350:545 GIS Database Design
  3350:546 GIS Programming and Customization
  3350:549 Advanced Remote Sensing

- Geography and Planning Electives (9 credits)
  Graduate courses from the Department of Geography and Planning

  Any course taken outside the department must be approved in advance by the student's graduate advisor or department chair.

  No more than three credits of 3350:698 Independent Reading and Research

Master of Arts (Geography/Urban Planning)

(Admissions currently suspended)

NOTE: The M.A. in Geography/Urban Planning is now being administered by the Department of Public Administration and Urban Studies.

Admission Requirements

In addition to the graduate application and official transcripts applicants must submit two letters of recommendation and a statement of purpose. Applications are accepted on a rolling basis.

Thesis Option

- Core Requirements (30 credits)
  3350:505 Geographic Information Systems
  3350:532 Land Use Planning Law
  3350:537 Planning Analysis and Projection Methods
  3350:538 Land Use Planning Methods
  3350:539 History of Urban Design and Planning
  3350:581 Research Methods in Geography and Planning
  3350:583 Spatial Analysis
  3350:630 Planning Theory
  3350:631 Facilities Planning
  3350:600, 601 Seminar (3 credits)

- Geography and Planning Electives (15 credits)
  Graduate courses from the Department of Geography and Planning

  Any course taken outside the department must be approved in advance by the student's graduate advisor or department chair.

  No more than three credits of 3350:698 Independent Reading and Research

  3350:685 Planning Internship (3 credits)

Nonthesis Option

- Core Requirements (30 credits)
  3350:505 Geographic Information Systems
  3350:532 Land Use Planning Law
  3350:537 Planning Analysis and Projection Methods
  3350:538 Land Use Planning Methods
  3350:539 History of Urban Design and Planning
  3350:581 Research Methods in Geography and Planning
  3350:583 Spatial Analysis
  3350:630 Planning Theory
  3350:631 Facilities Planning
  3350:600, 601 Seminar (3 credits)

- Geography and Planning Electives (15 credits)
  Graduate courses from the Department of Geography and Planning

  Any course taken outside the department must be approved in advance by the student's graduate advisor or department chair.

  No more than three credits of 3350:698 Independent Reading and Research

  3350:685 Planning Internship (3 credits)

Geology

Admission Requirements

In addition to the graduate application and official transcripts applicants should submit three letters of recommendation and a statement of purpose.

Master of Science

- Complete a minimum of 30 credits of which at least 10 credits shall be at the 600 level and no more than two in research problems and six in thesis research.

- In all geology M.S. degree programs except Engineering Geology, at least 22 graduate credits shall be geology courses.

- A proficiency exam is taken during the student's first semester in the M.S. program. Students who demonstrate a lack of knowledge in areas related to their thesis topics may be required to take additional or remedial courses as suggested by the examining committee. Students may not begin formal thesis work until the proficiency exam has been completed. (Formal thesis work includes the thesis proposal and/or thesis research credits) Field camp can be taken for graduate credit; however, it will not count toward the 30 credits for the M.S. in the geology and geophysics specializations.

- Core Requirements:
  3370:680 Seminar in Geology 2
  3370:699 Master's Thesis 6

- Oral presentation and defense of thesis.

Degree Specialization

The program of each individual will be adapted to his/her career objectives.

Geology (337000MS)

The minimal background for admission without deficiency should include a six-credit geology field camp course and equivalents to courses in mineralogy, petrology, structural geology, sedimentology/stratigraphy, and any two upper level geology courses.

Students should have completed the equivalent of a minimum of six semester courses in introductory chemistry, physics, biology, calculus or equivalents; including at least one semester of calculus, physics and chemistry. All courses should be taught for science/mathematics/engineering majors.

The academic background of each incoming graduate student will be reviewed during the student’s first semester by the graduate advisor, thesis advisor, and department chair to determine whether background deficiencies exist for his/her planned program of study.

Earth Science (337001MS)

Equivalents of the current geology courses for the University's B.A. in geology are required. Course program will be selected to provide the student with a well-rounded background in lithosphere, hydrosphere and atmosphere. Those who will be teachers must take 5500:780 Seminar in Curricular and Instructional Studies: Earth Science, or equivalent.

Geophysics (337002MS)

Equivalents of the geology, cognate science and mathematics requirements for the University's B.S. in geophysics are required.

Engineering Geology (337003MS)

This program is for the graduate engineer and geologist who wishes to broaden expertise in the other field. The entering student who has some deficiencies in either engineering or geology may have to satisfy one or more of the following requirements while proceeding with graduate studies. A committee of engineering geology faculty will determine appropriate coursework on an individual basis.

- Required courses:
  Graduate Geology Courses 18
  Graduate Engineering Courses 8

Environmental Geology (337004MS)

Equivalents of the University’s B.S. degree in natural science (biology, chemistry, geology, mathematics, or physics) or engineering, plus the equivalent of the University’s minor in geology and Geology Field Camp I and II are required. As many as eight credits may be selected from engineering, biology and/or geography with the approval of a geology advisor.
Bachelor of Arts in History

- the General Education requirement* and the second year of a foreign language;
- a minimum of 32 credits of history courses, which include:

Core Requirements:

3400:310 Historical Methods (3 credits)

At least six credits from each of the following fields:

Field I United States and Canada
Field II Europe
Field III Asian, Latin America, Africa

Elections:

Additional elective credits to total at least 32 credits**

Upper-level requirement:**

A minimum of six credits must be at the 400-level and in two different fields.

Notes:

*Courses in World Civilizations as well as Humanities in the Western Tradition (3400:21) and Humanities in the World since 1300 (3400:211) may not be used to meet major requirements in History.

**With the approval of the Department of History undergraduate adviser a History major may apply up to six credits of coursework in related disciplines (cognate courses) toward the 32 credits required for the History major. Cognate credit, however, shall not be substituted for either Historical Methods or for the field distribution requirement specified above.

***Transfer students must take a minimum of 14 credits of history coursework at UA and must have a minimum of 16 credits in 300- and 400-level classes.

Graduate coursework will include:

- In the fourth year:
  3400:689 Historiography (fall semester) plus any two courses which offer credit at both the 400- and 500-level but will receive credit for them at both the undergraduate and graduate levels.
- In the fifth year:
  Option I: Three reading seminars, one followed by a writing seminar, with the writing seminar paper read and approved by two faculty members.
  Option II: Two reading-writing seminar sequences under different professors with the writing seminar paper of the student’s choice read and approved by two faculty members.
  Option III: Two reading seminars, one writing seminar, and a thesis which must be read and approved by two faculty members.

(Students intending to go on to the doctoral program should select Option II or Option III, preferably Option III)

To complete the program a student must:

- Finish all undergraduate General Education requirements;
- Complete the second year (or its equivalent) of a foreign language;
- Earn 32 undergraduate credits in history;
- Earn 30 graduate credits in history (not including 3400:690 Teaching Practicum);
- Pass written comprehensive examinations in at least two fields from the following list:

  Ancient America to 1877
  Medieval United States Since 1877
  Europe, Renaissance to 1815 Europe, 1750 to present
  History of Science Comparative Non-Western History*
  Public History World History

Field I Ancient
Field II Medieval
Field III Europe
Field IV History of Science
Field V Public History
Field VI South Asia
Field VII Africa
Field VIII Middle East
Field IX World History

- Earn at least seven credits in a third field from the list above or in a cognate field approved by the director of graduate studies.

Mathematics

Master of Science – Mathematics

345000MS: Non-thesis Option
345000MST: Thesis Option

Admission Requirements

In addition to the graduate application and official transcripts applicants must submit three letters of recommendation and a statement of purpose. Applications are accepted on a rolling basis.

Goals: The program is designed to give students a solid foundation in graduate-level mathematics, provide hands-on experience in problem-solving and the uses of technology, and to allow returning mathematics teachers to upgrade their qualifications.

Administration: Upon admission to the program, each student will undergo a review. Deficiencies in any mathematical area will add to the number of credits required
for graduation. Core requirements already satisfied will be replaced by approved electives.

Program Requirements: A minimum of 30 graduate credits, after completion of any deficiency courses, are required.

- Core requirements (18-19 credits):
  3450:510 Advanced Linear Algebra 3
  3450:513 Theory of Numbers 3
  3450:512 Abstract Algebra II 3
  3450:522 Advanced Calculus II 3
  3450:621 Real Analysis 3
  3450:625 Analytic Function Theory 3
  3450:636 Advanced Combinatorics and Graph Theory 3

A statistics course selected from:
  3470:550 Probability 3
  3470:551 Theoretical Statistics I 3
  3470:561 Applied Statistics I 4
  3470:651 Probability and Statistics 4

Thesis Option (minimum of 30 credits)
In addition to the placement review and core requirements, at least six credits of electives approved by the graduate advisor, three credits in 3450:692 Seminar in Mathematics, and three credits in 3450:699 Master’s Thesis must be completed.

Nonthesis Option (minimum of 30 credits)
In addition to the placement review and core requirements, at least eleven (or twelve) credits of electives approved by the graduate advisor must be completed.

Master of Science – Applied Mathematics

(34501MS: Non-thesis Option)
(34501MST: Thesis Option)

Admission Requirements
In addition to the graduate application and official transcripts applicants must submit three letters of recommendation and a statement of purpose. Applications are accepted on a rolling basis.

Goals: This program is designed to train students in the formulation, analysis, and solution of mathematical models in a variety of application areas.

Administration: Upon admission to the program, each student will undergo a review process to determine competency in undergraduate core mathematical areas and background in at least one junior-level or higher course in engineering or physics. If necessary, the appropriate course(s) will be added to the required course list for the student.

Program Requirements: A minimum of 30 graduate credits, after the completion of deficiency courses, is required.

- Core Requirements (18 credits):
  3450:621 Real Analysis 3
  3450:627 Advanced Numerical Analysis I 3
  3450:633 Methods of Applied Mathematics I 3

- Group 1 - At least one course from this list must be taken:
  3450:625 Analytic Function Theory 3
  3450:628 Advanced Numerical Analysis II 3
  3450:632 Advanced Partial Differential Equations 3

- Group 2 - At least two courses from this list must be taken:
  3450:634 Methods of Applied Mathematics II 3
  3450:635 Optimization 3
  3450:730 Advanced Numerical Solution of Partial Differential Equations 3

Thesis Option
In addition to the placement review and core requirements, at least six credits of electives approved by the graduate advisor, three credits in 3450:692 Seminar in Mathematics, and three credits of 3450:699 Master’s Thesis must be completed.

Nonthesis Option
In addition to the placement review and core requirements, at least twelve credits of electives approved by the graduate advisor must be completed.

Coordinated Program
(415001PHD)
Coordinated Engineering Applied Mathematics program for the Doctor of Philosophy in Engineering degree between the College of Engineering and the Department of Theoretical and Applied Mathematics

The faculty in the College of Engineering and the Department of Theoretical and Applied Mathematics have agreed to provide a coordinated program for those graduate students who elect the interdisciplinary field of Engineering Applied Mathematics.

Admission and Degree Requirements
Applicants for the Engineering Applied Mathematics Program must have their graduate application and credentials evaluated by one of the departments in the College of Engineering and the Department of Theoretical and Applied Mathematics. The Admission and Degree Requirements for the Doctor of Philosophy in Engineering, as given in the Graduate Bulletin (see page 48, College of Engineering), shall apply to all applicants for the Engineering Applied Mathematics Program.

BS/MS Program in Mathematics

(345010MS: Non-thesis Option)
(345010MST: Thesis Option)

This is an accelerated five-year BS/MS program. After successfully completing this program, a student will receive a bachelor’s degree in either mathematics or applied mathematics as well as a master’s degree in mathematics. Under the supervision of a faculty advisor, a student in the program will finish the core course requirements and most of the electives for the bachelor’s degree in the first three years. During the third year of the baccalaureate degree a student will formally apply to the program through the Graduate School. Upon acceptance a student will be cleared to complete the remaining electives of the bachelor’s degree and 30 credits of graduate work for the master’s degree in the last two years. A student will be eligible for a graduate assistantship only in these last two years and must be registered for at least nine graduate credits in each of those semesters. In this program six of the required senior-level credits for the undergraduate program will be replaced by graduate-level credits. These six credits will be applied to the requirements of both the bachelor’s and master’s degrees. Further, students in the program may choose to replace nine credits of the open electives for the undergraduate program by graduate-level electives.

Graduate coursework will include the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3450:510</td>
<td>Advanced Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>3450:513</td>
<td>Theory of Numbers</td>
<td>3</td>
</tr>
<tr>
<td>3450:512</td>
<td>Abstract Algebra II</td>
<td>3</td>
</tr>
<tr>
<td>3450:522</td>
<td>Advanced Calculus II</td>
<td>3</td>
</tr>
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<td>3450:621</td>
<td>Real Analysis</td>
<td>3</td>
</tr>
<tr>
<td>3450:625</td>
<td>Analytic Function Theory</td>
<td>3</td>
</tr>
<tr>
<td>3450:636</td>
<td>Advanced Combinatorics and Graph Theory</td>
<td>3</td>
</tr>
<tr>
<td>3450:692</td>
<td>Seminar in Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>3470:550</td>
<td>Probability</td>
<td>3</td>
</tr>
<tr>
<td>3470:551</td>
<td>Theoretical Statistics</td>
<td>3</td>
</tr>
<tr>
<td>3470:561</td>
<td>Applied Statistics</td>
<td>4</td>
</tr>
<tr>
<td>3470:651</td>
<td>Probability and Statistics</td>
<td>4</td>
</tr>
<tr>
<td>3450:699</td>
<td>Master’s Thesis (for thesis option)</td>
<td>3</td>
</tr>
</tbody>
</table>

A minimum of 30 graduate credits plus a project paper for non-thesis option

Electives: 8-9 credits

A student must maintain a 3.0 or better grade point average to stay in the program. If a student is not able to do this, then he or she will have the option to complete the regular bachelor’s degree program instead of the five-year accelerated plan.

BS/MS Program in Applied Mathematics

(345011MS)

This is an accelerated five-year BS/MS program. After successfully completing this program, a student will receive a bachelor’s degree in either mathematics or applied mathematics as well as a master’s degree in applied mathematics. Under the supervision of a faculty advisor, a student in the program will finish the core course requirements and most of the electives for the bachelor’s degree in the first three years. During the third year of the baccalaureate degree a student will formally apply to the program through the Graduate School. Upon acceptance a student will be cleared to complete the remaining electives of the bachelor’s degree and 30 credits ofgraduate work for the master’s degree in the last two years. A student will be eligible for a graduate assistantship only in these last two years and must be registered for at least nine graduate credits in each of those semesters. In this program six of the required senior-level credits for the undergraduate program will be replaced by graduate-level credits. These six credits will be applied to the requirements of both the bachelor’s and master’s degrees. Further, students in the program may choose to replace nine credits of the open electives for the undergraduate program by graduate-level electives.

Graduate coursework will include the following courses:

<table>
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<td>Real Analysis</td>
<td>3</td>
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<tr>
<td>3450:627</td>
<td>Advanced Numerical Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>3450:633</td>
<td>Methods of Applied Mathematics I</td>
<td>3</td>
</tr>
</tbody>
</table>

A student must maintain a 3.0 or better grade point average to stay in the program. If a student is not able to do this, then he or she will have the option to complete the regular bachelor’s degree program instead of the five-year accelerated plan.
A student must maintain a 3.0 or better grade point average to stay in the program. If a student is not able to do this, then he or she will have the option to complete the regular bachelor’s degree program instead of the five-year accelerated plan.

Music

The degree Master of Music is offered by the School of Music with options in music education, performance, composition, theory, music history and literature, and accompanying.

Admission Requirements

• Students must have earned an undergraduate baccalaureate degree in music or the equivalent as determined by the department.
• The Graduate School’s requirements for admission.
• Three letters of recommendation.
• The performance and accompanying options require an audition on the student’s major instrument/voice. Please contact the coordinator of Graduate Studies for an audition time.
• Applicants of composition, theory, and history options must pass departmental diagnostic exams in their area of study.
• The composition option requires the presentation of a portfolio of original compositions to the area coordinator. The theory and history options require presentation of a document showing evidence of scholarly writing.
• The options in music education, music theory, and music history and literature require an interview with faculty in the appropriate area.
• The option in orchestral conducting requires the applicant to successfully pass an interview and audition with the orchestra conducting faculty member and an audition on his/her particular applied instrument.

Applications are accepted on a rolling basis.

The student should consult with the coordinator of Graduate Studies in Music for additional information regarding the individualized nature of each option.

For the Voice Performance and Piano Accompanying options a proficiency equal to two semesters each of Italian, German, and French is required for completion of the Master of Music degree. There is no substitution for this requirement for the MM Voice Performance. Piano Accompanying degree program (only) may substitute Diction I and II for this requirement. For the History and Literature option proficiency equal to two semesters of German is required for completion of the MM degree. A language other than German may be substituted for the History and Literature language proficiency with approval from the department. For details on how to show language proficiency please contact the Graduate Coordinator for the School of Music.

After completion of all course work, the student must pass an examination covering the graduate program. This examination is individualized for each candidate’s unique program.

Composition Option

(C50003MM)

• Music core courses – eight credits (to be selected):
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
  7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  7500:619 Theory and Pedagogy 2

• Major required courses – 21-23 credits:
  7500:601 Choral Literature 2
  7500:618 Musical Styles and Analysis IV (20th Century) 2
  7500:624 Music History Survey: Music Since 1900 2
  7500:647 Master’s Chamber Recital 1
  7500:699 Master’s Thesis/Project 4-6
  7510:6 — Ensemble (participation in two ensembles required) 2
  7520:642 Applied Composition 8

• Additional music courses – zero to two credits.

Graduate-level (music) courses, workshops, applied lessons (other than in composition) and/or advanced problems to be selected by the student and advisor.

• Electives – three credits.

To be selected by student and advisor. Areas include graduate-level courses in other disciplines, such as theatre arts, in which the student obtains permission of instructor, or 7520:642 Applied Composition.

Degree total: 34-36 credits.

Music Education Option

(C50016MM: Thesis Option)
(C50006MM: Nonthesis Option)

Thesis Option – 32 credits

• Required Music Education Core Courses – 13-15 credits
  7500:611 Foundations of Music Education (fall) 3
  7500:612 Practices and Trends in Music Education (summer) 3
  7500:614 Measurement and Evaluation in Music Education (spring) 3
  7500:699 Master’s Thesis/Project 4-6

• Additional music/education courses – select 17-19 credits with approval of music education and graduate advisors. Choices may include the following:
  7500:675 Seminar in Music Education 9
  7500:697 Advanced Problems in Music Education 4
  7500:590 Music Workshops 6
  7520:5/6 — Applied Music 8
  7510:6 — Ensemble 2
  7500:5/6 — Other music courses 8
  5100:5/6 — Educational Foundations and Leadership 4
  5170:5/6 — General Administration 4
  55/5—6 — Curricular and Instructional Studies 4
  or
  5500:780 Seminar in Curricular and Instructional Studies 1-3
  (Maximum of 4 credits of 5500:780)

Non-Thesis Option – 34 credits

• Required Music Education Core Courses – 9 credits
  7500:611 Foundations of Music Education (fall) 3
  7500:612 Practices and Trends in Music Education (summer) 3
  7500:614 Measurement and Evaluation in Music Education (spring) 3

• Additional music/education courses – select 25 credits with approval of music education and graduate advisors. Choices may include the following:
  7500:675 Seminar in Music Education 9
  7500:697 Advanced Problems in Music Education 4
  7500:590 Music Workshops 6
  7520:5/6 — Applied Music 8
  7510:6 — Ensemble 2
  7500:5/6 — Other music courses 8
  5100:5/6 — Educational Foundations and Leadership 4
  5170:5/6 — General Administration 4
  55/5—6 — Curricular and Instructional Studies 4
  or
  5500:780 Seminar in Curricular and Instructional Studies 1-3
  (Maximum of 4 credits of 5500:780)

Music Education: Instrumental Option

(C50017MM: Thesis Option)
(C50010MM: Nonthesis Option)

Thesis Option – 32 credits

• Required Music Education Core Courses – 13-15 credits
  7500:611 Foundations of Music Education (fall) 3
  7500:612 Practices and Trends in Music Education (summer) 3
  7500:614 Measurement and Evaluation in Music Education (spring) 3
  7500:699 Master’s Thesis/Project 4-6 (must be related to instrumental music education)

• Additional music/education courses – select 17-19 credits with approval of music education and graduate advisors. A minimum of 14 credits must be related to instrumental music education. Choices may include the following:
  7500:675 Seminar in Music Education 9
  7500:697 Advanced Problems in Music Education 4
  7500:590 Music Workshops 6
  7520:5/6 — Applied Music 8
  7510:6 — Ensemble 2
  7500:5/6 — Other music courses 8
  5100:5/6 — Educational Foundations and Leadership 4
  5170:5/6 — General Administration 4
  55/5—6 — Curricular and Instructional Studies 4
  or
  5500:780 Seminar in Curricular and Instructional Studies 1-3
  (Maximum of 4 credits of 5500:780)

Non-Thesis Option – 34 credits

• Required Music Education Core Courses – 9 credits
  7500:611 Foundations of Music Education (summer) 3

Non-Thesis Option – 34 credits

• Required Music Education Core Courses – 9 credits
  7500:611 Foundations of Music Education (fall) 3
  7500:612 Practices and Trends in Music Education (summer) 3
  7500:614 Measurement and Evaluation in Music Education (spring) 3

• Additional music/education courses – select 25 credits with approval of music education and graduate advisors. Choices may include the following:
  7500:675 Seminar in Music Education 9
  7500:697 Advanced Problems in Music Education 4
  7500:590 Music Workshops 6
  7520:5/6 — Applied Music 8
  7510:6 — Ensemble 2
  7500:5/6 — Other music courses 8
  5100:5/6 — Educational Foundations and Leadership 4
  5170:5/6 — General Administration 4
  55/5—6 — Curricular and Instructional Studies 4
  or
  5500:780 Seminar in Curricular and Instructional Studies 1-3
  (Maximum of 4 credits of 5500:780)
Major required courses – 20-22 credits:

- Required Music Education Core Courses – 9 credits
- Non-Thesis Option – 34 credits
- Additional music/education courses – select 25 credits with approval of music education and graduate advisors. A minimum of 22 credits must be related to instrumental music education. Choices may include the following:
  - Seminar in Music Education
  - Advanced Problems in Music Education
  - Music Workshops
  - Other music courses
  - Educational Foundations and Leadership
  - General Administration
  - Curricular and Instructional Studies

Degree Total: 34-36 credits.

Music Education: Choral/General Music Option (C50019MM: Thesis Option)

Thesis Option – 32 credits

- Required Music Education Core Courses – 13-15 credits
- Additional music/education courses – select 17-19 credits with approval of music education and graduate advisors. A minimum of 14 credits must be related to choral/general music education. Choices may include the following:
  - Seminar in Music Education
  - Advanced Problems in Music Education
  - Music Workshops
  - Applied Music
  - Ensemble
  - Other music courses
  - Educational Foundations and Leadership
  - General Administration
  - Curricular and Instructional Studies

Degree Total: 32 credits.

Music History and Literature Option (C50004MM)

- Music core courses – eight credits (to be selected):
  - Advanced Conducting: Instrumental
  - Musical Styles and Analysis IV (20th Century)
  - Ensemble (participation required in two ensembles)
  - Advanced Problems in Music

- Major required courses – 20-22 credits:
  - Composition (electronic music)
  - Advanced Accompanying I
  - Other music courses
  - Educational Foundations and Leadership
  - General Administration
  - Curricular and Instructional Studies

Degree Total: 33-36 credits.

Performance Option in Accompanying (C50008MM)

- Music core courses – Eight credits (to be selected):
  - Repertoire and Pedagogy: Organ
  - Musical Styles and Analysis I (Chant through Palestrina)
  - Musical Styles and Analysis II (Baroque through early Beethoven)
  - Advanced Accompanying I
  - Advanced Accompanying II
  - Advanced Accompanying III

- Additional music courses – two to three credits.
- Elective – two credits. To be selected by the student and advisor.

Note: No more than a total of 16 credits of 7520 courses may be applied to the degree. All candidates for this degree must accompany a minimum of three solo ensemble recitals (instrumental and vocal). These can be done as part of 7500:697

Degree Total: 33 credits.
Performance Option in Winds, String, Percussion
(C50102MM: Strings Performance)
(C50103MM: Woodwinds Performance)
(C50105MM: Percussion Performance)
(C50108MM: Brass Performance)

• Music core courses: eight credits to be selected:
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
  7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  7500:621 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2
  7500:623 Music History Survey: Classic and Romantic 2
  7500:624 Music History Survey: Music Since 1900 2

• Major required courses – 18–18 credits:
  7500:618 Musical Styles and Analysis IV (20th Century)– 2
  7510:6— Ensemble (participation in two ensembles required)** 2-4
  7520:6— Applied Music (select appropriate instrument) 8

• Select one of the following as appropriate to major instrument:
  7500:630 Teaching and Literature: Brass Instruments 2
  7500:631 Teaching and Literature: Woodwind Instruments 2
  7500:632 Teaching and Literature: Percussion Instruments 2
  7500:634 Teaching and Literature: String Instruments 2
  7500:698 Graduate Recital 2

• Additional music courses – six credits.*
  Graduate-level (music) workshops, applied lessons, advanced problems and/or courses to be selected by student and advisor.

• Electives – four credits.*
  Areas may include graduate-level courses in other disciplines, such as theatre arts, in which the student obtains permission of instructor, or additional music courses, as determined by the student and advisor.

Degree total: 34-36 credits

Note: No more than a total of 16 credits of 7520 courses may be applied to the degree.

Performance Option in Voice
(C50109MM)

• Music core courses: 8 credits (to be selected):
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
  7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  7500:621 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2
  7500:623 Music History Survey: Classic and Romantic 2
  7500:624 Music History Survey: Music Since 1900 2
  7500:604 Development of Opera 2

• Major required courses – 20–22 credits:
  7500:618 Musical Styles and Analysis IV (20th Century) 2
  7500:685 Vocal Pedagogy 2
  7500:666 Advanced Song Literature I 2
  7500:687 Advanced Song Literature II 2
  7500:696 Graduate Recital 2
  7510:6— Ensemble (participation in two ensembles required)** 2-4
  7520:624 Applied Voice 8

• Additional music courses – 2 credits (suggested minimum).
  Graduate-level (music) courses, workshops, advanced problems and/or applied lessons, to be selected by student and advisor.

• Electives – 4 credits.
  Areas may include graduate-level courses in other disciplines, such as theatre arts, in which the student obtains permission of instructor, or additional music courses, as determined by the student and advisor.

Degree total: 34-36 credits

Note: No more than a total of 16 credits of 7520 courses may be applied to the degree.

Performance Option in Keyboard
(C50100MM: Piano Performance)
(C50104MM: Organ Performance)

• Music core courses: eight credits (to be selected):
  7500:555 Advanced Conducting: Instrumental 2
  7500:556 Advanced Conducting: Choral 2
  7500:615 Musical Styles and Analysis I (Chant through Palestrina) 2
  7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  7500:621 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2

• Major required courses – 18–21 credits:
  7500:618 Musical Styles and Analysis IV (20th Century) 2
  7500:685 Vocal Pedagogy 2
  7500:616 Musical Styles and Analysis II (Baroque through early Beethoven) 2
  7500:617 Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss) 2
  7500:621 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2
  7500:623 Music History Survey: Classic and Romantic 2
  7500:624 Music History Survey: Music Since 1900 2

• Electives – four credits.
  Areas may include graduate-level courses in other disciplines, such as theatre arts, for which the student obtains permission of instructor, or additional music courses, as determined by the student and advisor.

Degree total: 34-36 credits

Note: No more than a total of 16 credits of 7520 courses may be applied to the degree.

Performance Option: Choral Conducting
(C50110MM)

• Music Core Courses (8 credits)
  7500:615 Musical Styles and Analysis I 2
  7500:616 Musical Styles and Analysis II 2
  7500:617 Musical Styles and Analysis III 2
  7500:621 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2
  7500:624 Music History Survey: Music Since 1900 2

• Major Required Courses (24 credits)
  7500:556 Advance Choral Conducting 2
  7500:570 Studies in Choral Literature I (Medieval/Renaissance) 2
  7500:571 Studies in Choral Literature II (Baroque) 2
  7500:572 Studies in Choral Literature III (Classic/Romantic) 2
  7500:573 Studies in Choral Literature IV (20th Century) 2
  7500:675 Seminar in Music Education: Group Vocal Techniques 2
  7500:697 Advanced Problems in Music (Choral Conducting) 4
  7500:698 Graduate Recital 2
  7510:620-21 Ensemble* 2
  7520:524 Applied Music 4

• Electives (3 credits)
  Areas may include graduate-level courses in other disciplines, with permission of the instructor, or additional music courses other than ensembles.

Degree total: 36 credits

Note: No more than a total of 16 credits of 7520 courses may be applied to the degree.

Performance Option: Orchestral Conducting
(C50111MM)

• Music Core Courses (8 credits)
  7500:615 Musical Styles and Analysis I 2
  7500:616 Musical Styles and Analysis II 2
  7500:617 Musical Styles and Analysis III 2
  7500:621 Music History Survey: Middle Ages and Renaissance 2
  7500:622 Music History Survey: Baroque 2
  7500:624 Music History Survey: Music Since 1900 2

• Major Required Courses (20 credits)
  7500:555 Advanced Conducting: Instrumental (course to be repeated for a total of four credits) 2
  7500:630 Teaching and Literature: Brass Instruments 2
  7500:631 Teaching and Literature: Woodwind Instruments 2
  7500:632 Teaching and Literature: Percussion Instruments 2
  7500:634 Teaching and Literature: String Instruments 2
  7500:675 Graduate Seminar: Instrumental Arranging 3
  7500:698 Graduate Recital (Conducting) 2
  7510:620-21 Ensemble* 2
  7520:6xx Applied Music (required) 8

Degree total: 37 credits

*Participation in Orchestra required for all semesters in residence.
Performance Option: Wind Conducting
(C50112MM)

- Music core courses – eight credits to be selected from the following:
  (four credits of theory and four credits of history)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>750:616</td>
<td>Musical Styles and Analysis II</td>
<td>2</td>
</tr>
<tr>
<td>750:617</td>
<td>Musical Styles and Analysis III</td>
<td>2</td>
</tr>
<tr>
<td>750:618</td>
<td>Musical Styles and Analysis IV</td>
<td>2</td>
</tr>
<tr>
<td>750:622</td>
<td>Music History Survey: Baroque</td>
<td>2</td>
</tr>
<tr>
<td>750:623</td>
<td>Music History Survey: Classic and Romantic</td>
<td>2</td>
</tr>
<tr>
<td>750:624</td>
<td>Music History Survey: Music Since 1900</td>
<td>2</td>
</tr>
</tbody>
</table>

- Major required courses – 29 credits:
  
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>750:555</td>
<td>Advanced Conducting: Instrumental</td>
<td>2</td>
</tr>
<tr>
<td>750:598</td>
<td>Graduate Recital</td>
<td>2</td>
</tr>
<tr>
<td>751:604</td>
<td>Symphonic Band (repeated for four semesters)</td>
<td>1</td>
</tr>
<tr>
<td>751:625</td>
<td>Concert Band (repeated for four semesters)</td>
<td>1</td>
</tr>
<tr>
<td>750:630</td>
<td>Teaching and Literature: Brass Instruments</td>
<td>2</td>
</tr>
<tr>
<td>750:631</td>
<td>Teaching and Literature: Woodwind Instruments</td>
<td>2</td>
</tr>
<tr>
<td>750:532</td>
<td>Teaching and Literature: Percussion Instruments</td>
<td>2</td>
</tr>
<tr>
<td>750:675</td>
<td>Seminar in Music Education: Instrumental Arranging</td>
<td>3</td>
</tr>
<tr>
<td>750:675</td>
<td>Seminar in Music Education: Wind Literature</td>
<td>2</td>
</tr>
<tr>
<td>752:xxx</td>
<td>Applied Music (repeated for two semesters)</td>
<td>2</td>
</tr>
</tbody>
</table>

Degree total: 37 credits

Theory Option
(C50009MM)

- Music core courses – six credits (to be selected):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>750:555</td>
<td>Advanced Conducting: Instrumental</td>
<td>2</td>
</tr>
<tr>
<td>750:556</td>
<td>Advanced Conducting: Choral</td>
<td>2</td>
</tr>
<tr>
<td>750:621</td>
<td>Music History Survey: Middle Ages and Renaissance</td>
<td>2</td>
</tr>
<tr>
<td>750:622</td>
<td>Music History Survey: Baroque</td>
<td>2</td>
</tr>
<tr>
<td>750:623</td>
<td>Music History Survey: Classic and Romantic</td>
<td>2</td>
</tr>
<tr>
<td>750:624</td>
<td>Music History Survey: Music Since 1900</td>
<td>2</td>
</tr>
<tr>
<td>750:625</td>
<td>Bibliography and Research</td>
<td>2</td>
</tr>
</tbody>
</table>

- Major required courses – 26-28 credits:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>750:615</td>
<td>Musical Styles and Analysis I (Chant through Palestrina)</td>
<td>2</td>
</tr>
<tr>
<td>750:616</td>
<td>Musical Styles and Analysis II (Baroque through early Beethoven)</td>
<td>2</td>
</tr>
<tr>
<td>750:617</td>
<td>Musical Styles and Analysis III (Late Beethoven through Mahler/Strauss)</td>
<td>2</td>
</tr>
<tr>
<td>750:618</td>
<td>Musical Styles and Analysis IV (20th Century)</td>
<td>2</td>
</tr>
<tr>
<td>750:619</td>
<td>Theory and Pedagogy</td>
<td>2</td>
</tr>
<tr>
<td>750:697</td>
<td>Advanced Problems in Music</td>
<td>8</td>
</tr>
<tr>
<td>750:699</td>
<td>Master’s Thesis/Project</td>
<td>4</td>
</tr>
<tr>
<td>751:6—</td>
<td>Ensemble (participation in two ensembles required)**</td>
<td>2</td>
</tr>
<tr>
<td>752:642</td>
<td>Applied Composition</td>
<td>2</td>
</tr>
</tbody>
</table>

- Additional music courses – zero to two credits.

  Graduate-level (music) workshops, applied music (other than composition), advanced problems, and/or courses to be selected by student and advisor.

- Electives – zero to two credits.

To be selected by student and advisor. Areas include graduate-level courses in other disciplines in which student obtains permission of instructor or 7520:642 Applied Composition.

Degree total: 34-36 credits.

**Two semesters ensemble participation required for degrees completed in two semesters. Four semesters ensemble participation required for degrees completed in four semesters.

Physics

Admission Requirements

In addition to the graduate application and official transcripts applicants must submit three letters of recommendation and a statement of purpose, including a resume. Application materials should be submitted by March 15 for fall enrollment. Applications are accepted on a rolling basis for spring enrollment.

Master of Science
(365000M)

- Complete a minimum of 30 graduate credits of approved courses in physics. Up to six credits of graduate-level electives outside the department may be included in the program. There is no foreign language requirement for this degree.

- A cumulative grade-point average of 3.00 or better for all graduate-level credits applicable toward the degree.

- Complete an approved program of courses which includes the following required courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3650:551</td>
<td>Advanced Laboratory I</td>
<td>3</td>
</tr>
<tr>
<td>3650:615</td>
<td>Electromagnetic Theory I</td>
<td>3</td>
</tr>
<tr>
<td>3650:625</td>
<td>Quantum Mechanics I</td>
<td>3</td>
</tr>
<tr>
<td>3650:641</td>
<td>Lagrangian Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>3650:661</td>
<td>Statistical Mechanics</td>
<td>3</td>
</tr>
</tbody>
</table>

- A student preparing for further graduate work in a physical science or for academic or industrial employment should include the following courses in the graduate program:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3650:581.2</td>
<td>Methods of Mathematical Physics I, II</td>
<td>6</td>
</tr>
<tr>
<td>3650:616</td>
<td>Electromagnetic Theory II</td>
<td>3</td>
</tr>
<tr>
<td>3650:626</td>
<td>Quantum Mechanics II</td>
<td>3</td>
</tr>
<tr>
<td>3650:552</td>
<td>Advanced Laboratory II</td>
<td>3</td>
</tr>
</tbody>
</table>

A student must complete at least one of the following two options:

Option A: A formal report, based on an original research project, submitted in a form suitable for publication and approved by a physics faculty committee.

Option B: A master’s thesis.

- Graduate research participation is strongly encouraged. Up to five credits may be earned in 3650:697 Graduate Research upon the completion of a graduate research project. One additional credit may, upon approval by the department, be permitted in 3650:699 Master’s Thesis for the completion of a master’s thesis based on such research. A successful thesis may thus account for up to six of the total of 30 graduate credits required.

Interdisciplinary Option: Chemical Physics

The faculties in the Departments of Physics and Chemistry offer a cooperative option leading to the Ph.D. in chemistry for those graduate students wishing to specialize in the interdisciplinary field of chemical physics.

Admission Requirements

Applicants may be admitted with either a baccalaureate or a master’s degree in either chemistry or physics. Students pursuing this option are subject to all admission and degree requirements for the Ph.D. in chemistry, as outlined in page 29 of this Graduate Bulletin. The Chemical Physics option is described in detail on page 30.

Students entering the Chemistry Ph.D. program under the auspices of the Physics Department will be expected to have taken some advanced undergraduate chemistry course work (200-level and above), and must be recommended by the chair of the Physics Department. These students must select as research advisor a faculty member in the Physics Department holding a joint appointment in Chemistry. Students with principle preparation in physics may be required to audit certain undergraduate prerequisites for graduate chemistry courses.

Political Science

Master of Arts
(370000MA)

Admission Requirements

Admission is open to students who have completed a four-year undergraduate degree with a minimum cumulative grade point average of 3.0 and who fulfill the admission requirements of the Graduate School. Three letters of recommendation (at least two from a faculty member who has worked with the student in the past two years, if applicable) and a personal statement outlining the expected fit between the student’s skills and objectives and the department’s programs and resources are required.

Application materials should be submitted by March 1 for fall enrollment and by December 1 for spring enrollment.

The Master of Arts in Political Science allows students to focus their study in one of three concentrations: American Institutions, Criminal Justice, or International Studies.

Students may also work toward certificates in Applied Politics in conjunction with their graduate studies in Political Science.

Degree Requirements

- Complete 30 credits of graduate work, including 24 credits at the 600 level, as follows:

  - Three required core courses:
    | Course Code | Course Title                        | Credits |
    |-------------|-------------------------------------|---------|
    | 3700:600    | Scope and Theory of Political Science | 3       |
    | 3700:601    | Research Methods in Political Science | 3       |
    | 3700:603    | Scholarly Writing and Professional Development in Political Science | 3 |

  - Two additional departmental seminars, 6 credits (neither Independent Study nor Internship credit counts as a graduate seminar).

  - Two track-required seminars depending on the track chosen (6 credits)

  - Nine additional graduate Political Science credits (500 or 600 level)

- Pass a comprehensive written examination covering one concentration: American Institutions, Criminal Justice, or International Studies.

- Complete the following writing requirement:

- Two track-required seminars depending on the track chosen (6 credits)

- Nine additional graduate Political Science credits (500 or 600 level)

- Pass a comprehensive written examination covering one concentration: American Institutions, Criminal Justice, or International Studies.

- Complete the following writing requirement:
An Essay of Distinction is a single, article-length, scholarly research paper. This writing requirement will encourage our students to learn how to participate in the debates central to our discipline and complete the program with a superb writing sample that can serve as a foundation for continued graduate work, a conference presentation, a published article, or a deliverable policy analysis.

To complete an Essay of Distinction, students are also required to orally defend their paper to their Faculty Advisory Committee (FAC). All FAC members must approve the topic and pass the paper and oral defense.

Master of Applied Politics
(370005MAP)
The Master of Applied Politics, in cooperation with the Ray C. Bliss Institute of Applied Politics, is one of the few programs in the United States focusing on practical politics. It is designed for students interested in efforts to influence political decisions. This includes activities to capture elective public office in partisan contests, influencing legislation, and political organization.

Admission Requirements
Admission is open to students who have completed a four-year undergraduate degree and who fulfill the admission requirements of the Graduate School. Three letters of recommendation (at least one from a faculty member who has worked with the student in the past two years, if applicable) and a personal statement outlining the expected fit between the student's skills and objectives and the department's programs and resources are required. No specific field of undergraduate major is required for admission. The Graduate Record Examination (GRE) is not required. The program is designed to accommodate students taking course work on a part-time basis.

Application materials should be submitted by March 1 for fall enrollment and by December 1 for spring enrollment.

Degree Requirements
• Complete 39 credits of graduate work, including the following:
  • Core courses - 18 credits:
    3700:570 Campaign Management I 3
    3700:571 Campaign Management II 3
    3700:600 Scope and Theory of Political Science 3
    3700:601 Research Methods in Political Science 3
    3700:672 Seminar: Political Influence and Organizations 3
    3700:695 Internship in Government and Politics* 3
  * Three credits required: additional credits will be counted toward elective credit.
  • Elective courses - 21 credits (6 credits must be at the 600-level)

Six credits from the following:

3700:540 Survey Research Methods 3
3700:572 Campaign Finance 3
3700:574 Political Opinion, Behavior, and Electoral Politics 3
3700:577 Lobbying 3
3700:655 Campaign and Election Law 3
7600:575 Political Communication 3

Fifteen credits of additional course work from above or from approved courses in Political Science, Communication, Public Administration, or other departments.

• Prepare an applied politics portfolio containing:
  - At least two major papers prepared for required courses.
  - An applied politics capstone project assigned by the student’s advisor.
  - Pass an oral defense of the applied politics portfolio.

J.D./Master of Applied Politics
Admission Requirements
This joint J.D./Master of Applied Politics degree combines the two degrees while allowing students to complete requirements with fewer credits than taking the degrees separately. To be accepted into the program, a student must meet the admission requirements of the School of Law, the Graduate School, and the Department of Political Science.

Degree Requirements
Students must complete the following:
• J.D. required courses - 44 credits
• MAP required courses - 24 credits (18 credits core courses; 6 credits required electives)
• Joint Law School/Political Science Course - 3 credits
  3700:655/9200:655 Campaign and Election Law 3
• J.D. Elective Courses - 32 credits
At least three credits from the following courses:
9200:623 Administrative Law 3
9200:642 Alternative Dispute Resolution 3
9200:644 First Amendment Law 3

• MAP Electives - 6 credits
Choose two from the following courses:
3700:502 Politics and the Media 3
3700:540 Survey Research Methods 3
3700:572 Campaign Finance 3
3700:574 Political Opinion, Behavior, and Electoral Politics 3
3700:577 Lobbying 3
3700:620 Seminar in Comparative Politics 3
3700:630 Seminar in National Politics 3
3700:668 Seminar in Public Policy Agendas and Decisions 3
3700:690 Special Topics in Political Science (Applied Politics focus) 3
3700:695 Internship in Government and Politics (in addition to required three credits) 3
7600:575 Political Communication 3

• Prepare an applied politics portfolio containing:
  - At least two major papers prepared for required courses.
  - An applied politics capstone project assigned by the student’s advisor.
  - Pass an oral defense of the applied politics portfolio.

Psychology
Master of Arts
(375013MA: Industrial/Organizational-Nonthesis Option)
Admission Requirements
Fulfills admission requirements of the Graduate School and the following departmental requirements:
• psychology major or minimally the equivalent of psychology undergraduate minor including a general or introductory course, statistics course, and experimental psychology course;
• GPA of 3.00 in psychology courses;
• Graduate Record Examination General Test;
• three letters of recommendation.

Application materials must be received by January 15.

Degree Requirements
• Course requirements:
  - completion of graduate psychology courses, including the M.A. core courses or equivalents, specialty area required courses, and electives as specified in the department’s graduate student manual;
  - a student is required to maintain at least a 3.0 grade-point average in M.A. content courses as well as overall.
• Other requirements:
  - refer to the Department of Psychology Graduate Student Manual for additional guidelines;
  - complete and fulfill general master’s degree requirements of the Graduate School.

Completion of coursework, practicum and examinations (no thesis required), with a minimum of 41 credits of graduate work.

Public Administration and Urban Studies
Master of Arts in Urban Studies
(398000MA)
The master's degree focus is on applied policy. Students receive a contextual grounding of analysis methods and organization implementation methodology for areas of specialization.

Admission Requirements
Admission is open to students who have completed an undergraduate (bachelor's) degree. No specific field of undergraduate major is required for admission. The GPA requirements for consideration for full admission is an overall bachelor GPA of 2.8 or greater, or 3.05 for the last 60 credit hours. Provisional admission may be granted for those with an overall GPA between 2.5 and 2.79. Additionally, applicants must submit the following:
• For students who have an overall GPA below 3.0 a standardized test score from the GRE, GMAT, or LSAT.
• A copy of their current resume (especially important for in-service students to ascertain their professional experience).

• A personal essay explaining why they study and completion of a MA degree will help them with their personal or professional goals.

Admission decisions are made by the department committees as explained in the PAUS Master’s Handbook.

Applications are accepted on a rolling basis. For those students seeking a graduate assistantship application materials must be received by July 1 for fall enrollment, November 15 for spring enrollment, and April 1 for summer enrollment.

Degree Requirements

Satisfactory completion of a minimum of 33 credit hours of graduate study, including 18 credit hours of core classes and 15 credit hours in an approved specialization.

Required Core (18 credits)

- [3980:600] Basic Quantitative Research 3
- [3980:601] Advanced Research and Statistical Methods 3
- [3980:615] Public Organization Theory 3
- [3980:643] Introduction to Public Policy 3
- [3980:671] Program Evaluation in Urban Studies 3
- [3980:675] Advanced Techniques in Policy Analysis 3

Specializations: Specializations represent career and/or academic fields of interest. Specializations for the MA are listed in the PAUS Master’s Handbook. Some specializations represent the inclusion of certificate programs on campus; some students may work with their advisors to craft a specialization that fits their needs and interests. Students should contact the department office to get a copy of the student handbook.

Thesis: Students are encouraged to consider the option of a thesis. A maximum of six credit hours of thesis course work can be applied to a specialization.

Other: Credit/Non-Credit courses do not count toward the minimum number of credit hours required for graduation.

Master of Public Administration (MPA)

(398005MPA)

The Master of Public Administration (MPA) program has been accredited by the National Association of Schools of Public Affairs and Administration (NASPAA) through the 2010-2011 academic year. The MPA program is designed to prepare students for their public service careers in public management and administration, as well as the management of non-profit organizations.

Admission Requirements

Admission is open to students who have completed an undergraduate (bachelor’s) degree. No specific field or undergraduate major is required for admission. The GPA requirements for consideration for full admission is an overall GPA of 2.8 or greater or 3.05 for the last 60 credit hours. Provisional admission may be granted for those with an overall GPA between 2.5 and 2.79. Additionally, applicants must submit the following:

• For students who have an overall GPA below 3.0 a standardized test score from the GRE, GMAT, or LSAT, or MAT.

• A copy of their current resume (especially important for in-service students to ascertain their professional experience).

• A personal essay explaining why the study and completion of a MPA degree will help them with their personal or professional goals.

Admission decisions are made by the department committee as explained in the department handbook.

Applications are accepted on a rolling basis. For those students seeking a graduate assistantship application materials must be received by July 1 for fall enrollment, November 15 for spring enrollment, and April 1 for summer enrollment.

Degree Requirements

Satisfactory completion of a minimum 48 credit hours of graduate study, including 30 credit hours of core classes, 15 credit hours of specialization courses, and three credit hours of internship (3980:695). Students with sufficient professional work experience may petition for a waiver of the internship course, and those students that are granted an internship waiver have a minimum of 45 credit hours for the degree. Procedures for an internship waiver are included in the PAUS Master’s handbook.

• Core requirements (33 credit hours):
  - [3980:600] Basic Quantitative Research 3
  - [3980:601] Advanced Research and Statistical Methods 3
  - [3980:610] Legal Foundations of Public Administration 3
  - [3980:611] Introduction to the Profession of Public Administration 3
  - [3980:614] Ethics and Public Service (capstone class) 3
  - [3980:615] Public Organization Theory 3
  - [3980:616] Personnel Management in the Public Sector 3
  - [3980:640] Fiscal Analysis 3
  - [3980:642] Public Budgeting 3
  - [3980:643] Introduction to Public Policy 3
  - [3980:695] Internship 3

Specializations: Specializations represent career and/or academic fields of interest. Specializations for the MPA are listed in the Master’s handbook. Some specializations represent the inclusion of certificate programs on campus; some students may work with their advisors to craft a specialization that fits their needs and interests. Students should contact the department office to get a copy of the handbook.

Thesis: Students are encouraged to consider the option of a thesis. A maximum of six credit hours of thesis course work can be applied to a specialization.

Other: Credit/Non-Credit courses do not count toward the minimum number of credit hours required for graduation.

J.D./Master of Public Administration

The University offers a joint J.D. and Public Administration program. The title is J.D./M.P.A. To be accepted into the program, a student must meet the admission requirement of the School of Law, the Graduate School, and the Department of Public Administration and Urban Studies.

Degree Requirements

Seventy-six credits in law and 30 credits in public administration. Under this program a student must take 43 credits of required law courses, 32 credits of law electives, and 30 credits of required public administration courses plus an internship of three credits. Internship is required of any student without professional administrative experience.

This program reduces the total existing credit hours of the School of Law and Public Administration by nine credit hours (from 85 to 76), while public administration requirements are reduced by 12 credit hours (from 42 to 30).

Sociology

Master of Arts

(385010MA: Thesis Option)

(385011MA: Nonthesis Option)

The University of Akron and Kent State University offer a joint graduate program in Sociology. Coursework is offered at both campuses, faculty from both campuses serve on students’ committees and research projects.

It should be noted that the program seeks to admit students who expect to complete a Ph.D. at The University of Akron, and the curriculum is structured to serve full-time students. Thus, students generally complete the requirements for the master’s degree in the process of pursuing the doctorate. It is recommended that students who are not interested in receiving a Ph.D. or who are interested in a part-time program of study consider applying to sociology programs that focus on awarding master’s degrees and which are better able to serve the needs of part-time students.

Admission Requirements

The curriculum is designed for fall admission only, and completed application materials must be received by January 15 for those applicants seeking financial support from the department. Applicants not seeking funding must have application materials submitted by March 1.

Specific criteria considered for admission include:

• Fulfill admission requirements of the Graduate School and department
• Undergraduate cumulative grade point average of 3.0
• GRE General Test
• Personal statement indicating reasons for pursuing a graduate degree in Sociology at The University of Akron
• Three letters of recommendation from persons familiar with the applicant’s academic work
• Applicants whose native language is not English must score at least 577 (paper-based) of 233 (computer-based) on the TOEFL.

Note: The admissions committee is unable to consider incomplete applications. Interested applicants are encouraged to visit the department website for further information about the program and the application process.

Thesis Option

In addition to meeting the general requirements of the Graduate School, a student working toward the M.A. in Sociology must fulfill the following requirements:

• Complete 35 credit hours of coursework (14 credits of required coursework, 15 credits of electives, and six credits of thesis) with at least a 3.0 grade point average. Only three credit hours taken at the 500-level, and only three credit hours of 697 or 698 can be counted toward the degree.

• Complete the following required courses:
  - 3850:604 Quantitative Methods in Sociology 4
  - 3850:628 Professional and Ethical Issues in Sociology 3
  - 3850:706 Multivariate Techniques in Sociology 4
  - 3850:722 Early Sociological Thought 3
• Complete six credit hours of thesis (3850:699). No more than six credits will count toward the degree.
• Completion of master’s thesis and successful oral defense of thesis.

Nonthesis Option
In rare circumstances it may be determined by the graduate faculty that the M.A. degree may be completed through the non-thesis option. This terminal degree will be completed through a process focused on intensive substantive training in a specialized area.
In addition to meeting the general requirements of the Graduate School, a student working toward a non-thesis M.A. in Sociology must fulfill the following requirements:
• Complete the following required courses with at least a 3.00 grade-point average:
  - 3850:651 Probability and Statistics 4
  - 3850:652 Advanced Mathematical Statistics 3
  - 3850:663 Experimental Design 3
  - 3850:685 Regression 3
  - 3850:689 Advanced Topics in Statistics 4
  - 3850:706 Multivariate Techniques in Sociology 3
• Completion of at least 21 additional credits of elective coursework. Only six credit hours taken at the 500-level and only three credit hours of 697 or 698 can be counted toward the degree. Twelve to 15 of these credits must be in a contracted specialty area defined in consultation with the student’s advisor and approved by the Graduate Studies Committee.
• Pass an oral examination on the specialty area.

Spanish
Master of Arts (358000MA)
Admission Requirements
In addition to the graduate application three letters of recommendation and a statement of purpose must be submitted. Applicants must have a minimum score of Advanced Low on the Oral Proficiency Interview (score must be no more than two years old). Applications are accepted on a rolling basis.
Program Requirements
• Thirty-two semester credits of graduate coursework in Spanish.
• Proficiency level in listening comprehension, speaking, reading, and writing Spanish, and cultural and literary proficiency.
• Final research paper: the candidate will be required to submit a long essay in Spanish reflecting the results of a research project, and to make an oral defense of the essay.

Statistics
Master of Science – Statistics
(347000MS: Non-thesis Option)
(347000MS: Thesis Option)
Admission Requirements
Entrance into the program will require the initial completion of the following prerequisites:
Three semesters of calculus or equivalent
One semester of Linear Algebra or equivalent.
One semester of Applied Statistics or equivalent.
Applicants must also submit three letters of recommendation.
• Core curriculum:
  - 3470:580 Statistical Data Management 3
  - 3470:651 Probability and Statistics 4
  - 3470:652 Advanced Mathematical Statistics 3
  - 3470:663 Experimental Design 3
  - 3470:685 Regression 3
  - Total 16

Thesis requirements (30 credits of graduate work)
In addition to the core curriculum, students must take three credits in 3470:689 Advanced Topics in Statistics, 2-4 credits in 3470:699 Master’s Thesis, and 7-9 credits of other approved graduate electives. Upon approval of the thesis by the student’s advisor and reader the thesis must be presented in a colloquium to faculty and students.

Nonthesis requirements (33 credits of graduate work)
In addition to the core curriculum, students must take three credits in 3470:689 Advanced Topics in Statistics, 2-4 credits in 3470:692 Statistics Masters Paper, and 10-12 other approved elective graduate credit hours must be completed. Upon approval of the Statistics Master’s Paper by the student’s adviser and reader, the paper must be presented in a colloquium to faculty and students.

Theatre Arts
The School of Dance, Theatre, and Arts Administration offers a master of arts degree.
Admission Requirements
• Complete the general requirements for admission to the Graduate School.
• Complete an undergraduate major in the area of proposed graduate work or equivalent work as approved by the coordinator of the graduate arts administration/theatre program.
• Statement of purpose (no more than 300 words) summarizing background and outlining career goals.
All application materials must be received by March 15 for fall enrollment.

Arts Administration Option
(C80006MA)
• Complete a minimum of 45 credits.
• Required theatre arts courses (30-33) credits:
  - 7800:600 Research and Writing Techniques 3
  - 7800:605 Colloquium in the Arts 3
  - 7800:665 Audience Development 3
  - 7800:666 Principles of Arts Administration 3
  - 7800:682 Fund Raising and Grantsmanship in the Arts 3
  - 7800:691 Arts Administration Policies and Practices 3
  - 7800:692 Legal Aspects of Arts Administration 3
  - 7800:698 Internship 3-6
  - 7800:699 Master’s Thesis 6
• Required business courses (9 credits):
  - 6200:590 Special Topics in Accounting 3
  - 6500:600 Management and Organizational Behavior 3
  - 6600:650 Marketing Concepts or
  - 6600:630 Customer Relationship Management 3
• Electives in related fields (3-6 credits):
  - Options here include coursework in business, computer science, urban studies, art, music, law, theatre and dance.
  - Complete an oral defense of the thesis.
  - General electives 0-3

Theatre Option
(C80002MA)
(Admissions currently suspended)
(Summer program)
Complete a minimum of 36 credits distributed as follows:
• School core courses - 24 credits:
  - 7800:600 Research and Writing Techniques 3
  - 7800:641 Problems in Directing 3
  - 7800:645 Seminar in Dramatic Literature 3
  - 7800:646 Graduate Acting: Techniques 3
  - 7800:658 History of Theatre 3
  - 7800:662 Seminar in Scenic Design 3
  - 7800:699 Master’s Thesis 6
• Graduate electives:
  - 12 credits (to be selected from Theatre Arts, English, Communication, Music, etc., in consultation with the student’s advisor or the graduate program coordinator.)
College of Engineering

George Haritos, Ph.D., Dean
Ajay Mahajan, Ph.D., Associate Dean for Research
Craig C. Menzemer, Ph.D., Associate Dean for Graduate Studies and Administration

Mission of the College

The College of Engineering at the University is committed to excellence in undergraduate and graduate education. The College of Engineering was founded in 1914 and is the second oldest college at the University. The College embraces the departments of Biomedical Engineering, Chemical Engineering, Civil Engineering, Electrical and Computer Engineering, and Mechanical Engineering. The current research focus of the College includes: gas turbine engineering, filtration technology, nanotechnology, lightweight automobile research, aero-propulsion technology, catalysis, industrial controls, computational mechanics, smart materials, composites, and civil structures, and a variety of modeling and simulation issues of engineering problems. During the academic year 1989-90, the College adopted interdisciplinary procedures for the doctoral program offered by the College. The program is truly interdisciplinary in nature.

The mission of graduate education in the College of Engineering is to:

- Train engineers and scientists to solve state of the art technological issues.
- Train students to develop theory, methodology, and necessary experimental skills to investigate emerging issues in engineering and science that effect state and national interests.
- Provide excellence in presenting student findings via theses, doctoral dissertations, and research papers.
- Train students to be future educators where appropriate.
- Train students in industrial research where appropriate.

As the state positions itself in the forefront of the technology, appropriately trained scientists and engineers are needed in all fields. Our graduate programs provide training that equips students with the maturity and ability to assume leadership roles in technological fields related to the field of engineering. In addition, our programs attract a variety of students from several industries and NASA Glenn Research Center in Northeast Ohio. The College is a partner of the Ohio Aerospace Institute (OAI).

DOCTOR OF PHILOSOPHY IN ENGINEERING DEGREE

The Doctor of Philosophy in Engineering is an interdisciplinary doctoral program offered on a collegiate basis; however, when making application a student must indicate a primary discipline (420000PHD Chemical Engineering; 430000PHD Civil Engineering; 440000PHD Electrical Engineering; 445000PHD Computer Engineering; 460000PHD Mechanical Engineering; or 480000PHD Biomedical Engineering).

Admission Requirements

Applicants for the Doctor of Philosophy in Engineering must hold a bachelor's degree from a program that is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology at the time of graduation, or provide satisfactory evidence of an equivalent academic background to the Dean of the College of Engineering.

Applicants with a master of science degree must provide satisfactory evidence of an equivalent engineering baccalaureate background to the Dean of the College of Engineering.

Applicants must submit official undergraduate transcripts, undergraduate grade point average, three letters of recommendation, and official results of the verbal, quantitative, and analytical portions of the GRE. A statement of purpose should also be submitted. Personal statements or descriptions of post-baccalaureate experience that provide a rationale for the proposed graduate study may also be submitted.

The GRE minimum requirement for admission into a graduate program in the College of Engineering (both master's and doctoral) is 1150. The GRE score is derived by using the following formula: Quantitative Score + (100 x 4/3 x Analytical Score). The GRE requirement may be waived for students holding degrees from ABET accredited programs (if the department approves).

Applicants with a bachelor's degree must have a cumulative grade-point average of at least 3.0/4.0.

Applicants with a master's degree must have a cumulative grade point average of at least 3.5/4.0.

Applications whose native language is not English must have a TOEFL score of at least 550 (paper-based) or 213 on the computer-based TOEFL, and also must submit their score on the Test of Written English. Applicants to the Department of Biomedical Engineering must have a TOEFL score of 590 (paper-based) or 243 (computer-based).

Applicants not satisfying the requirements for Full Admission may be classified either as a Provisional Admission or as a Deferred Admission.

Applicants with a bachelor's degree in a discipline other than engineering shall have completed undergraduate coursework in calculus, differential equations, and have one year of classical physics. These students may be required to take additional bridge-up courses depending on their background. Necessary bridge-up coursework will be determined by the admitting department/program graduate committee.

Transfer Credits

A student who has a master's degree from another university or from one of the departments in the College of Engineering may, upon recommendation of the Interdisciplinary Doctoral Committee, transfer up to 24 credits of course work. The course comprising the transfer credits must be identified and itemized on the Plan of Study and must be substantiated by an official transcript from the educational institution that offered the courses.

A student who has completed a non-thesis master's degree, or has graduate credits but has not completed the degree requirements for the master's degree, can transfer a maximum of 24 credits of course work toward the doctoral course requirements.

No more than six credit hours of research or complete thesis credits can be transferred.

Degree Requirements

The University's Academic Requirements (See Academic Requirements in this Graduate Bulletin) for the Doctoral Degree and the following College of Engineering's academic requirements for the Doctoral Degree must be satisfied:

- An entering doctoral student will have the chair of the Interdisciplinary Doctoral Committee (IDC) in his/her home department/program.
- Student's plan of study should include 96 credit hours and be in accordance with the guidelines established by the student's admitting department/program.
- A Plan of Study will be established by the IDC satisfying guidelines established by the home department/program.
- Identify an interdisciplinary field of study, a dissertation director, and an Interdisciplinary Doctoral Committee before completion of 18 credits of coursework.
- Pass a departmental Qualifying Examination. The purpose of the qualifying examination is to determine the student's ability to conduct independent research.
- Pass a Candidacy Examination. The purpose of the candidacy examination is to test the student's ability to conduct independent research.
- Present an acceptable Dissertation Proposal that describes the research that will be undertaken.
- Satisfy the language requirement specified by the Interdisciplinary Doctoral Committee.
- Identify an Interdisciplinary Doctoral Committee, consisting of a minimum of three members.
- Arranging, through the Dissertation Director, all Interdisciplinary Doctoral Committee meetings.
- Initiating, through the Dissertation Director, the forms that monitor the progress toward the doctoral degree.
- Proposing and executing an accepted Plan of Study.
- Proposing a Research Proposal and executing the proposed research.
- Preparing a scientifically acceptable and comprehensive dissertation whose format meets all the accepted standards of the Interdisciplinary Doctoral Committee, the College of Engineering, and the Graduate School.

Doctoral Student's Responsibilities

Doctoral students are completely responsible for all aspects of their graduate education. Specifically, these responsibilities include:

- Understanding, adhering to, and implementing the procedures of the Graduate School, as described in The University of Akron Graduate Bulletin, and the Interdisciplinary Doctoral Procedures of the College of Engineering.
- Selecting an interdisciplinary program, Dissertation Director, and Interdisciplinary Doctoral Committee.
- Arranging, through the Dissertation Director, all Interdisciplinary Doctoral Committee meetings.
- Initiating, through the Dissertation Director, the forms that monitor their progress toward the doctoral degree.
- Proposing and executing an accepted Plan of Study.
- Proposing a Research Proposal and executing the proposed research.
- Preparing a scientifically acceptable and comprehensive dissertation whose format meets all the accepted standards of the Interdisciplinary Doctoral Committee, the College of Engineering, and the Graduate School.

Graduate Studies
Coordinated program for the Doctor of Philosophy in Engineering degree between The University of Akron and Youngstown State University

The University of Akron and Youngstown State University are engaged in a coordinated program with the objective of facilitating graduate study by engineering students residing in proximity to Youngstown State University. This provides the opportunity and convenience of completing some of the requirements for the Doctor of Philosophy in Engineering at The University of Akron through joint counseling and enrollment at Youngstown State University.

Admission Requirements

When an engineering graduate student at Youngstown State University declares an interest in the joint doctoral program, the student shall prepare a letter of intent, with academic credentials, to the dean of engineering at Youngstown State University. The dean of engineering at Youngstown State University shall forward the letter of intent and academic credentials, together with a recommendation, to the dean of engineering at The University of Akron. The dean of engineering at The University of Akron shall have the graduate faculty in the applicant’s discipline evaluate the academic credentials and make a recommendation on the academic acceptability of the applicant. If the recommendation is favorable, the student shall be advised to apply to the Graduate School at The University of Akron for formal admission to the Doctoral Program in the College of Engineering at The University of Akron. The dean of Graduate Studies and Research at Youngstown State University shall be kept informed of the progress of the admission procedure. The applicant from Youngstown State University must satisfy the Admission Requirements for the Doctor of Philosophy in Engineering at The University of Akron.

Degree Requirements

The engineering student from Youngstown State University must satisfy the Degree Requirements for the Doctor of Philosophy in Engineering at The University of Akron subject to the following modifications.

One of the members of the Interdisciplinary Doctoral Committee for the joint doctoral program candidate shall be an engineering faculty member from Youngstown State University and normally would be the student’s dissertation director, although this is not necessary. The faculty member from Youngstown State University shall have adjunct status at The University of Akron and qualify for Category II graduate faculty membership.

One-half of the coursework and one-half of the research credits may be taken at Youngstown State University or Youngstown State University. The parity of courses is decided by the faculty on the Interdisciplinary Doctoral Committee when the student submits a proposed Plan of Study. At the Advancement to Candidacy, the Committee recommends official transfer of credits from Youngstown State University to The University of Akron.

Joint program for the M.D. and Ph.D. in Engineering degree between the College of Engineering at The University of Akron and the Northeast Ohio Medical University (NEOMED)

The College of Engineering and NEOMED provide a coordinated program for those desiring both the M.D. and Ph.D. in Engineering degrees. This program integrates the basic science and engineering disciplines and skills acquired by the student in each of the programs. Each individual coordinated degree program is tailored to suit the background and research interests of the student. Additional information may be obtained from The University of Akron Department of Biomedical Engineering or NEOMED.
Admission Requirements

Applicants with a bachelor’s or master’s degree in a discipline other than engineering or in engineering will be required to meet the Admission Requirements for the Doctor of Philosophy Degree in Engineering. Applicants will be required to have completed the following courses and to have taken the MCAT prior to admission into the coordinated M.D. and Doctor of Philosophy in Engineering program:

- M.D. Principles of Chemistry I and II
- M.D. Organic Chemistry I and II
- M.D. Principles of Biology I and II
- M.D. Ph.D. Classical Physics I and II
- Ph.D. Statics
- Ph.D. Dynamics
- Ph.D. Strength of Materials (or Material Science)
- Ph.D. Basic Electrical Engineering (or Circuits I & II)
- Ph.D. Calculus I, II, III, and Differential Equations

Degree Requirements

To obtain an M.D. degree from NEOMED and a Doctor of Philosophy Degree in Engineering, the student must satisfy NEOMED degree requirements and the College of Engineering’s Doctor of Philosophy in Engineering Degree Requirements. This coordinated program does not change the degree requirements for either program.

MASTER OF SCIENCE DEGREES

The degrees of Master of Science in Chemical Engineering, Master of Science in Civil Engineering, Master of Science in Electrical Engineering, Master of Science in Mechanical Engineering, and Master of Science in Engineering are offered.

Admission Requirements

Applicants for any of these master of science programs must hold a bachelor’s degree from a program that is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology at the time of graduation, or provide evidence of an equivalent academic background to the Dean of the College of Engineering and the appropriate department chair.

Applicants must submit an official undergraduate transcript, undergraduate grade point average, three letters of recommendation, and official results of the verbal, quantitative, and analytical portions of the GRE. A statement of purpose should also be submitted.

The GRE minimum requirement for admission into a graduate program in the College of Engineering (both master’s and doctoral) is 1150. The GRE score is derived by using the following formula: Quantitative Score + (100 x 4/3 x Analytical Score). The GRE requirement may be waived for students holding degrees from ABET accredited programs (if the department approves).

Applicants with a bachelor’s degree must have an overall grade-point average of 2.75 or better or 3.00 for the last two years (84 semester credits or equivalent).

Applicants whose native language is not English must have a TOEFL score of at least 550 (paper-based) or 213 on the computer-based TOEFL, and also must submit their score on the Test of Written English (TWE). Applicants to the Department of Biomedical Engineering must have a TOEFL score of 590 (paper-based) or 243 (computer-based).

Applicants who do not satisfy the requirements for Full Admission may be granted Provisional Admission or Deferred Admission.

Degree Requirements

The University’s Academic Requirements (See Academic Requirements in this Graduate Bulletin), the following College of Engineering requirements and the department’s academic requirements must all be satisfied for the master of science degrees in the College of Engineering.

- Identify a three-member Advisory Committee including a major advisor before completion of 9 credit hours of coursework.
- Complete a formal Plan of Study that is acceptable to the Advisory Committee with a minimum of 24 credit hours of coursework of which no more than 6 credits are special topics courses. The formal Plan of Study may be revised upon approval of the Advisory Committee.
- Successfully (no “fail” votes) defend the thesis before the Advisory Committee, or have the Engineering Report approved by the Advisory Committee, or successfully complete the appropriate department’s nonthesis option requirements.

Master of Science in Chemical Engineering

(420000MS: Non-thesis Option)
(420000MST: Thesis Option)

Applicants with a bachelor’s degree in a discipline other than engineering shall have completed coursework in calculus, differential equations, have one year of classical physics, and must complete:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4200:200</td>
<td>Material and Energy Balances</td>
<td>4</td>
</tr>
<tr>
<td>4200:225</td>
<td>Equilibrium Thermodynamics</td>
<td>4</td>
</tr>
<tr>
<td>4200:321</td>
<td>Transport Phenomena</td>
<td>3</td>
</tr>
<tr>
<td>4200:330</td>
<td>Reaction Engineering</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

An overall GPA of 3.0 must be maintained for these courses. These undergraduate engineering courses may be taken prior to graduate admission, or concurrently if the student has Full Admission or Provisional Admission and is enrolled for at least 9 graduate credits.

Thesis Option

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4200:600</td>
<td>Transport Phenomena</td>
<td>3</td>
</tr>
<tr>
<td>4200:605</td>
<td>Chemical Reaction Engineering</td>
<td>3</td>
</tr>
<tr>
<td>4200:610</td>
<td>Classical Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>4200:697</td>
<td>Chemical Engineering Report</td>
<td>3</td>
</tr>
<tr>
<td>4200:605</td>
<td>Chemical Reaction Engineering</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

Nonthesis Option

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4200:600</td>
<td>Transport Phenomena</td>
<td>3</td>
</tr>
<tr>
<td>4200:605</td>
<td>Chemical Reaction Engineering</td>
<td>3</td>
</tr>
<tr>
<td>4200:610</td>
<td>Classical Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>4200:697</td>
<td>Chemical Engineering Report</td>
<td>3</td>
</tr>
<tr>
<td>4200:605</td>
<td>Chemical Reaction Engineering</td>
<td>3</td>
</tr>
<tr>
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<td></td>
<td>36</td>
</tr>
</tbody>
</table>

*Chemical Engineering students in both degree options are expected to attend and to participate in the department's seminars.

**Students without BS in Chemical Engineering are required to take 4200:535, 4200:541.

Five Year BS/MS Chemical Engineering Program (420001MS)

The five year BS/MS program in Chemical Engineering provides superior undergraduate students with the opportunity to complete an M.S. in Chemical Engineering with one additional year of study beyond their B.S. Chemical Engineering degree at The University of Akron. The program is only available to B.S. Chemical Engineering students at The University of Akron. Applications are accepted in the Spring of the junior year.

Master of Science in Civil Engineering

(430000MS: Non-thesis Option)
(430000MST: Thesis Option)

Applicants with a bachelor’s degree in a discipline other than engineering shall have completed coursework in calculus, differential equations, have one year of classical physics, and must select and complete undergraduate coursework from one of four undergraduate disciplines. These undergraduate engineering courses may be taken prior to graduate admission, or concurrently if the student has full admission or provisional admission, and is enrolled for at least 9 graduate credits.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300:306</td>
<td>Theory of Structures</td>
<td>3</td>
</tr>
<tr>
<td>4300:313</td>
<td>Soil Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>4600:310</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>4300:323</td>
<td>Water Supply and Wastewater Disposal</td>
<td>4</td>
</tr>
<tr>
<td>4300:341</td>
<td>Hydraulics</td>
<td>3</td>
</tr>
<tr>
<td>4300:361</td>
<td>Transportation Engineering</td>
<td>3</td>
</tr>
<tr>
<td>4300:401</td>
<td>Steel Design</td>
<td>3</td>
</tr>
<tr>
<td>4300:403</td>
<td>Reinforced Concrete Design</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>25</td>
</tr>
</tbody>
</table>

Areas of study in the department include structural mechanics, geotechnical, hydraulic, transportation, and environmental engineering.

Thesis Option

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universitywide</td>
<td>Civil Engineering Courses</td>
<td>15</td>
</tr>
<tr>
<td>Universitywide</td>
<td>Approved Mathematics or Science</td>
<td>3</td>
</tr>
<tr>
<td>Universitywide</td>
<td>Approved Electives</td>
<td>6</td>
</tr>
<tr>
<td>Universitywide</td>
<td>Master’s Thesis</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>30</td>
</tr>
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</table>

Nonthesis Option

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universitywide</td>
<td>Civil Engineering Courses</td>
<td>15</td>
</tr>
<tr>
<td>Universitywide</td>
<td>Approved Mathematics or Sciences</td>
<td>3</td>
</tr>
<tr>
<td>Universitywide</td>
<td>Approved Electives</td>
<td>12</td>
</tr>
<tr>
<td>Universitywide</td>
<td>Engineering Report</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>32</td>
</tr>
</tbody>
</table>

Master of Science in Electrical Engineering

(440000MS: Non-thesis Option)
(440000MST: Thesis Option)

Applicants with a bachelor’s degree in a discipline other than engineering shall have completed coursework in calculus, differential equations, have one year of classical physics, and must select and complete undergraduate coursework from one of four undergraduate disciplines. These undergraduate engineering courses may be taken prior to graduate admission, or concurrently if the student has full admission or provisional admission, and is enrolled for at least 9 graduate credits.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4400:360</td>
<td>Physical Electronics</td>
<td>3</td>
</tr>
<tr>
<td>4400:361</td>
<td>Electronic Design</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>
Areas of study in the department include computer engineering, control system engineering, power system engineering, electromagnetics, and related areas.

**Thesis Option**

- Electrical Engineering Courses**
- Approved Mathematics
- Approved Electives
- Master’s Thesis
- Total

**Nonthesis Option**

- Electrical Engineering Courses**
- Approved Mathematics
- Approved Electives
- Total

Electrical engineering students pursuing the nontensity option must pass a graduate level oral comprehensive examination which may be taken after 24 credits have been completed.

**Master of Science in Mechanical Engineering**

*(460000MS: Non-thesis Option)*

*(460000MST: Thesis Option)*

Applicants with a bachelor’s degree in a discipline other than engineering shall have completed coursework in calculus, differential equations, with one year of classical physics, and must select and complete undergraduate coursework from one of four undergraduate disciplines. These undergraduate engineering courses may be taken prior to graduate admission or concurrently if the student has full admission or provisional admission and is enrolled for at least 9 graduate credits.

**Thesis Option**

- Mechanical Engineering Courses*
- Approved Mathematics
- Approved Electives
- Master’s Thesis
- Total

**Nonthesis Option**

- Mechanical Engineering Courses*
- Approved Mathematics
- Approved Electives
- Engineering Report
- Total

Main areas of graduate study in mechanical engineering include systems and controls, engineering mechanics, materials, and thermal-fluid sciences. Students in the department are encouraged to take at least one mechanical engineering course outside the main area of interest to develop some breadth in their graduate education.

**Thesis Option**

- Mechanical Engineering Courses*
- Approved Mathematics
- Approved Electives
- Master’s Thesis
- Total

**Nonthesis Option**

- Mechanical Engineering Courses*
- Approved Mathematics
- Approved Electives
- Engineering Report
- Total

*The elective chemical engineering courses may not include more than three credits of 500 level courses.

**The required electrical engineering coursework of 18 credits may not include more than six credits of 500-level courses.

**Master of Science in Engineering**

*(410000MSE: Non-thesis Option)*

*(410000MSET: Thesis Option)*

This program is intended for the student whose educational objectives cannot be met by the four departmental master of science programs or those who wish to specialize in biomedical engineering, polymer engineering, or engineering management.

**Admission**

Except for students in biomedical engineering and polymer engineering, students should declare in writing to the Dean of Engineering of their intention to study toward the Master of Science in Engineering degree. Upon admission, the dean will appoint an advisory committee consisting of three faculty members who are selected from at least two different departments.

**Thesis Option**

- Engineering Courses
- Approved Mathematics or Science
- Approved Electives
- Master’s Thesis
- Total

The thesis must be successfully (no “fail” votes) defended before the Advisory Committee.

**Nonthesis Option**

- Engineering Courses
- Approved Mathematics or Science
- Approved Electives
- Engineering Report
- Total

The engineering report must receive the approval of the Advisory Committee.

**Biomedical Engineering Specialization**

*(410002MSE)*

- Biomedical Instrumentation I
- Biometry
- Physiology for Engineers and Lab
- Approved Electives
- Master’s Thesis
- Total

The thesis must be successfully (no “fail” votes) defended before the Advisory Committee.

**Polymer Engineering Specialization**

*(410003MSE)*

- Polymer Engineering Core
- Polymer Engineering Electives
- Approved Engineering and Science Elective
- Engineering Report
- Total

The thesis must be successfully (no “fail” votes) defended before the Advisory Committee.

**Elective**

Choose three credits of 600 level College of Business Administration courses.

1 Engineering courses can be taken from any engineering department with approval of engineering advisor.

2 The Engineering Management Report must be approved by the advisor and Advisory Committee. One member of the committee shall be from the College of Business Administration.

3 More advanced graduate business courses shall be required of students who have completed similar undergraduate courses. This determination shall be made by the Assistant Dean and Director of Graduate Programs, College of Business Administration.

4 6200:601 is a prerequisite for 6400:602.

**ENGINEERING CERTIFICATE PROGRAMS**

The College of Engineering offers graduate certificate programs in addition to master’s and doctoral degree programs. Certificates in Environmental Engineering, Geotechnical Engineering, Structural Engineering, Transportation Engineering, and Motion and Control Specialization are available. Descriptions of these and all graduate certificate programs can be found on page 87 of this bulletin under Interdisciplinary and Certificate Programs of Study.
College of Education

Susan G. Clark, Ph.D., J.D., Interim Dean
Susan J. Olson, Ph.D., Associate Dean for External Programs, Grants, Budgets, and Personnel

Mission Statement
The University of Akron’s College of Education is a community of professionals whose purpose is to provide leadership for community well-being through standard-setting programs that enhance teaching, learning, and human development; research and inquiry; and outreach. We develop ourselves and others through continuous improvement and through a commitment to these core components of professional practice and scholarship: knowledge, technology, diversity, and ethics.

Purpose
The aim of the College of Education is to meet the comprehensive charge of our mission through initial and advanced teacher education programs as well as programs in administration, counseling, technical education, higher education, sport and exercise science, athletic training for sports medicine, and several teacher education programs housed outside the College. Programs include a balanced offering of a foundation in general education, intensive study in the content area, and those professional courses and other learning experiences which attempt to combine theory and practice.

The education program and courses presented in the bulletin reflect the most current courses and program offerings. For further information about specific programs and requirements, contact the College of Education Office of Student Services Advisement Office (330) 972-7750.

Doctor of Philosophy Degree
Four Doctor of Philosophy degrees are offered through the College of Education. The Ph.D. in Elementary Education and the Ph.D. in Secondary Education are offered in the Department of Curricular and Instructional Studies. The Collaborative Ph.D. in Counseling Psychology, and the Ph.D. in Counselor Education and Supervision are offered in the Department of Counseling. The degrees will be awarded to the student who fulfills the general requirements of the Graduate School and passes the general and specific requirements of the Doctor of Philosophy degree program.

Doctorate in Education Degree
A Doctorate in Education degree is offered through the College of Education, Department of Educational Foundations and Leadership (admissions currently suspended). The Ed.D. degree is awarded to the student who fulfills the general requirements of the Graduate School and passes the general and specific requirements of the Doctorate in Educational Leadership degree program.

Doctoral Residency Requirements
The minimum residency requirement for a doctoral candidate in all programs is two consecutive semesters of full-time study and involvement in departmental activities. Full-time study is defined as 9 to 15 semester credits, except for graduate teaching and research assistants for whom full-time is specified by assistantship agreements. The summer sessions may count as one semester, provided that the candidate is enrolled for a minimum total of six semester credit hours per combined summer term.

Continuous Doctoral Program Enrollment
All students admitted to the doctoral program must register for a minimum of one semester hour of graduate credit as approved by their advisors during each fall and spring semester. Individual departments may exceed this minimum requirement. Doctoral students should consult their advisors about additional requirements.

Doctoral Programs in the Department of Curricular and Instructional Studies

Doctor of Philosophy in Elementary Education
(520000PHD)

Doctor of Philosophy in Secondary Education
(530000PHD)

The Doctor of Philosophy in Elementary Education and the Doctor of Philosophy in Secondary Education degrees offered by the Department of Curricular and Instructional Studies are designed to meet the needs and interests of persons in pre-K, elementary, middle, secondary, postsecondary, higher education, and other institutions or agencies that might have educational/learning programs. A qualified student can, through consultation with an advisor and within the expertise and resources of the department, design a specialization to meet his/her career objectives.

Program Description
The program is predicated on the belief that an effective instructor evolves from a well-planned program containing exposure in three basic areas:
1. Professional Education in Curricular and Instructional Studies
2. Foundation Studies
3. Area of Specialization

Listed below and of particular significance are the five sequential steps necessary for participation in the doctoral program:
1. Successful Completion of Admission Requirements (see below)
2. Completion of the Program Course Distribution Plan with Academic Advisor
3. Completion of the Program Coursework (see course requirements below)
4. Written and Oral Comprehensive Examinations

These Comprehensive Examinations should be taken after the completion of the first two-thirds of coursework and prior to the completion of three-fourths of the program with the approval of the student’s advisor. Written and oral comprehensive examinations are offered each semester.

5. Successful Completion of Dissertation
   a. Select dissertation chair and committee
   b. The dissertation proposal must receive approval of the dissertation committee.
   c. The candidate’s Dissertation Chair must be from the Department of Curricular and Instructional Studies and have Category II graduate faculty status.

Admission Requirements
Admission to the Curricular and Instructional Studies Ph.D. program is limited to a select number of students each year. Admission deadlines are March 1 for fall admission and October 1 for spring admission. More candidates apply for admission than the Department has the resources and capacity to admit. Therefore, applying for admission to the doctoral program is no guarantee of admission, and applicants to the program must recognize the possibility of denial.

Criteria for admission to the Curricular and Instructional Studies Ph.D. program are as follows:
1. Graduate and undergraduate degrees from accredited universities and in programs considered to offer adequate preparation for the Ph.D. in Curricular and Instructional Studies (Ph.D., Elementary Education; Ph.D., Secondary Education).
2. Acceptable grade point averages in a completed graduate degree (at least a 3.5 GPA on a scale of 4.0).
3. Completion of application to the Ph.D. program that includes:
   a. Application to Graduate School
   b. Official transcripts: undergraduate, master’s, certificate/licensure programs, and any previous doctoral study
   c. Letter of Intent/Statement of Purpose. The Letter of Intent/Statement of Purpose should indicate career goals and research interest and must be compatible with departmental resources and goals.
   d. Agreement to Advise Form. Candidates are responsible for obtaining faculty sponsors to complete Agreement to Advise Form.
   e. Current vita
   f. Three letters of academic reference
Admission Requirements—College of Education Ph.D.

- A Graduate School application and an official transcript of all undergraduate and graduate coursework from each college or university attended must be completed and returned to the Graduate School.
- A minimum combined score on the Graduate Record Examination (GRE) General Test (verbal and quantitative sections) of 1100 is recommended.
- A grade point average of 2.75 or above earned on all completed undergraduate work or a 3.0 or above on the most recent 64 semester hours of undergraduate work is required. A grade point average of 3.25 or above on all graduate work is required.
- Applicants are required to submit a vita outlining educational and professional experiences.
- Applicants are required to submit a declaration of intent outlining their occupational goals and their interest in and commitment to the counseling psychology field.
• Applicants must submit a minimum of three letters of reference attesting to success in the field and probable academic success at the doctoral level.

• Finalists are required to interview with program faculty, either in person or via telephone.

All application materials must be received by the department by December 1.

Departures from the program may be made only with the approval of the counseling psychology program faculty. Students may be considered for admission to counseling psychology only if they have earned a master’s degree in counseling, guidance and counseling psychology, school psychology, or a related field.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5100:648</td>
<td>Individual and Family Life-Span Development</td>
<td>3</td>
</tr>
<tr>
<td>5100:742</td>
<td>Statistics in Education</td>
<td>3</td>
</tr>
<tr>
<td>5100:743</td>
<td>Advanced Educational Statistics</td>
<td>3</td>
</tr>
<tr>
<td>5600:651</td>
<td>Techniques of Counseling</td>
<td>3</td>
</tr>
<tr>
<td>5600:678-676</td>
<td>Practicum in Counseling I</td>
<td>8</td>
</tr>
<tr>
<td>3750:610</td>
<td>Core I: Social Psychology</td>
<td>2</td>
</tr>
<tr>
<td>3750:620</td>
<td>Core II: Cognitive Psychology</td>
<td>2</td>
</tr>
<tr>
<td>3750:630</td>
<td>Core III: Individual Differences</td>
<td>2</td>
</tr>
<tr>
<td>3750:640</td>
<td>Core IV: Biopsychology</td>
<td>2</td>
</tr>
<tr>
<td>3750:650</td>
<td>Core V: Social-Cognitive Psychology</td>
<td>2</td>
</tr>
<tr>
<td>3750:750</td>
<td>Advanced Psychological Test and Measures</td>
<td>2</td>
</tr>
<tr>
<td>5600:702</td>
<td>Advanced Counseling Practicum I</td>
<td>4</td>
</tr>
<tr>
<td>5600:706</td>
<td>Advanced Counseling Practicum II</td>
<td>4</td>
</tr>
<tr>
<td>5600:707</td>
<td>Supervision in Counseling Psychology</td>
<td>4</td>
</tr>
<tr>
<td>5600:709</td>
<td>Introduction to Counseling Psychology</td>
<td>2</td>
</tr>
<tr>
<td>5600:710</td>
<td>Theories of Counseling and Psychotherapy</td>
<td>4</td>
</tr>
<tr>
<td>5600:711</td>
<td>Vocational Behavior</td>
<td>4</td>
</tr>
<tr>
<td>5600:712</td>
<td>Principles and Practice of Intelligence Testing</td>
<td>4</td>
</tr>
<tr>
<td>5600:713</td>
<td>Professional, Ethical and Legal Issues in Counseling Psychology</td>
<td>4</td>
</tr>
<tr>
<td>5600:714</td>
<td>Evaluation of Mental Status</td>
<td>3</td>
</tr>
<tr>
<td>5600:715</td>
<td>Research Design in Counseling I</td>
<td>3</td>
</tr>
<tr>
<td>5600:717</td>
<td>Issues of Diversity in Counseling Psychology</td>
<td>4</td>
</tr>
<tr>
<td>5600:718</td>
<td>History and Systems in Psychology</td>
<td>2</td>
</tr>
<tr>
<td>5600:796</td>
<td>Counseling Psychology Practicum I</td>
<td>4</td>
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<tr>
<td>5600:798</td>
<td>Counseling Psychology Practicum II</td>
<td>4</td>
</tr>
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<td>3750/5600:xxx</td>
<td>Required Electives</td>
<td>8</td>
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<tr>
<td>5600:899</td>
<td>Doctoral Dissertation (minimum)</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Language Requirement</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Minimum Total Credit Hours Required</td>
<td>114</td>
</tr>
</tbody>
</table>

Students register for dual listed courses (3750/5600) under their home department code.

The comprehensive written examination is prepared, administered, and graded by program faculty.

At least one core Counseling Psychology faculty member from each department is required to participate on the student’s dissertation committee.

Internship sites must be approved by the Collaborative Program Internship Committee. Internships must include 2,000 post-master’s hours and be completed in less than two years.

**Ph.D. in Counselor Education and Supervision (560000PHD: Counselor Education and Supervision)**

**Ph.D. in Marriage and Family Counseling/Therapy (560009PHD: Marriage and Family Counseling/Therapy)**

The doctoral degree in Counselor Education and Supervision is designed as advanced training for students who hold a master’s degree in counseling or a related field. The degree has two tracks, each with a different emphasis: (1) Counselor Education and Supervision and (2) Marriage and Family Counseling/Therapy. Students in both tracks are expected to attain Advanced Practica, Internships, comprehensivexaminations, and dissertation work. The minimum credit hour requirement for the Ph.D. in Counselor Education and Supervision is 100 to 120 depending on the track (Minimum of 100 credit hours for Counselor Education and Supervision and a minimum of 120 credit hours for Marriage and Family Counseling/Therapy).

The Counselor Education and Supervision track is accredited by the Commission for Accreditation of Counseling and Related Education Programs (CACREP), and the Marriage and Family Counseling/Therapy track is accredited by the Commission on Accreditation of Marriage and Family Therapy Education (COAMFTE).

**Admission Requirements**

- Graduate School Application
- Official undergraduate and graduate transcripts
- Official Graduate Record Examination (GRE) score report
- Three letters of recommendation
- Department of Counseling Application Supplement Form
- Professional resume/vita

All application materials are due in the Department of Counseling no later than January 15. Doctoral students are only admitted one time per year, beginning each fall semester.

**Counselor Education and Supervision Track (100 credits):**

- **Research and Statistics (15 credits):**
  - 5100:742 Statistics in Education 3
  - 5100:743 Advanced Educational Statistics 3
  - 5600:744 Qualitative Methods I 3
  - 5600:715 Research Design in Counseling I 3
  - 5600:726 Doctoral Research Proposal in Counselor Education 3

- **Counselor Education Core Courses (43 credits):**
  - 5600:702 Advanced Counseling Practicum 4
  - 5600:702 Advanced Counseling Practicum 4
  - 5600:737 Clinical Supervision I 4
  - 5600:738 Clinical Supervision II 4
  - 5600:710 Theories of Counseling and Psychotherapy 4
  - 5600:725 Doctoral Professional Seminar in Counselor Education 3
  - 5600:785 Doctoral Internship 3
  - 5600:785 Doctoral Internship 3
  - 5600:724 Legal and Ethical Issues in Counselor Education 4
  - 5600:730 Use of Assessment Data 4
  - 5600:724 Pedagogy in Counselor Education and Supervision 3
  - 5600:728 Advanced Diversity in Counselor Education 3

- **Dissertation (12 credits):**
  - 5600:899 Doctoral Dissertation 1-20

- **Master’s Degree Requirements (30 credits minimum):**
  - 5600:600 Seminar in Counseling 1
  - 5600:643 Counseling: Theory and Philosophy 3
  - 5600:647 Career Development and Counseling Across the Lifespan 3
  - 5600:651 Technics of Counseling 3
  - 5600:653 Group Counseling 4
  - 5600:664 Multicultural Counseling 3
  - 5600:660 Counseling Children 3
  - 5600:668 Individual and Family Development Across the Lifespan 3
  - 5600:645 Tests and Appraisals in Counseling 3
  - 5600:601 Research and Program Evaluation in Counseling 3
  - 5600:664 DSM 3
  - 5600:675 Practicum in Counseling I 5
  - 5600:685 Internship 3

- **Coursework in all of the master’s degree requirement areas must be completed before registering for doctoral-level coursework. Fulfillment of master’s degree requirements may total more than the minimum 30 credits included in the doctoral degree.**

**Marriage and Family Counseling/Therapy Track (120 credits):**

- **Course Requirements (18 credits):**
  - 5100:705 Social-Philosophical Foundations 3
  - 5100:635 Emerging Technologies for Instruction 3
  - 5100:742 Statistics in Education 3
  - 5100:743 Advanced Educational Statistics 3
  - 5600:715 Research Design in Counseling I 3
  - 5600:716 Research Design in Counseling II 3

- **(The following may not be taken until all entry-level requirements are completed):**
  - 5600:702 Advanced Counseling Practicum (3 semesters; 4 credits each semester) 12
  - 5600:710 Theories of Counseling and Psychotherapy 4
  - 5600:669 System Theory in Family Therapy 3
  - 5600:725 Doctoral Professional Seminar in Counselor Education 3
  - 5600:730 Topical Seminar: Use of Assessment Data 4
  - 5600:737 Clinical Supervision I 4
  - 5600:738 Clinical Supervision II 4
  - XXXX Cognates 6-10
  - 5600:785 Doctoral Internship (minimum of 3 credits taken outside of the College ) 6
  - 5600:785 Internship Marriage and Family (minimum of 2 semesters/600 clock hours) 6
  - 5600:899 Doctoral Dissertation (minimum) 15

- **Students enrolled in the Marriage and Family Doctoral Track must complete the following requirements:**
  - 5600:720 Topical Seminar: Topical Issues in Marriage and Family Therapy 3
  - 5600:667 Marital Therapy 3
  - 5600:664 DSM-IV 3

- **Minimum Total Credit Hours Required 120**

- **Master’s Degree Coursework: Students must have completed entry-level course work in all the following areas before beginning doctoral program course work:**
  - 5600:643 Counseling Theory (Individual) 3
  - 5600:655 Marriage and Family Theory and Techniques 3
  - 5600:645 Assessment 4
  - 5600:647 Career Counseling 3
  - 5600:651 Techniques of Counseling 3
  - 5600:653 Group Counseling 4
  - 5100:640 Techniques of Research 3
  - 5600:648 Multicultural Counseling 3
  - 5600:648 Individual and Family Development 3
  - 5600:664 DSM-V 3
Foundation coursework in Community, School, or Marriage and Family Counseling

5600:675 Counseling Practicum (Community, School, or MFT)  5
5600:685 Counseling Internship (Community, School, or MFT)  3
5600:660 Counseling Children (Counselor Education Program only)  3

Marriage and Family Program only - Students must have completed standard curriculum approved by AAMFT

A minimum of 60 semester hours of the total 120 hours must be taken after the student is admitted into the doctoral program in Counselor Education and Supervision. For further program details and specific admission requirements, contact the Department of Counseling at (330) 972-7777 or 7779.

Doctorate in Educational Leadership

(57000EDD)

(Admissions to this program are currently suspended)

The Department of Educational Foundations and Leadership bears a special responsibility for preparing P-16 leaders to the degree that its graduates have unique opportunities to shape organizational goals, to influence the character of educational programs, and to affect institutional performance. The department’s programs are based on the strengths of the total College and University. Professional knowledge and skills of administration are developed as they relate to larger issues of P-16 educational policy and purpose.

Admission Requirements

- Application to Graduate School
- Letter of application to include the nature of the applicant’s interest in the program and future career goals
- Graduate Record Examination (GRE): Total preferred score over 1000 (must have been taken within the past five years)
- Official transcripts: undergraduate, masters, certificate/licensure programs, and any previous doctoral study
- 3.25 GPA - masters
- Current curriculum vitae/resume
- Three letters of reference addressing the applicant’s organizational, research, and communication skills

Application materials must be submitted by March 1 for fall admission and October 15 for spring admission.

Applicants who make the first cut, based on review of the application package above, will be invited to campus to provide the following:

- Structured interview
- Proctored writing sample

Program Requirements

Behavioral, Historical, and Social-Philosophical Studies (12)
5100:701 History of Education in American Society 3
5100:703 History and Philosophy of Higher Education 3
5100:705 Social-Philosophical Foundations of Education 3
5100:710 Adult Learning, Development and Motivation 3
5100:721 Learning Processes 3

Research (22)
5170:899 Doctoral Dissertation (student must take at least 10 semester dissertation hours but may count up to 20 toward the degree)

Students will select any combination of the following research courses for a minimum of 12 semester hours depending upon their research interests and career goals.
5100:740 Research Design 3
5100:741 Data Collection Methods 3
5100:742 Statistics in Education 3
5100:743 Advanced Educational Statistics 3
5100:801 Research Seminar: Exploratory/Qualitative 3
5100:801 Research Seminar: Ethnographic/Historical 3
5100:801 Research Seminar: Case Study Research 3
5100:801 Research Seminar: Legal Research and Writing 3
5100:801 Research Seminar: Empirical Studies 3

Educational Administration (35)
5170:704 Advanced Study in Educational Leadership 3
5170:705 Decision Making in Educational Leadership 3
5170:709 Economics in Education 3
5170:716 Advanced Evaluation of Educational Organizations 3
5170:730 Residency Seminar 3
5170:732 Public and Media Relations in Educational Organizations 3
5170:745 Seminar: Urban Educational Issues 3
5170:746 Politics of Education 3
5170:710 Advanced Educational Law 3
5170:720 Topical Seminar (two enrollments of three credits each) 6
5170:795 Doctoral Internship 5

Cognate (12)
(Must be graduate level coursework outside the field of education. Advisor approval required.)

General Electives (9)

Total Program: 90

MASTER’S DEGREES

Programs leading to the degree of M.A. in Education or M.S. in Education.

The student who expects to earn the master’s degree must meet the general requirements for admission to the Graduate School and must be qualified to hold a standard teaching license for certain programs. Exceptions to this latter requirement will be made for the qualified student who does not wish to teach or perform duties in the public schools provided the student presents or acquires an appropriate background of study or experience. The student who expects to earn the master’s degree in guidance and administration also should have had successful teaching experience. Students must demonstrate those verbal/written expression abilities necessary for successful progression through the program unless student is eligible for accommodations. The student must receive a pass grade on the relevant Master’s Comprehensive Exam if required.

No more than six credits of workshops or institutes can be used to satisfy degree requirements.

The student must complete a minimum of nine credits in foundation studies in education.*

5100:600 Philosophies of Education 3
5100:602 Comparative and International Education 3
5100:604 Topical Seminar in the Cultural Foundations of Education 3
5100:620 Psychology of Instruction for Teaching and Learning 3
5100:624 Seminar: Educational Psychology 3
5100:640 Techniques of Research 3

*Students in some counseling programs may choose other options – see advisor.

Counseling

Admissions to the master’s programs in Classroom Guidance for Teachers, Marriage and Family Counseling/Therapy, and School Counseling will be twice a year (application deadline of March 15 for summer and fall semesters and October 1 for spring semester).

Applications to the master’s program in Clinical Mental Health Counseling are accepted on a rolling basis. Applicants are strongly urged to apply as early as possible. For applicants who have complete application materials on file and who are selected for an interview, admission interviews usually begin in January for fall admission cohort and September for spring admission cohort. New admits will not be accepted once the program reaches cohort capacity.

The Council for Accreditation of Counseling and Related Educational Programs (CACREP), a specialized accrediting body recognized by the Council of Higher Education Accreditation (CHEA), has conferred accreditation on the Clinical Mental Health, Marriage and Family, and School Counseling programs. In addition, the Marriage and Family Counseling/Therapy program is accredited by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE).

Admission Requirements

- Graduate School Application
- Official transcripts from institutions attended
- Three letters of recommendation
- Department of Counseling Application Supplement Form
- Interview will be required for applicants who meet admission criteria

Classroom Guidance for Teachers

(560008MA) (560008MS)

This course of study leads to an expanded knowledge of how guidance and counseling services benefit students and others in public school settings. Note that numerous areas of concentration are available to students. This is not a licensure program. Any changes in the agreed-upon program must be approved by the student’s advisor.

- Foundations Courses (Select one course from each area)
  - Behavioral Foundations
    5100:620 Psychology of Instruction for Teaching and Learning 3
  - Career Education
    5100:624 Seminar: Educational Psychology 3
  - 5600/5100:648 Individual and Family Development Across the Lifespan 3
Students must receive a Pass grade on the Master's Comprehensive Examination.

– Humanistic Foundations
5100:600 Philosophies of Education 3
5100:604 Topical Seminar in the Cultural Foundations of Education 3
or
5600/5100:646 Multicultural Counseling 3

– Research
5100:640 Techniques of Research 3
Minimum Foundation Credit Hours Required 9

• Required Program Courses
5600:631 Elementary/Secondary School Counseling 3
5600:647 Career Development and Counseling Across the Lifespan 3
5600:645 Tests and Appraisal in Counseling 3
5600:610 Counseling Skills for Teachers 3
5600:683 Developmental Guidance and Emotional Education 3
5600:695 Field Experience (MUST be taken before or concurrently with 663) 1
5610:540 Developmental Characteristics of Exceptional Individuals 3
or
5610:604 Collaboration and Consultation Skills for Special Educators 3
Minimum Credit Hours Required for Program Courses 19

• Area of Concentration
An area of concentration with a minimum of six credit hours may be selected from one of the following areas (the student may, with advisor approval, propose an area of concentration not listed):

Middle School Education
Early Childhood Education
School and Community Relations
Curriculum and Instruction
Physical Fitness and Well-Being
Special Education
Computers in Education
Family Ecology
Communicative Disorders
Outdoor Education

Total Area of Concentration Hours Required for Program 6
Minimum Semester Hours Required for Degree 35

Clinical Mental Health Counseling
(560005MA) (560005MS)
This course of study focuses on knowledge and skills related to clinical mental health counseling culminating in the opportunity to obtain professional counselor licensure and employment in the mental health field, such as mental health agencies, private practice, and college counseling centers.

• Educational Foundations (9 credits)
5600:601 Research and Program Evaluation in Counseling 3
5600:646 Multicultural Counseling 3
5600:648 Individual and Family Development Across the Lifespan 3

• Required Core Courses (20 credits)
5600:600 Professional Orientation and Ethics 2
5600:636 Introduction to Clinical Counseling 2
5600:643 Counseling Theory & Philosophy 3
5600:645 Tests and Appraisal in Counseling 3
5600:646 Career Development and Counseling Across the Lifespan 3
5600:651 Techniques of Counseling 3
5600:653 Group Counseling 4

• Program Electives (3 credits) (choose at least one course from the following list)
5600:620 Issues in Sexuality for Counselors 3
5600:621 Counseling Youth at Risk 3
5600:622 Introduction to Play Therapy 3
9600:640 Counseling Adolescents 3
5600:655 Marriage and Family Therapy: Theory and Techniques 3
5600:660 Counseling Children 3

• Clinical Counseling Specialty Courses (28 credits)
5600:662 Personality and Abnormal Behavior 3
5600:664 DSM 3
5600:666 Treatment in Clinical Counseling 3
5600:674 Prepracticum in Counseling 2
5600:675 Practicum in Counseling I 5
5600:714 Evaluation of Mental Status 3
5600:732 Addiction Counseling I: Theory & Assessment 3
5600:685 Master's Internship 3
5600:686 Master's Internship 3
Minimum Semester Hours Required for Degree 60

Students must receive a Pass grade on the Master’s Comprehensive Examination.

School Counseling
(560103MA) (560103MS)
This course of study leads to eventual licensure as a school counselor in the State of Ohio. Any changes in the agreed upon program must be approved by the student’s advisor.

Admission Requirements
For those with a teaching license and two years teaching experience:
• Application to Graduate School
• 2.75 undergraduate GPA
• Statement of good moral character
• Three letters of reference
• Departmental supplemental application
For those without a teaching license:
• Application to Graduate School
• 2.75 undergraduate GPA
• Statement of Good Moral Character
• Bureau of Criminal Investigation (BCI) check and FBI check
• Three letters of reference
• Departmental supplemental application

There are ten credit hours of corequisite coursework for students without a teaching license and two years teaching experience:
5600:663 Developmental Guidance and Emotional Education 3
5600:695 Field Experience: Master’s 1
One of the following: 5600:660, 5600:640, or 5600:622 (3 credit hours)
One of the following: 5610:567 or 5610:599 (3 credit hours)

• Foundations (select one course from each area)
– Behavioral Foundations
5600:648 Individual and Family Development Across the Life Span 3
– Humanistic Foundations
5600:646 Multicultural Counseling 3
– Research
5600:640 Techniques of Research 3
Minimum Foundation Hours Required 9

• Required Counseling Department Courses
– Professional Orientation (select one course from each area)
5600:600 Professional Orientation and Ethics* 2
5600:631 Elementary/Secondary School Counseling 3
5600:659 Organization & Administration of Guidance Services 3
Subtotal 7
– Counseling Theory
5600:643 Counseling Theory & Philosophy 3
5600:647 Career Development and Counseling Across the Lifespan 3
Subtotal 6
– Appraisal
5600:645 Tests and Appraisal in Counseling (prerequisite: 5600:601) 4
Subtotal 4
– Counseling Process (all required)
5600:651 Techniques of Counseling* 3
5600:653 Group Counseling (prerequisites: 5600:651 and 5600:643) 4
5600:675 Practicum in Counseling†‡ (prerequisites: 5600:631, 645, 646, 647, 653, 659) 5
Subtotal 12
– Internship
5600:685 Internship in Counseling†‡ (prerequisite: 5600:675) 6
Minimum Department Hours Required 35

• Specialized Studies (both required)
5610:540 Developmental Characteristics of Exceptional Individuals 3
5600:621 Counseling Youth At Risk 3
Subtotal 6
Total Semester Hours Required for Graduation 50

*Must be taken during first or second semester.
**Must sign up with the department during first semester of enrollment.
†Independent Study, Field Experience, Practicum, and Internship require closed class permission. You must get one from the Department office prior to registering.
Marriage and Family Counseling/Therapy
(560009MA) (560009MS)

This course of study leads to licensure as a marriage and family counselor/therapist and to employment in family-based mental health settings. Any changes in the agreed upon program must be approved by the student’s advisor.

• Area I: Theoretical Foundations
  5600:655 Marriage and Family Therapy: Theories and Techniques 3
  5600:669 Systems Theory in Family Therapy 3

• Area II: Clinical Practice
  5600:687 Marital Therapy (prerequisites: 5600:655 and 5600:669) 3
  5600:686 Multicultural Counseling (Educ Foundations) 3
  5600:688 Techniques of Counseling (register for MFC/T section) 3
  (prerequisite: 5600:655; corequisite: 5600:669; prerequisite or corequisite: 5600:643)
  5600:653 Group Counseling (prerequisite: 5600:651) 4
  5600:664 DSM-IV 3

• Area III: Individual Development and Family Relations
  5600:648 Individual and Family Development Across the Lifespan (Ed Found) 3
  5600:620 Issues in Sexuality for Counselors 3
  5600:662 Personality and Abnormal Behavior 3

• Area IV: Professional Identity and Ethics
  5600:623 MFC/T Ethics and Professional identity (take first semester) 3

• Area V: Research
  5100:660 Techniques of Research (Educ Foundations) 3
  5600:655 Assessment Methods and Treatment Issues in MFT (prereq: 5600:645) 3

• Area VI: Additional CACREP Core Counseling Courses
  5600:643 Counseling Theory and Philosophy 3
  5600:645 Tests and Appraisals in Counseling 4
  5600:647 Career Development and Counseling Across the Lifespan 3

• Clinical Experience Requirements
  5600:665 Field Experience 2
  (Pre-practicum one hour taken each semester, the two semesters immediately before Practicum 5600:675)
  5600:675 Practicum in Counseling* (register for MFC/T section) 5
  (Prerequisites: 5600:623, 643, 645, 651, 653, 655, 656, 664, 667, 669, 695)
  5600:685 Internship 6
  (Minimum of two semesters immediately following 5600:675, register for MFC/T section)

Minimum Hours for Marriage and Family Therapy Degree Completion 63**

*Sign up for Practicum at least one year in advance - space is limited. Sign up with department.

**A minimum of 500 client contact hours must be completed to graduate from the program.

Students must receive a pass grade on the Master’s Comprehensive Examination in order to graduate.

A maximum of six credits of workshop can be used to satisfy degree requirements.

School Psychologist*
(Admissions to this program currently suspended)

• College requirements:
  5100:640 Techniques of Research 3
  5620:694 Research Project 2
  5620:698 Master’s Problem 2-4
  5620:699 Master’s Thesis 4-6

• Departmental requirements:
  5600:643 Counseling: Theory and Philosophy 3

• Program requirements:
  3750:530 Psychological Disorders of Childhood 4
  3750:700 Survey of Projective Techniques 4
  3750:712 Principles and Practice of Individual Intelligence Testing 4
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:624 Seminar in Human Learning 3
  5100:741 Statistics in Education 3
  5620:600 Seminar: Role and Function of School Psychology 3
  5620:602 Behavioral Assessment 3
  5620:610 Educational Diagnosis for the School Psychologist 4

Sixth-Year School Psychology Master’s Degree and Certification Program

• Foundations requirements:
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:624 Seminar: Educational Psychology 3
  5600:640 Techniques of Research 3
  5100:741 Statistics in Education 3

• Professional requirements:
  3750:700 Survey of Projective Techniques 4
  3750:530 Psychological Disorders of Childhood 4
  3750:712 Principles and Practice of Individual Intelligence Testing 4
  5600:643 Counseling: Theory and Philosophy 3

  5620:600 Seminar: Role and Function of School Psychology 3
  5620:602 Behavioral Assessment 3
  5620:610 Educational Diagnosis for the School Psychologist 4
  5620:694 Research Project in Special Area 2-3
  or
  5620:698 Master’s Problem 2-4
  or
  5620:699 Master’s Thesis 4-6

The student completing the master’s program who desires Ohio certification must additionally complete the following listed certification/professional course requirements including the full academic year internship experience:

  Minimum Hours for Marriage and Family Therapy Degree Completion 63**
  *Sign up for Practicum at least one year in advance - space is limited. Sign up with department.

**A minimum of 500 client contact hours must be completed to graduate from the program.

Students must receive a pass grade on the Master’s Comprehensive Examination in order to graduate.

A maximum of six credits of workshop can be used to satisfy degree requirements.

Curricular and Instructional Studies

Elementary Education (M.A.)
(520000MA)

This program leading to a Master of Arts in Elementary Education is designed for elementary school teachers. Students complete foundation courses in education and in curriculum and instruction and courses for an area of concentration.

Admission Requirements:
Applications to the master’s program in Elementary Education must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time. Contact the College of Education Office of Student Services at (330) 972-7750.

Degree Requirements:

• Educational Foundations – 9 credits
  5100:600 Philosophies of Education 3
  5100:624 Seminar in Educational Psychology 3
  5100:640 Techniques of Research 3

• Curricular and Instructional – 6 credits
  5500:600 Concepts of Curriculum and Instruction 3
  5500:605 Seminar in Trends and Issues in Curriculum and Instruction 3
  5500:6xx a course that cuts across curriculum and instruction (as approved by advisor)

• Area of Concentration – 15 credits

The area of concentration may contain advisor approved courses in mathematics, English, foreign language, visual arts, or secondary education provided that the coursework offers a cohesive concentration and contributes to the preparation of an educator at the advanced/master’s-level within curriculum and instruction.

• Master’s Project/Thesis Options - 6 credits
  Option 1: 5500:690 Master’s Research 3
  5500:760 Action Research 3
Elementary Education with Literacy Option (M.A.) (520101MA)

This program leading to a Master of Arts in Elementary Education is designed for elementary school teachers. Students complete foundation courses in education and in curriculum and instruction and courses for an area of concentration in literacy education.

Admission Requirements

Applications to the master’s program in Elementary Education with Literacy Option must be submitted and admitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time. Contact the College of Education Office of Student Services at (330) 972-7750.

Degree Requirements

• Educational Foundations – 9 credits:
  5100:600 Philosophies of Education 3
  5100:624 Seminar: Educational Psychology 3
  5100:640 Techniques of Research 3

• Curricular and Instructional Studies – 6 credits:
  5500:600 Concepts of Curriculum and Instruction 3
  5500:625 Contemporary Issues in Literacy Instruction and Phonics 3

• Area of Concentration/Reading – 15 credits*:
  5500:622 Children’s Literature in the Curriculum 3
  5500:627 Special Topics in Curric & Insr Studies: Teaching Young Adult Literature 3
  5500:628 Content Area Literacy 3
  5500:629 Assessment of Reading Difficulties 3
  5500:634 Teaching Reading to Culturally Diverse Learners 3
  5500:627 Special Topics in Curricular and Instructional Studies 3

• Master’s Project/Thesis Options - 6 credits

Option 1:
  5500:690 Master’s Research 3
  5500:760 Action Research 3

Option 2:
  5500:696 Master’s Project (with advisor’s permission) 6

Option 3:
  5500:699 Master’s Thesis (with advisor’s permission) 6

• Minimum credit hours for degree: 36

Secondary Education with Literacy Option (M.A.) (530000MA)

This program leading to a Master of Arts in Secondary Education is designed for secondary school teachers. Students complete foundation courses in education and in curriculum and instruction and courses for an area of concentration in mathematics or English.

Admission Requirements

Applications to the master’s program in Secondary Education must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time. Contact the College of Education Office of Student Services at (330) 972-7750.

Degree Requirements

• Educational Foundations – 9 credits:
  5100:600 Philosophies of Education 3
  5100:624 Seminar: Educational Psychology 3
  5100:640 Techniques of Research 3

• Curricular and Instructional Studies – 6 credits:
  5500:600 Concepts of Curriculum and Instruction 3
  5500:625 Contemporary Issues in Literacy Instruction and Phonics 3

• Area of Concentration – 15 credits

The area of concentration can contain advisor approved courses in mathematics, English, foreign language, visual arts, or secondary education provided that the coursework offers a cohesive concentration and contributes to the preparation of an educator at the advanced/master’s-level within curriculum and instruction.

• Master’s Project/Thesis Options - 6 credits

Option 1:
  5500:690 Master’s Research 3
  5500:760 Action Research 3

Option 2:
  5500:696 Master’s Project (with advisor’s permission) 6

Option 3:
  5500:699 Master’s Thesis (with advisor’s permission) 6

• Minimum credit hours required for degree: 36

Elementary Education with Licensure (M.S.) (520207MS)

(Admissions to this program are currently suspended)

This program is open to highly qualified students who hold the B.A. or B.S. degree in certain fields (see program advisor or department chair). All requirements for certification must be met including the field and clinical/diagnostic experience.

• Educational Foundations – 10 credits:
  5100:600 Philosophies of Education 3
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 Psychology of Instruction for Teaching and Learning 3
  5100:642 Topical Seminar in Measurement and Evaluation 3
  5100:695 Field Experience: Master’s (Section 001) 1

• Curricular and Instructional Studies – 11 credits:
  5500:617 Licensure Seminar in Curricular and Instructional Studies 3
  5500:630 Field Experience (Section 011) 1
  5500:575 Instructional Technology Applications 3
  5500:618 Advanced Instructional Techniques 3
  5500:695 Field Experience (Section 021) 1

• Field Experience (Student Teaching) – 11 credits:
  5500:695 Field Experience: Master’s (Section 005) 5
  5500:696 Field Experience: Master’s (Section 005) 5
  5500:695 Field Experience: Master’s (Section 031) 1

Total Program: 32 credits

• A minimum of 29 additional undergraduate credits will be required for licensure. A comprehensive exam is required. See Department of Curricular and Instructional Studies for complete list of requirements.

Secondary Education with Literacy Option (M.A.) (530001MA)

This program leading to a Master of Arts in Secondary Education is designed for secondary school teachers. Students complete foundation courses in education and in curriculum and instruction and courses for an area of concentration such as English, mathematics, or secondary education.

Admission Requirements

Applications to the master’s program in Secondary Education must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time. Contact the College of Education Office of Student Services at (330) 972-7750.

Degree Requirements

• Educational Foundations – 9 credits:
  5100:600 Philosophies of Education 3
  5100:624 Seminar: Educational Psychology 3
  5100:640 Techniques of Research 3

• Curricular and Instructional Studies – 6 credits:
  5500:600 Concepts of Curriculum and Instruction 3
  5500:625 Contemporary Issues in Literacy Instruction and Phonics 3

• Area of Concentration – 15 credits

The area of concentration can contain advisor approved courses in mathematics, English, foreign language, visual arts, or secondary education provided that the coursework offers a cohesive concentration and contributes to the preparation of an educator at the advanced/master’s-level within curriculum and instruction.

• Master’s Project/Thesis Options - 6 credits

Option 1:
  5500:690 Master’s Research 3
  5500:760 Action Research 3

Option 2:
  5500:696 Master’s Project (with advisor’s permission) 6

Option 3:
  5500:699 Master’s Thesis (with advisor’s permission) 6

• Minimum credit hours required for degree: 36
The University of Akron offers adolescent/young adult licensure (grades 7-12) in family and consumer science (grades 4-12), or intervention specialist (grades P-3 B.S. degree. It is designed to give the student concentrated study in one of the licensure fields and is open to highly qualified students who hold a B.A., B.F.A., or B.S. degree. For those without a teaching credential or those who seek to add Intervention Specialist licensure, a valid teaching license, completion of 18 credit hours in reading and a passing score on Praxis II: Introduction to the Teaching of Reading (0234) are required.

Special Education (M.A.)
(561000MAED)
The 30-33 hour graduate program in special education is designed for those individuals who currently hold an undergraduate degree and Intervention Specialist licensure. The program is divided into three options. The first option (Option I) is for individuals seeking only a Masters in Special Education. The second option (Option II) contains coursework providing focus on Pervasive Developmental Disabilities/Autism. The third option (Option III) provides specific coursework designed to focus on providing behavioral support in the school setting. Completion of the Master’s of Arts program does not lead to licensure in special education.

Admission Requirements
Applications to the master’s program in Special Education must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time.

Degree Requirements
• Educational Foundations core (9 credits):
  5100:600 Philosophies of Education 3
  5100:624 Seminar in Educational Psychology 3
  5100:640 Techniques of Research 3
• Curricular and Instructional Studies/Special Education core: (15 credits)
  5610:604 Collaboration and Consultation Skills for Special Educators 3
  5610:605 Inclusion Models and Strategies 3
  5610:611 Seminar: Legal Issues in Special Education 3
  5610:612 Seminar: Social/Ethical Issues in Special Education 3
  5610:698 Master’s Problem 3
• Option I: Master’s in Special Education (6 credits)
  5610:601 Seminar in Curriculum Planning 3
  5610:602 Supervision in Special Education 3
  Minimum Credit Hours Required 30
• Option II: Master’s with focus on Pervasive Developmental Disabilities/Autism (9 credits):
  5610:607 Characteristics and Needs of Individuals Demonstrating PDD 3
  5610:609 Programming Issue for Individuals with PDD 3
  7700:540 Augmentative Communication 3
  Minimum Credit Hours Required 33
• Option III: Master’s with focus on Behavior Support (6 credits):
  5610:610 Characteristics and Needs of Individuals with Behavioral and Emotional Disorders 3
  5500:631 Advanced Behavioral Strategies for the Educator 3
  Minimum credit hours required for degree 30

Master of Science in Curriculum and Instruction (M.S.) with Licensure Options
(For those without a teaching credential or those who seek to add Intervention Specialist)
This program is a Master of Science degree, which leads to licensure in a chosen teaching field and is open to highly qualified students who hold a B.A., B.F.A., or B.S. degree. It is designed to give the student concentrated study in one of the licensure areas listed for high school (grades 7-12), multi-age (grades P-12), vocational family and consumer science (grades 4-12), or intervention specialist (grades P-3 or K-12).

The University of Akron offers adolescent/young adult licensure (grades 7-12) in the following fields:
  • Integrated Social Studies
  • Integrated Language Arts
  • Life Science
  • Earth Science
  • Life and Earth Science
  • Life Science and Chemistry
• Life Science and Physics
• Chemistry
• Physics
• Chemistry and Physics
• Earth Science
• Earth Science and Chemistry
• Earth Science and Physics
• Integrated Mathematics

Specializations for Multi-Age (P-12) licensure include:
• Foreign Languages (French or Spanish)
• Visual Arts
• Drama/Theatre
• Physical Education

Specializations for Vocational (grades 4-12) licensure include:
• Family and Consumer Science/Home Economics (admissions suspended)

Intervention Specialist (Mild/Moderate and Moderate/Intensive) licensure is K-12. The Early Childhood Intervention Specialist provides licensure for children with disabilities in preschool through grade three.

All requirements for licensure must be met. Candidates may need additional subject area coursework to meet ODE licensure requirements, including mandated coursework in reading.

Admission Requirements
Graduate School:
• Completed application for Graduate School
• Students must have an overall 2.75 grade point average to be fully admitted
• Provisional admission may be granted to those students who have a 2.5 to 2.74 grade point average

College of Education Teacher Education Program:
• Completed teacher education program application
• Competency in reading comprehension, writing, and mathematics as evidenced by an earned bachelor’s degree from an accredited college or university
• Speech and hearing test
• Evidence of basic computer literacy
• Two letters of recommendation
• BCI (Bureau of Criminal Investigation) and FBI clearance

Applications should be made simultaneously. See the Office of Student Services, Zook Hall 207, call (330) 972-7750 or visit the following for more information: http://www.uakron.edu/education/academic-programs/CIS/how-to-apply.dot

Applications are accepted on a rolling basis.

Teacher Education Program
The central theme of The University of Akron’s Teacher Education Program is “Educator as Decision Maker.” This was chosen because the complexity of teaching is increasing and the professional knowledge base is growing. Decision-making is stressed in the standards-based programs that prepare teachers and other school personnel for professional practice. Initial teacher preparation programs are aligned with the Ohio Standards for the Teaching Profession, Specialized Professional Association Standards. Advanced Programs for practicing teachers are aligned with the Ohio Standards for the Teaching Profession. Specific key assessments embedded in coursework must be completed to demonstrate that students meet these standards. For more complete information about the teacher education program please consult the College of Education Office of Student Services at (330) 972-7750.

Program
• Educational Foundations Courses (10 credits):
  All are required unless waived at the time of admission. Foundation courses may not be used as option or elective courses.
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 Psychology of Instruction for Teaching and Learning 3
  5100:642 Introduction to Classroom Assessment for Teacher 3
  5100:695 Field Experience: Master's (taken in conjunction with 5100:620) 1

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Integrated Social Studies Licensure
(530700MSED)

• Educational Foundations Courses (10 credits):
• Curricular and Instructional Studies (20 credits):
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:521) (b) 3
5500:521 Field Experience: Advanced Instructional Techniques 2
5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
5500:693 Field Experience: Master’s with Licensure (section 011) 1
5500:629 Reading Programs in Secondary Schools 3
5500:xxx Elective in curriculum or teaching practices approved by advisor 2

• Area of Concentration (9):
  Select 9 credits at 500-level or above.

• Field Experience (Student Teaching) (9 credits):
  5500:694 Field Experience: Classroom Instruction (c) 8
  5500:692 Field Experience: Colloquium 1

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Integrated Language Arts License (530701MSED)

• Educational Foundations Courses (10 credits)
• Curricular and Instructional Studies (20 credits):
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:521) (b) 3
  5500:521 Field Experience: Advanced Instructional Techniques 2
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  5500:693 Field Experience: Master’s with Licensure (section 011) 1
  5500:629 Reading Programs in Secondary Schools 3
  5500:xxx Elective in curriculum or teaching practices approved by advisor 2

• Area of Concentration (9):
  Select 9 credits at 500-level or above.

• Field Experience (Student Teaching) (9 credits):
  5500:694 Field Experience: Classroom Instruction (c) 8
  5500:692 Field Experience: Colloquium 1

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Integrated Mathematics License (530702MSED)

• Educational Foundations Courses (10 credits)
• Curricular and Instructional Studies (20 credits):
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:521) (b) 3
  5500:521 Field Experience: Advanced Instructional Techniques 2
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  5500:693 Field Experience: Master’s with Licensure (section 011) 1
  5500:629 Reading Programs in Secondary Schools 3
  5500:xxx Elective in curriculum or teaching practices approved by advisor 2

• Area of Concentration (9):
  Select 9 credits at 500-level or above.

• Field Experience (Student Teaching) (9 credits):
  5500:694 Field Experience: Classroom Instruction (c) 8
  5500:692 Field Experience: Colloquium 1

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Life Science Licensure (530610MSED)

• Educational Foundations Courses (10 credits)
• Curricular and Instructional Studies (20 credits):
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:521) (b) 3
  5500:521 Field Experience: Advanced Instructional Techniques 2
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  5500:693 Field Experience: Master’s with Licensure (section 011) 1
  5500:629 Reading Programs in Secondary Schools 3
  5500:xxx Elective in curriculum or teaching practices approved by advisor 2

• Area of Concentration (9):
  Select 9 credits at 500-level or above.

• Field Experience (Student Teaching) (9 credits):
  5500:694 Field Experience: Classroom Instruction (c) 8
  5500:692 Field Experience: Colloquium 1

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Life Sciences and Chemistry Licensure (530505MSED)

• Educational Foundations Courses (10 credits)
• Curricular and Instructional Studies (20 credits):
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:521) (b) 3
  5500:521 Field Experience: Advanced Instructional Techniques 2
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  5500:693 Field Experience: Master’s with Licensure (section 011) 1
  5500:629 Reading Programs in Secondary Schools 3
  5500:xxx Elective in curriculum or teaching practices approved by advisor 2

• Area of Concentration (9):
  Select 9 credits at 500-level or above.

• Field Experience (Student Teaching) (9 credits):
  5500:694 Field Experience: Classroom Instruction (c) 8
  5500:692 Field Experience: Colloquium 1

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Life Sciences and Physics Licensure (530607MSED)

• Educational Foundations Courses (10 credits)
• Curricular and Instructional Studies (20 credits):
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:521) (b) 3
  5500:521 Field Experience: Advanced Instructional Techniques 2
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011) 3
  5500:693 Field Experience: Master’s with Licensure (section 011) 1
  5500:629 Reading Programs in Secondary Schools 3
  5500:xxx Elective in curriculum or teaching practices approved by advisor 2

• Area of Concentration (9):
  Select 9 credits at 500-level or above.

• Field Experience (Student Teaching) (9 credits):
  5500:694 Field Experience: Classroom Instruction (c) 8
  5500:692 Field Experience: Colloquium 1

Minimum credits required for degree: 48

Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Physics Licensure (530612MSED)

• Educational Foundations Courses (10 credits)
• Curricular and Instructional Studies (20 credits):
  5500:575 Instructional Technology Applications 3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a) 3
  5500:520 Advanced Instructional Techniques (taken in conjunction with 5500:521) (b) 3
### Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Chemistry Licensure (530613MSED)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5500:550</td>
<td>Nature, History, and Philosophy of Science</td>
<td>3</td>
</tr>
<tr>
<td>3010:595</td>
<td>FieldLab Studies in Environmental Science</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 3 credits at 500-level or above in teaching field or chemistry.

Minimum credits required for degree: 48

### Option in Adolescent to Young Adult (AYA) Education (grades 7-12): Physical Science (Chemistry and Physics) Licensure (530509MSED)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5500:575</td>
<td>Instructional Technology Applications</td>
<td>3</td>
</tr>
<tr>
<td>5500:617</td>
<td>Licensure Seminar in Curricular and Instructional Studies (a)</td>
<td>3</td>
</tr>
<tr>
<td>5500:520</td>
<td>Advanced Instructional Techniques (taken in conjunction with 5500:521)</td>
<td>3</td>
</tr>
<tr>
<td>5500:521</td>
<td>Field Experience: Advanced Instructional Techniques</td>
<td>2</td>
</tr>
<tr>
<td>5500:619</td>
<td>Instructional and Management Practices (taken in conjunction with 5500:693-011)</td>
<td>3</td>
</tr>
<tr>
<td>5500:693</td>
<td>Field Experience: Master’s with Licensure (section 011)</td>
<td>1</td>
</tr>
<tr>
<td>5500:629</td>
<td>Reading Programs in Secondary Schools</td>
<td>3</td>
</tr>
<tr>
<td>5500:xxx</td>
<td>Elective in curriculum or teaching practices approved by advisor</td>
<td>2</td>
</tr>
</tbody>
</table>

Minimum credits required for degree: 48

### Option in Multi-Age (grades P-12) Education: French Licensure (530603MSED)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5500:694</td>
<td>Field Experience: Classroom Instruction (c)</td>
<td>8</td>
</tr>
<tr>
<td>5500:692</td>
<td>Field Experience: Colloquium</td>
<td>1</td>
</tr>
</tbody>
</table>

Minimum credits required for degree: 48

### Option in Multi-Age (grades P-12) Education: Spanish Licensure (530606MSED)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5500:575</td>
<td>Instructional Technology Applications</td>
<td>3</td>
</tr>
<tr>
<td>5500:617</td>
<td>Licensure Seminar in Curricular and Instructional Studies (a)</td>
<td>3</td>
</tr>
<tr>
<td>5500:520</td>
<td>Advanced Instructional Techniques (taken in conjunction with 5500:521)</td>
<td>3</td>
</tr>
<tr>
<td>5500:521</td>
<td>Field Experience: Advanced Instructional Techniques</td>
<td>2</td>
</tr>
<tr>
<td>5500:619</td>
<td>Instructional and Management Practices (taken in conjunction with 5500:693-011)</td>
<td>3</td>
</tr>
<tr>
<td>5500:693</td>
<td>Field Experience: Master’s with Licensure (section 011)</td>
<td>1</td>
</tr>
<tr>
<td>5500:555</td>
<td>Literacy for Multilingual Licensure</td>
<td>3</td>
</tr>
<tr>
<td>5500:621</td>
<td>Instructional Techniques: Modern Languages K-8</td>
<td>3</td>
</tr>
</tbody>
</table>

Minimum credits required for degree: 50

### Area of Concentration (9):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>5500:550</td>
<td>Nature, History, and Philosophy of Science</td>
<td>3</td>
</tr>
<tr>
<td>3010:595</td>
<td>FieldLab Studies in Environmental Science</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 3 credits at 500-level or above in teaching field or geology.

Minimum credits required for degree: 48

### Area of Concentration (9):

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
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<td>Nature, History, and Philosophy of Science</td>
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</tr>
<tr>
<td>3010:595</td>
<td>FieldLab Studies in Environmental Science</td>
<td>3</td>
</tr>
</tbody>
</table>

Select 3 credits at 500-level or above in teaching field or geology.

Minimum credits required for degree: 48
5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011)  3
5500:693 Field Experience: Master's with Licensure (section 011)  1
5500:556 Literacy for Multilanguage Licensure  3
5500:621 Instructional Techniques: Modern Languages K-8  3

• Area of Concentration (9):
  Select 9 credits at 500-level or above.

• Field Experience (Student Teaching) (12 credits):
  Teacher candidates must achieve the minimum levels of Advanced Low on the Oral Proficiency Test (OPT) and Advanced Low on the Written Proficiency Test (WPT) prior to student teaching.
  5500:694 Field Experience: Classroom Instruction (c)  6
  5500:694 Field Experience: Classroom Instruction  5
  5500:692 Field Experience: Colloquium  5
  Minimum credits required for degree:  50

Option in Multi-Age (grades P-12) Education: Visual Arts Licensure (530601MSED)

• Educational Foundations Courses (10 credits)
  5500:555 Literacy for Multilanguage Licensure  3
  7400:591 Career-Technical FCS Instructional Strategies (taken in conjunction with 5500:521)  3
  5500:521 Field Experience: Advanced Instructional Techniques  2
  5500:xxx Elective in curriculum or teaching practices approved by advisor  2

• Area of Concentration (9):
  Select 9 credits with advisor approval

• Field Experience (Student Teaching) (9 credits):
  5500:694 Field Experience: Classroom Instruction (c)  8
  7400:598 Student Teaching Seminar  1
  Minimum credits required for degree:  48

Option in Multi-Age (P-12) Education: Drama Licensure (530602MSED)

Contact Program Coordinator in Theatre Arts, Guzzetta Hall 394

• Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications  3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a)  3
  7800:573 Methods of Teaching Elementary Theatre Arts  3
  7800:574 Methods of Teaching Secondary Theatre Arts  3
  5500:819 Instructional and Management Practices (taken in conjunction with 5500:693-011)  3
  5500:693 Field Experience: Master's with Licensure (section 011)  1
  5500:555 Literacy for Multilanguage Licensure  3
  5500:xxx Elective in curriculum or teaching practices approved by advisor  2

• Area of Concentration (9):
  Select 9 credits with advisor approval

• Field Experience (Student Teaching) (9 credits):
  5500:694 Field Experience: Classroom Instruction (c)  8
  5500:692 Student Teaching Colloquium  1
  Minimum credits required for degree:  49

Option in Special Education: Mild/Moderate Intervention Specialist Licensure (561204MSED)

• Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications  3

• Area of Concentration (26 credits):
  5610:540 Individuals with Exceptionalities: Educational and Societal Issues  3
  5610:547 Developmental Characteristics of Mild/Moderate Educational Needs  4
  5610:567 Management Strategies  3
  5610:563 Assessment in Special Education  3
  5610:552 Special Education Programming: Secondary/Transition  3
  5610:551 Special Education Programming: Mild/Moderate I  3
  5610:557 Special Education Programming: Mild/Moderate II  4

• Field Experience: Student Teaching and Practicum (14 credits) or Master's Project and Practicum (6 credits):
  5610:690 Student Teaching: Special Education  11
  5610:570 Practicum  3
  or
  5610:694 Master's Project  3
  5610:570 Practicum  3

Minimum credits required for degree:  45-53

Option in Special Education: Moderate/Intensive Intervention Specialist Licensure (561205MSED)

• Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications  3

• Area of Concentration (27 credits):
  5610:540 Individuals with Exceptionalities: Educational and Societal Issues  3
  5610:547 Developmental Characteristics of Moderate/Intensive Educational Needs  4
  5610:567 Management Strategies  3
  5610:604 Collaboration and Consultation Skills for Special Educators  3
  5610:563 Assessment in Special Education  3
  5610:552 Special Education Programming: Secondary/Transition  3
  5610:551 Special Education Programming: Mild/Moderate I  3
  5610:557 Special Education Programming: Moderate/Intensive II  4
  5610:554 Special Education Programming: Moderate/Intensive II  4

• Field Experience: Student Teaching and Practicum (14 credits) or Master’s Project and Practicum (6 credits):
  5610:690 Student Teaching: Special Education  11
  5610:570 Practicum  3
  or
  5610:694 Master’s Project  3
  5610:570 Practicum  3

Minimum credits required for degree:  46-54

Option in Career-Technical Education: Family and Consumer Sciences Licensure (Grades 4-12) (530104MSED)

(Admissions to this program are currently suspended)

Contact Program Coordinator in Family and Consumer Sciences, Shrank Hall South 215

• Educational Foundations Courses (10 credits)
  5500:575 Instructional Technology Applications  3
  5500:617 Licensure Seminar in Curricular and Instructional Studies (a)  3
  5500:619 Instructional and Management Practices (taken in conjunction with 5500:693-011)  3
  Minimum credits required for degree:  48

• Area of Concentration (9):
  Select 9 credits at 500-level or above.

• Field Experience (Student Teaching) (14 credits) or Master’s Project and Practicum (6 credits):
  5610:690 Student Teaching: Special Education  11
  5610:570 Practicum  3
  or
  5610:694 Master’s Project  3
  5610:570 Practicum  3

Minimum credits required for degree:  46-54

Graduate Studies 61
Option in Special Education: Early Childhood Intervention Specialist Licensure (561206MSED)

- Educational Foundations Courses (10 credits)
- Curricular and Instructional Studies (3 credits):
  5500:575 Instructional Technology Applications 3
- Area of Concentration (26 credits):
  5610:540 Individuals with Exceptionalities: Educational and Societal Issues 3
  5610:548 Developmental Characteristics of Moderate/Intensive Educational Needs 4
  5610:567 Management Strategies 3
  5610:604 Collaboration and Consultation Skills for Special Educators 3
  5610:564 Assessment and Evaluation in Early Childhood Special Education 3
  5610:550 Special Education Programming: Early Childhood 3
  5610:553 Special Education Programming: Moderate/Intensive I 4
  5610:561 Special Education Programming: Early Childhood Moderate/Intensive 3
- Field Experience: Student Teaching and Practicum (14 credits) or Master’s Project and Practicum (6 credits):
  5610:690 Student Teaching: Special Education 11
  5610:570 Practicum 3
  or
  5610:684 Master’s Project 3
  5610:570 Practicum 3

Minimum credits required for degree: 45-53

(a) Prerequisite: Admission to the Master’s with Licensure program and teacher education program
(b) Prerequisite: Admission to the Master’s with Licensure program and teacher education program and 5500:617
(c) Prerequisite: Approval of Student Teaching Committee, based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio

Teaching Field Requirements

Candidates in the Master’s with Licensure program must also meet teaching field requirements as established by departmental faculty and approved by the appropriate specialized professional associations and the Ohio Board of Regents. For additional information about specific program requirements please consult the Office of Student Services at (330) 972-7750.

Student Portfolio

Students admitted to their selected College of Education program and beginning their professional education coursework fall 2005 and thereafter will complete a student portfolio. Specific key assessments for the portfolio are often completed as part of a course, clinical experience, or field experience, and must be judged acceptable by the instructor before credit is awarded for the experience connected to that particular portfolio entry. The portfolio must also be submitted for acceptance before student teaching and again prior to program completion.

Clinical and Field-Based Experiences

All teacher education candidates, including those in the master’s with licensure programs, are required to participate satisfactorily in clinical and field-based experiences prior to recommendation for licensure. These integrated and developmental clinical and field-based experiences are designed to provide teacher education students with opportunities to apply theory and skills related to their areas of licensure. Clinical and field-based experiences are planned in diverse settings and provide comprehensive early and ongoing field-based opportunities in which candidates may observe, assist, tutor, instruct, and/or conduct research. Field experiences may occur in off-campus educational settings.

Student teaching is a full-time opportunity that provides candidates with an intensive and extensive culminating clinical experience in an approved public or private school for either twelve weeks (adolescent to young adult) or sixteen weeks (intervention specialist, multi-age, or vocational family and consumer science licensure). Candidates are immersed in the learning community and are provided opportunities to develop and demonstrate competence in the professional roles for which they are preparing. Placements are made in appropriate sites at the discretion of the Office of Student Teaching and Field Experiences in consultation with program faculty and district leaders. All students must have approval of the Student Teaching Committee to be placed for student teaching. Committee approval requires that the student submit an approved application for student teaching, evidence of a passing score or scores on the appropriate PRAXIS II subject area test or tests, and evidence of approval of his/her portfolio.

Educational Foundations and Leadership

Educational Administration

The Department of Educational Foundations and Leadership offers a master’s degree program in general administration which is not directed toward a particular administrative license. With the help of an advisor and approval of the Graduate School, courses may be substituted and/or waived to create specialized options. Requirements of the standard program and examples of two such specialized programs are listed below.

General Administration (Standard Program)

570100M (570100MS)

(Admissions to this program are currently suspended)

- Foundation – 12 credits:
  5100:600 Philosophies of Education 3
  or
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 School Culture and Governance 3
  5100:624 Seminar: Educational Psychology 3
  5100:636 Topical Seminar in Educational Technology 3
  5100:640 Techniques of Research 3

- Educational Administration – 15:
  5170:601 Organizational Leadership 3
  5170:604 School-Community Relations 3
  5170:606 Evaluation in Educational Organizations 3
  5170:607 School Law 3
  5170:613 Student Services and Interagency Collaboration 3

- Curriculum and Supervision – 6:
  5170:609 Principles of Curriculum Development 3
  5170:610 Supervision of Instruction 3

Total: 33 credits

The student will be required to pass a portfolio assessment by a three-member full-time faculty panel in order to qualify for graduation.

The Principalship

570104M (570104MS)

The Department of Educational Foundations and Leadership offers a 30 hour Master’s Degree Program in the Principalship. With the help of an advisor and approval of the Graduate School, courses may be substituted and/or waived to create specialized options. Requirements of the Principalship Master’s Degree Program in Educational Administration are listed below.

Admission Requirements:

No supplemental materials in addition to submission of the graduate application and official transcripts are required for admission. Applications to the master’s program in Principalship must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time.

Degree Requirements:

- Foundation Studies (9)
  5100:600 Philosophies of Education 3
  or
  5100:604 Cultural Foundations of Education 3
  5100:624 Educational Psychology 3
  5100:640 Techniques of Research 3

- Educational Leadership Core (21)
  5170:601 Organizational Leadership 3
  5170:604 School Contexts and Community Involvement 3
  5170:607 School Law 3
  5170:610 Supervision of Instruction 3
  5170:620 School Culture and Governance 3
  5170:615 Student Services and Disability Law 3
  5170:720 Seminar: Capstone 3

Total: 30 credits

The Principalship Licensure Program is an option in educational administration designed to prepare a candidate for an Ohio license to practice as a school principal and is built on two components: the Principalship master’s degree and those post-master’s courses listed below.

The Principalship master’s degree program and the post-master’s licensure courses have been aligned with the Educational Leadership Constituents Council (ELCC) standards specific key assessments embedded in coursework and must be completed to demonstrate that students meet these standards.

Post-Master’s Licensure Courses – 12 credits:

- Management of Physical Resources 3
- Management of Human Resources 3
- Principal Internship 3 credits each

To obtain a license to practice the work of a school principal through the College of Education, the candidate will have a total of 42 post-baccalaureate hours, a master’s degree, completion of a supervised two semester internship in the area in which the candidate seeks the license, successful passage of the state licensing examination, and completion of a statement of good moral character.

Administrative Specialists

570006M (570006MS)

The Department of Educational Foundations and Leadership offers programs leading to Educational Administrative Specialist licenses granted by the Ohio Department of Education.
Each of these specialist licensure programs consists of a general administration master’s degree and a post-master’s block of required courses.

**Administrative Specialist: Educational Research**  
(Admissions to this program are currently suspended)

- **Foundation Studies** – 18 credits:
  - 5100:600 Philosophies of Education
  - 5100:604 Topical Seminar in the Cultural Foundations of Education
  - 5100:620 School Culture and Governance
  - 5100:640 Seminar: Educational Psychology
  - 5100:636 Topical Seminar in Educational Technology
  - 5100:642 Topical Seminar in Measurement and Evaluation
  - 5100:741 Statistics in Education

- **Educational Administration** – 15 credits:
  - 5170:601 Organizational Leadership
  - 5170:604 School-Community Relations
  - 5170:606 Evaluation in Educational Organizations
  - 5170:607 School Law
  - 5170:608 School Finance and Economics

- **Post-Master’s Requirements** – 16 credits:
  - 5170:704 Advanced Organizational Leadership
  - 5170:743 Advanced Educational Statistics
  - 5170:795/6 Internship*
  - 5170:801 Research Seminar

*Students admitted to Educational Administration Internship Coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

**Administrative Specialist: Educational Staff Personnel Administration**  
(Admissions to this program are currently suspended)

- **Foundation Studies** – 12 credits:
  - 5100:600 Philosophies of Education
  - 5100:604 Topical Seminar in the Cultural Foundations of Education
  - 5100:620 School Culture and Governance
  - 5100:640 Seminar: Educational Psychology
  - 5100:636 Topical Seminar in Educational Technology
  - 5100:640 Techniques of Research

- **Educational Administration** – 21 credits:
  - 5170:601 Organizational Leadership
  - 5170:603 Management of Human Resources
  - 5170:606 Evaluation in Educational Organizations
  - 5170:607 School Law
  - 5170:608 School Finance and Economics
  - 5170:610 Supervision of Instruction

- **Post-Master’s Requirements** – 14 credits:
  - 5170:704 Advanced Organizational Leadership
  - 5170:705 Decision Making in Educational Administration
  - 5170:707 The Superintendency
  - 5170:795/6 Internship*
  - 6500:654 Industrial Relations

*Students admitted to Educational Administration Internship Coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

**Administrative Specialist: Instructional Services**  
(Curriculum, Instruction, and Professional Development)  
(Admissions to this program are currently suspended)

- **Foundation Studies** – 12 credits:
  - 5100:600 Philosophies of Education
  - 5100:604 Topical Seminar in the Cultural Foundations of Education
  - 5100:620 School Culture and Governance
  - 5100:640 Seminar: Educational Psychology
  - 5100:636 Topical Seminar in Educational Technology
  - 5100:640 Techniques of Research

- **Educational Administration** – 21 credits:
  - 5170:601 Organizational Leadership
  - 5170:603 Management of Human Resources
  - 5170:604 School-Community Relations
  - 5170:606 Evaluation in Educational Organizations

**Administrative Specialist: Pupil Personnel Administration**  
(Admissions to this program are currently suspended)

- **Foundation Studies** – 12 credits:
  - 5100:600 Philosophies of Education
  - 5100:604 Topical Seminar in the Cultural Foundations of Education
  - 5100:620 School Culture and Governance
  - 5100:640 Seminar: Educational Psychology
  - 5100:636 Topical Seminar in Educational Technology
  - 5100:640 Techniques of Research

- **Educational Administration** – 21 credits:
  - 5170:601 Organizational Leadership
  - 5170:603 Management of Human Resources
  - 5170:606 Evaluation in Educational Organizations
  - 5170:607 School Law
  - 5170:608 School Finance and Economics
  - 5170:610 Supervision of Instruction

- **Post-Master’s Requirements** – 16 credits:
  - 5600:631 Elementary/Secondary School Counseling
  - 5600:653 Group Counseling
  - 5600:659 Organization and Administration of Guidance Services
  - 5170:704 Advanced Organizational Leadership
  - 5170:795/6 Internship*

*Students admitted to Educational Administration Internship Coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

**Administrative Specialist: School and Community Relations**  
(Admissions to this program are currently suspended)

- **Foundation Studies** – 12 credits:
  - 5100:600 Philosophies of Education
  - 5100:604 Topical Seminar in the Cultural Foundations of Education
  - 5100:620 School Culture and Governance
  - 5100:636 Topical Seminar in Educational Technology
  - 5100:640 Techniques of Research

- **Educational Administration** – 21 credits:
  - 5170:601 Organizational Leadership
  - 5170:603 Management of Human Resources
  - 5170:606 Evaluation in Educational Organizations
  - 5170:607 School Law
  - 5170:608 School Finance and Economics
  - 5170:610 Supervision of Instruction

- **Post-Master’s Requirements** – 16 credits:
  - 5170:604 School-Community Relations
  - 5170:704 Advanced Organizational Leadership
  - 7600:625 Theories of Mass Communication
  - 7600:628 Contemporary Public Relations Theory
  - 5170:795/6 Internship*

*Students admitted to Educational Administration Internship Coursework following Spring of 2004 will be required to pass the state licensure exam prior to enrollment in 5170:795/796.

**Superintendent Program**  
(570103MA) (570103MS)  
(Admissions to this program are currently suspended)

The Department of Educational Foundations and Leadership offers a Superintendent Licensure-only program. The license builds from the Principalship Master’s Degree and the Principalship Licensure programs. Requirements for the Superintendent License are listed below.

- 5170:608 School Finance and Economics
- 5170:704 Advanced Organizational Leadership
To obtain a license to practice the work of a school superintendent in the State of Ohio, through the College of Education, the candidate will have a total of 60 post-baccalaureate hours, a master’s degree, three years of experience practicing under a valid principal license, completion of a supervised two semester internship, successful passage of the state licensing examination, and good moral character.

Higher Education Administration (570102MA) (570102MS)

All applicants to the program should have previously earned a bachelor’s degree. Special admission for concurrent study toward a master’s degree and the higher education education certificate may be allowed for persons currently employed in higher education.

Admission Requirements

Persons wishing to pursue a master’s degree in Educational Administration-Higher Education Option must apply to the Graduate School for admission to the program. In addition to the completed application to the Graduate School, applicants should have a minimum combined verbal and quantitative score of 280 and a 3.5 analytical writing score. Applications are accepted on a rolling basis.

Degree Requirements

- **Foundation courses (3 credits):**
  - 5100:640 Techniques of Research 3

- **Required courses (33 credits):**
  - 5190:515 Administration in Higher Education 3
  - 5190:521 Law and Higher Education 3
  - 5190:526 Student Services and Higher Education 3
  - 5190:527 The American College Student 3
  - 5190:530 Higher Education Curriculum and Program Planning 3
  - 5190:600 Advanced Administrative Colloquium in Higher Education 3
  - 5190:601 Internship in Higher Education 2
  - 5190:602 Internship in Higher Education Seminar 1
  - 5190:610 Diversity Issues in Higher Education 3
  - 5190:615 Historical Foundations of American Higher Education 3
  - 5190:620 Financial and Higher Education 3
  - 5190:626 Policy, Assessment, and Accountability in Higher Education 3

Total Hours Required: 36

- **Electives (9 to 12 credits):**
  - 5190:525 Topical Seminar 3
  - 5190:590 Workshop 3
  - 5190:635 Instructional Strategies and Techniques for the College Instructor 3

Students must successfully complete a master’s comprehensive examination for the Educational Administration-Higher Education Option.

Educational Foundations (M.A.)

Specialized Options:

- Instructional Technology
- Educational Psychology (admissions suspended)
- Social/Philosophical Foundations of Education
- Assessment and Evaluation

This Master’s degree program area is designed for either the student interested in improving present educational skills or the student interested in educational or instructional positions in business, industry, and social services. The student’s program of study will be determined jointly by the student and advisor. The program consists of:

- College Core Foundation Studies (nine credits)
- Program Requirements for the specialization selected above (minimum of 15 credits)
- Outside Department (minimum of six credits except for Instructional Technology option)
- Master’s Comprehensive Examination (electronic portfolio for Instructional Technology and Assessment and Evaluation)
- Election of master’s thesis (5100:699), or master’s problem (5100:698), or an additional six semester credits of coursework. Students choosing to do a master’s thesis or master’s problem require 30 semester credits to graduate. Students choosing to do only coursework require 36 semester credits to graduate (except for Assessment and Evaluation which requires 30 semester credits to graduate).

Admission Requirements

No supplemental materials in addition to submission of the graduate application and official transcripts are required for admission to the specialized options in Educational Foundations. Applications are accepted on a rolling basis.

Instructional Technology Option (30 credits)

(51001MA)

The graduate program in Educational Foundations emphasizing Instructional Technology has been designed to assist its students in becoming competent, employable professionals, capable of making a significant contribution to the field. The graduate curriculum of 30 semester hours provides students with exposure to a wide range of emerging technologies, while still ensuring the basic competencies required of all practitioners. The program directly addresses the rapidly accelerating changes in the field of interactive and Web 2.0 technologies while being rooted in instructional design principles. The focus is on K-12 educators working in the field or recent graduates. Students are required to complete an ePortfolio demonstrating their application of instructional technology in the field as well as their expertise in their graduate classes. The program is offered in a blended format with some classes fully online and some a combination of face-to-face and online.

Master’s degree graduates of the Instructional Technology program have found employment as technology facilitators and coaches in school districts, technology resource personnel in K-12 educational institutions, training specialists and instructional designers in business, education and government, as well as multimedia developers and specialists. An endorsement for K-12 teachers in Technology Facilitation is available and is embedded into the coursework of this graduate degree program.

- **Foundation Studies (9 credits)**
  - 5100:600 Philosophies of Education 3
  - 5100:604 Cultural Foundations of Education 3
  - 5100:624 Educational Psychology 3
  - 5100:640 Techniques of Research 3

- **Required Core Courses (15 credits)**
  - 5150:610 Introduction to Instructional Technology 3
  - 5150:631 Instructional Design 3
  - 5150:615 Planning for Technology 3
  - 5150:633 Multimedia/Hypermedia 3
  - 5150:638 Integrating and Implementing Technology 3

- **Electives (choose 6 credits)**
  - 5100:590, 591 Workshop: Instructional Technology (permission) 1-3
  - 5150:632 Web-Based Learning Systems 3
  - 5150:639 Strategies for Online Teaching and Learning 3
  - 5150:635 Emerging Technologies in Instruction 3
  - 5150:696 Master’s Technology Project 3

Technology Facilitation Endorsement (K-12 Computer Technology Endorsement)

The Graduate K-12 Computer Technology (Technology Facilitation Endorsement) is intended for teachers who wish to serve as a technology integration facilitator or technology coach for colleagues in their schools and districts. The endorsement is obtained through an application process to the Ohio Department of Education and upon approval will be added to your teaching license.

This endorsement is only available to individuals who currently have or who are simultaneously getting an initial Ohio license/certificate e.g. in Early Childhood, Middle Level Science, Adolescent/Young Adult Social Studies, etc.). This endorsement can be completed with a master’s degree in Instructional Technology in the Department of Educational Foundations and Leadership (330-927-7773). Individual school districts, not the State of Ohio or The University of Akron, determine the extent to which the endorsement is applicable to their needs and requirements. There is only one Computer Technology endorsement offered within the IT masters degree program, the Graduate K-12 Computer Technology Endorsement. Specific key assessments in coursework must be completed to demonstrate that students meet these standards. This endorsement follows the ISTE TF standards for Technology Facilitation. This endorsement is designed to prepare teachers to be effective users of technology in teaching practice of their colleagues at building and district levels. It is not intended to develop skills in computer repair, network maintenance or computer programming languages.

- 5150:610 Introduction to Instructional Technology 3
- 5150:614 Planning for Technology 3
- 5150:631 Instructional Design 3
- 5150:632 Web-Based Learning Systems 3
- 5150:633 Multimedia/Hypermedia 3
- 5150:638 Integrating and Implementing Technology 3

Educational Psychology Option (30-36 credits)

(51002MA)

(Admissions to this program are currently suspended)

The cognitive theory and research underlie much of the reform movement in education and the allied professions. The graduate program in Educational Foundations emphasizing Educational Psychology emphasizes a strong understanding of cognition, motivation, teaching, learning, and individual differences and is designed to assist students to become more competent practitioners in a wide range of contexts in education and allied professions.

- 5150:610 Introduction to Instructional Technology 3
- 5150:614 Planning for Technology 3
- 5150:631 Instructional Design 3
- 5150:632 Web-Based Learning Systems 3
- 5150:633 Multimedia/Hypermedia 3
- 5150:638 Integrating and Implementing Technology 3
Teaching and Training Technical Professionals

The major objective of the teaching and training technical professionals program is to prepare the instructor and other educational personnel for postsecondary educational institutions, industry, and public and private agencies engaged in the education and training of technicians and middle-level workers. All courses are also available fully online.

Admission Requirements

The Department of Educational Foundations and Leadership requires no supplemental materials in addition to submission of the graduate school application and official transcripts for admission to the master’s degree program in Teaching and Training Technical Professionals. Applications are accepted on a rolling basis.

Program for those with a B.S. in Teaching and Training Technical Professionals
(540000MSTE)

• Foundation Studies – 9 credits:
  5100:604 Topical Seminar in Cultural Foundations of Education 3
  or
  5400:580 Advanced System Design: Needs Assessment and Evaluation 3
  or
  5400:620 Postsecondary Teacher Leadership 3
  or
  5400:660 Postsecondary Distance Learning 3
  or
  5400:698 Master’s Problem 6
  or
  5400:699 Master’s Thesis 6
  Total: 30 credits

Program for those without a B.S. in Teaching and Training Technical Professionals
(540020MSTE)

• Foundation Studies – 9 credits:
  5100:604 Topical Seminar in Cultural Foundations of Education 3
  or
  5400:580 Advanced System Design: Needs Assessment and Evaluation 3
  or
  5400:620 Postsecondary Teacher Leadership 3
  or
  5400:660 Postsecondary Distance Learning 3
  or
  5400:698 Master’s Problem 6
  or
  5400:699 Master’s Thesis 6
  Total: 30 credits

Sport Science and Wellness Education

The student who expects to earn a master’s degree in the Department of Sport Science and Wellness Education is expected to meet the criteria for admission of the Graduate School. Applications for all master’s degree programs in the Department of Sport Science and Wellness Education must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time.

Outdoor Education
(556000MA) (556000MS)

(Admissions to this program are currently suspended)

The outdoor education program, requiring 32 credits, is designed for those students having an undergraduate background in elementary or secondary education, biological environmental studies, health, physical education, or other related fields. Students may become involved with existing outdoor education programs in the public schools, metropolitan, state and national park programs, or private and public agencies which conduct outdoor/environmental education programs.

• Foundation Studies – nine credits.
• Required Foundation Courses:

  5100:640 Techniques of Research 3

Remaining six (6) credits to be chosen, with approval of advisor, from 5100:5xx or 5100:6xx course offerings or 5550:606 Statistics: Qualitative and Quantitative Methods.
• Required courses:
  5560:550 Application of Outdoor Education to the School Curriculum 4
  5560:552 Resources and Resource Management for the Teaching of Outdoor Education 4
  5560:556 Outdoor Pursuits 4
  or
  5560:605 Outdoor Education: Special Topics 2-4
  5560:600 Outdoor Education: Rural Influences 3
  5560:695 Field Experience 2-6 (at least 2 credits if only option selected)
  or
  5560:698 Master's Problem 2-4
  or
  5560:699 Master's Thesis 4-6

With the approval of the advisor, the student will select additional courses and/or workshops related to the graduate program.

Physical Education

Physical Education Option (555000MA) (555000MS)

(Admissions to this program are currently suspended)

The graduate program in physical education, requiring 33 credits, is designed for post-baccalaureate and in-service physical educators. Training received in this program comes from two (2) areas: the foundations (6 cr.) and the program studies area of physical education (22 cr.). The emphasis in this curriculum is to provide answers to the questions "what can I learn about teaching and what decisions do I face as a professional educator?" Students will be assigned an advisor with whom they should consult on a regular basis. In fact, advisor approval is required on certain course work.

• Required Foundation Courses:
  5100:600 Philosophies of Education 3
  5100:604 Topical Seminar in the Cultural Foundations of Education 3
  5100:620 Psychology of Instruction for Teaching and Learning 3
  or
  5100:624 Seminar: Educational Psychology 3
  5100:640 Techniques of Research Subtotal 6

• Required Department Courses:
  5550:536 Foundations and Elements of Adapted Physical Education 3
  5550:601 Sports Administration and Supervision 3
  5550:602 Motor Behavior Applied to Sports 3
  or
  5550:604 Current Issues in Physical Education 3
  5550:603 Tactics and Strategies in the Science of Coaching 3
  5550:605 Physiological and Physical Activity and Exercise 3
  5550:606 Statistics: Qualitative and Quantitative Methods 3
  5550:609 Motivational Aspects of Physical Activity 3
  5570:521 Comprehensive School Health 4
  5550:695 Field Experience: Master's 2 (minimum)
  or
  5550:696 Master's Problem 2 (minimum)
  or
  5550:699 Master's Thesis 2 (minimum)
  Total Program 33

With the approval of an advisor, the student may select additional courses and/or workshops related to the graduate program.

Exercise Physiology/Adult Fitness Option (555003MS)

This graduate program, requiring a minimum of 34 credits, is designed to prepare students for advanced study in exercise physiology and future employment in adult fitness, corporate fitness and cardiac rehabilitation programs. Special attention is also given to knowledge and practical skills necessary for students preparing for American College of Sports Medicine certifications.

Admission Requirements

In addition to the graduate application and official transcripts applicants must submit a statement of purpose and three letters of recommendation. Applications to the master’s program in Exercise Physiology/Adult Fitness must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time.

Degree Requirements

• Required Foundation Courses (6 credits):
  5100:610 Introduction to Statistics in Human Services 3
  5100:640 Techniques of Research 3

• Required Department Courses (22 credits):
  5550:600 Biomechanics Applied to Sports and Physical Activity 4
  5550:518 Cardiorespiratory Function 3
  3100:565 Advanced Cardiovascular Physiology 3
  or
  5550:615 Current Topics in Exercise Physiology 3
  5550:605 Physiology of Muscular Activity and Exercise 3
  5550:505 Advanced Strength and Conditioning 3
  5550:620 Laboratory Instrumentation Techniques in Exercise Physiology 3
  5550:526 Nutrition in Sports 3

• Required Clinical Experience (2 credits minimum):
  5550:695 Field Experience: Master’s or
  5550:698 Master’s Problem or
  5550:699 Master’s Thesis

• Electives (3 credit minimum) - select at least one course from the list below
  5550:522 Sports Planning and Promotion 3
  5550:538 Cardiac Rehab Principles 3
  5550:603 Sports Administration and Supervision 3
  5550:609 Motivational Aspects of Physical Activity 3
  5550:612 General Medical Aspects 3
  5550:680 Special Topics in Physical Education 3

Sport Science/Coaching Option (555109MS)

This sport science program option has been designed to meet the needs of individuals interested in advanced training to prepare for a career in the sport industry. Students are prepared to pursue career opportunities in high school, college and recreational sport, coaching and instruction. Additionally, students pursue opportunities related to a career in high school, college or professional sport administration or continue a career in teaching and coaching at the secondary level.

Admission Requirements

In addition to the graduate application and official transcripts applicants must submit a statement of purpose and three letters of recommendation. Applications to the master’s program in Sport Science/Coaching must be completed and submitted at least six weeks (domestic) or six months (international) before the beginning of the term for which admission is sought in order to allow for adequate processing time.

Degree Requirements

• Required Foundation Courses (6 credits)
  5550:604 Current Issues in Sport and Physical Education 3
  or
  5100:624 Seminar Educational Psychology 3
  and
  5100:640 Techniques of Research 3

• Required Courses (17 credits)
  5550:553 Principles of Coaching 3
  5550:562 Legal Aspects of Physical Activity 2
  5550:601 Sports Administration and Supervision 3
  5550:602 Motor Behavior Applied to Sports 3
  5550:603 Tactics and Strategies in the Science of Coaching 3
  5550:609 Motivational Aspects of Physical Activity 3

Choose one area of concentration in sport administration or coaching:

• Sport Administration (11-12 credits)
  5550:522 Sport Planning and Promotion 3
  5550:524 Sport Leadership 3
  5550:630 Business of Sport 3
  5550:695 Field Experience: Master’s or
  5550:698 Master’s Problem or
  5550:699 Master’s Thesis 2 (minimum)

• Coaching (10-12 credits)
  5550:540 Injury Management for Teachers and Coaches 2
  5550:605 Physiology of Muscular Activity and Exercise 3
  5550:695 Field Experience: Master’s 2 (minimum)
  or
  5550:698 Master’s Problem or
  5550:699 Master’s Thesis 2-4 (minimum)

• Electives (0-2 credits)

The following courses are relevant to this degree. The student may select additional courses and/or workshops related to the graduate program:

  5550:590 Workshop (e.g., Issues of Student Athletes) 1-2
  5550:690 Special Topics (e.g., Coaching Youth Sports) 1-2
  Total Program for Sports Administration concentration 34-35
  Total Program for Coaching concentration 33-35
School Nurse License Program

(Admissions to this program are currently suspended)

Admission Requirements—Sequence 2

- R.N. License
- B.S.N. Degree
- Admittance to Graduate School
- Admittance to College of Education (Graduate Studies)
- Admittance to College of Nursing (Special/Non-Degree status)
- Selected coursework in College of Education and College of Nursing
- Supervised School Nurse experience
- Course work distributed over the following areas:
  - Community health; family counseling; mental and emotional health, current topics in health education; methods of teaching/instructional design; learner and learning process; evaluation and measurement of learning; principles, comprehensive school health; advanced pediatric/adolescent assessment; advanced nursing research.

To satisfy the above requirements, an applicant must complete at least the following 12 graduate credits or their equivalents of College of Education core courses listed below:

- 5570:520 Community Health 2
- 5570:521 Comprehensive School Health 4
- 5570:523 Methods and Materials of Teaching Health Education 3
- 5100:742 Statistics in Education Subtotal 12

Applicant must also complete 11-16 graduate credits of College of Nursing courses listed below:

- 8200:553 School Nurse Practicum I Subtotal 23-28
- 8200:554 School Nurse Practicum II (required of all school nursing students) 5
- 8200:613 Nursing Inquiry I 3
- 8200:650 Advanced Pediatric/Adolescent Assessment 3
- 8200:656 Pharmacology for Child and Adolescent Health Nursing 3
- 8200:657 Advanced Pediatric/Adolescent Assessment (upon approval of College of Education school nurse licensing advisor) 3
- 8200:658 Community Health 2
- 8200:659 Advanced Pediatric/Adolescent Assessment 3
- 5100:742 Statistics in Education 3
- 8200:655:553 School Nurse Practicum I (required of all school nursing students) 5
- 8200:656 Pharmacology for Child and Adolescent Health Nursing 3
- Total graduate credits for licensure 11-16

Optional if continuing on to a master’s degree in the College of Nursing:*

- 8200:608 Pathophysiological Concepts 3
- 8200:656 Pharmacology for Child and Adolescent Health Nursing 3
- Total graduate credits for licensure 23-28

Admission Requirements—Sequence 3

- Admittance to the College of Nursing MSN Program—Child and Adolescent Track
- Admittance to College of Education (Special/Non-Degree status)
- Completion of the MSN Program in the Child and Adolescent Track
- Plus 12 graduate credits of College of Education core courses:
  - 5570:520 Community Health 2
  - 5570:521 Comprehensive School Health 4
  - 5570:523 Methods and Materials of Teaching Health Education 3
  - Elective within College of Education 3
  - (upon approval of College of Education school nurse licensing advisor) Total 12

Master’s degree plus licensure.

*The school nurse practicum is contained in the MSN program in 8200:651 and 655 which fulfill the requirements of 8200:553 and 554.

College of Business Administration

Ravi Krovi, Ph.D., Dean
James J. Divoky, D.B.A., Associate Dean
William Hauser, Ph.D., Interim Assistant Dean and Director of Graduate Programs

MASTER’S DEGREES

The College of Business Administration (CBA) offers graduate programs which lead to the degrees of Master of Business Administration, Master of Science in Accountancy, Master of Taxation, and Master of Science in Management. The University has offered programs of study in business since 1919, initially through the Department of Commerce and since 1953 through the College of Business Administration. Programs in graduate studies were begun in 1958. All CBA undergraduate and graduate programs are accredited by the Association to Advance Collegiate Schools of Business (AACSB).

The CBA seeks to fulfill the educational and professional needs of its 500 graduate students, business organizations, and the community. Most of the graduate programs offered are flexible evening programs designed to serve students who are fully employed professionals and wish to pursue a master’s program on a part-time basis. Students often choose to enroll full-time to complete a master’s program more quickly.

Admission

Policy

The applicant must meet one (1) of the following eligibility requirements which are in conformity with the Graduate School and the college’s accrediting agency (AACSB).

- Hold a domestic baccalaureate degree from a regionally accredited college or university and have a total index score of 1,050 or more based upon the overall undergraduate grade point average (GPA)/(A=4.0) times 200 plus the Graduate Management Admissions Test (GMAT) score.
- Hold a domestic baccalaureate degree from a regionally accredited college or university and have a total index score of 1,100 or more based upon the overall undergraduate grade point average (GPA)/(A=4.0) times 200 plus the GMAT score.
- Hold a degree from outside the United States and have an academic standing of first or high second class, satisfactory evidence of competence in English (i.e., TOEFL score of 550 or above) and a score of at least 500 on the GMAT.
- Students who have taken the GRE, MCAT, or LSAT may request consideration for admission based upon those entrance exam scores. To be considered the applicant should score at or above the 50th percentile on each section of the exam. Applicants holding either a master’s, doctoral, or juris doctor degree from an American university may request consideration for admission based on the graduate degree. The individual’s total application will be reviewed, and the graduate admissions committee reserves the right to require the GMAT for admission of the applicant.
- An admission interview will be required of students wishing to be admitted to the MBA program coming directly from an undergraduate program with no professional work experience.

Students admitted on a provisional basis must achieve a composite index of 1,150 based on foundation course GPA times 200 plus GMAT score.

Even though an applicant is eligible for consideration, an offer of admission is not guaranteed. Since staff, facilities, and resources are limited, a determination will be made as to the number of applicants that can be adequately served among those eligible for admission. As a result, offers of admission may be limited to only the most qualified of eligible applicants as determined by the CBA Graduate Admissions Committee. The committee considers the following factors: difficulty of the applicant’s undergraduate program; length of time and activities since graduation; and the percentile ranking on the GMAT.

In rare instances, the applicant who has taken the GMAT but does not meet requirements may be considered for admission. Also, those applicants previously denied admission may, upon presentation of new information, be reconsidered. In either case, the applicant must petition the CBA Graduate Admissions Committee in writing and provide those reasons relevant to the situation which demonstrate the likelihood of success. In all cases, the burden of proof is on the applicant.

Under the regulations of the Graduate School, eligible applicants who have been extended an offer of admission by the CBA Graduate Admissions Committee are recommended to the dean of the Graduate School for either “full” or “provisional” graduate status. Students admitted with “provisional” status who have not attained an overall 3.0 GPA upon completion of 12 graduate credits will be dismissed from the program. Students admitted as non-degree seeking are restricted to enrolling in a maximum of nine credits of Gateway courses only.
Communication
1. Ability to present views and concepts clearly in writing;
2. Ability to objectively critique and judge the value of written work;
3. Ability to present views and concepts clearly through oral communication.

Collaborative work and interpersonal skills
4. Ability to understand group dynamics and work effectively with people from diverse backgrounds;
5. Ability to manage and resolve conflict;
6. Ability to organize and delegate project tasks.

Critical thinking and creative and effective problem solving
7. Ability to solve structured and unstructured problems;
8. Ability to deal effectively with imposed pressures and deadlines.

The basics for this group of skills may be acquired in prior bachelor degree programs. A variety of opportunities are provided to students throughout the program to develop these skills. A student’s progress is to be documented and evaluated by self-evaluation, peer evaluation, and faculty evaluation.

• Gateway Courses:
  All are required unless waived at the time of admission. Gateway Courses may not be used as concentration or action-based learning courses.
  3250:600 Foundation of Economic Analysis 3
  6200:601 Financial Accounting 3
  6400:602 Managerial Finance 3
  6400:655 Government and Business Management 3
  6700:695 Internship in Business 3

The Gateway Internship is required for students with no prior professional experience and does not count toward the degree requirements.

All courses beyond the Gateway Courses require demonstrated proficiencies in Excel, writing, and statistics.

• Professional Courses (6 credits):
  6700:689 Leading and Influencing 1
  6700:691 Professional Integrity 1
  6700:693 Negotiations in the Workplace 1
  6500:601 Business Analytics and Information Strategy 3

• MBA Core Courses (18 credits):
  6800:605 International Business Environments 3
  6400:674 Strategic Financial Decision Making 3
  6200:610 Process Analysis and Cost Management 3
  6500:670 Management of Supply Chains and Operations 3
  6500:620 Strategic Marketing 3
  6500:652 Managing People in Organizations 3

• Concentration Courses (9 or 12 credits):
  Students select 9 or 12 credits (depending upon the concentration requirements) in one of the following fields of concentration: direct interactive marketing; leadership and organizational change; finance; health-care management; international business; international finance; management; global technological innovation; strategic marketing; or supply chain management. Or students may design an inter-disciplinary concentration that meets his or her career objectives. This self-designed concentration must be planned and approved by the CBA Director of Graduate Programs upon the student’s enrollment in the MBA program.
  6500:695 Organizational Strategy 3

• Action-Based Learning Requirement:
  Each student is required to fulfill an action-learning requirement. This course requirement may be fulfilled by approved concentration courses which consist of real world projects and other activities in which students are engaged in action-based learning. Other action-based learning ventures that will fulfill this program requirement include, but are not limited to, internships (excluding the Gateway Internship), study abroad programs, independent studies, and special topic courses designated as fulfilling this program requirement.
  Required Professional, Core, and Integrative courses will not fulfill this program requirement.

• Program Summary
  Gateway Courses 12
  Professional Courses 6
  MBA Core Courses 18
  Concentration Courses 9 or 12
  Integrative Course 3
  Action-Based Learning (if not fulfilled in a concentration course) 3 or 0
  Total Program 51

If the Gateway Courses are all waived and the Action-Based Learning requirement is fulfilled in a concentration course within a 9 credit concentration, the MBA program is 36 credits.

Concentration in Business Analytics (650209MBA)

• Required (9 credits):
  6500:571 Management Project 3
  6500:644 Knowledge Management and Business Intelligence 3
  6500:653 Data Analysis for Managers 3
Concentration in Direct Interactive Marketing
(66010MBA)
Expertise in Directed Interactive Marketing is critical in today’s marketing environment that focuses on one-to-one relationship building, brand equity, and customer lifetime value. This concentration will instruct students on how to employ customer databases to create interactive communication campaigns, acquire customers, and retain customers through customer relationship management programs. In a highly applied format students will become familiar with the resources at the Taylor Institute for Direct Marketing, including the Xerox XMPie Cross Media Laboratory.
• Required (9 credits):
  6600:615 Cross-Media Database Marketing 3
  6600:630 Customer Relationship Management 3
  6600:635 E-Commerce and Interactive Marketing 3

Concentration in Finance
(64000MBA)
The MBA Finance Concentration provides the student with the decision tools and analytical skills needed for the successful financial management of the firm.
• Required (9 credits):
  6400:631 Financial Markets and Institutions 3
  6400:645 Investment Analysis 3
  6400:678 Capital Budgeting 3
• Choose three credits from the following:
  6400:538 International Banking 3
  6400:581 International Business Finance 3
  6400:650 Techniques of Financial Modeling 3
  6400:690 Selected Topics in Finance 3
  6400:691 International Markets and Investments 3
  6400:697 Independent Study in Finance 3
• Required (9 credits):
  6500:661 Comparative Systems of Employee and Labor Relations 3
  6500:662 Applied Operations Research 3
  6500:663 Data Analysis for Managers 3
  6500:640 Business Research Methods 3

Concentration in Global Technological Innovation
(63000MBA)
In a highly inter-dependent global economy technological innovations are emerging as the disruptive drivers of enterprise growth and survival. In this program students explore technology and innovation as a value adding system. This will prepare them as a valuable resource to help small, medium, and well-established large enterprises to launch their product, process, and service innovations faster. The program also prepares students to plan and launch new ventures and enterprises based on innovations.
• Required (9 credits):
  6500:608 Entrepreneurship 3
  6500:665 Management of Technology 3
  6500:675 Global Supply Chain Management 3

Concentration in Health Care
(65000MBA)
• Required (9 credits):
  6500:681 Supply Chain Logistics Management 3
  6500:682 Health Services Operations Management 3
  6500:683 Health Services Systems Management 3

Interdisciplinary Concentration
(60300MBA)
This self-designed concentration must be planned and approved by the CBA Director of Graduate Programs upon the student’s enrollment in the MBA program. This concentration is intended for students with specific interdisciplinary career interests. The Interdisciplinary Concentration may include courses from colleges outside of the College of Business Administration.

Concentration in International Business
(68000MBA)
This academic program views international business in the broad context of all business transactions devised and carried out across national borders to satisfy the organizational and personal goals of firms and individuals. International business studies incorporate all of the functional business operations of accounting, finance, management, and marketing; as such, it is an integrative field of study within an international framework. Students will integrate issues and trends in the global business environment and apply this insight to decision making.
• Required (3 credits):
  6500:675 Global Supply Chain Management 3
• Choose six credits from the following:
  6800:630 International Marketing Policy 3
  6800:690 Seminar: International Business 3
  6800:697 Independent Study: International Business 1-3

Concentration in International Business for International Executives
(68003MBA)
• Required (choose one of the following courses):
  6200:664 Research and Quantitative Methods in Accounting 3
  6400:650 Techniques of Financial Modeling 3
  6500:662 Applied Operations Research 3
  6500:663 Data Analysis for Managers 3
  6500:640 Business Research Methods 3
• Plus any 9 credits in International Business:
  6800:630 International Marketing Policies 3
  6800:645 Multinational Corporations 3
  6800:690 Seminar in International Business 3
  6800:697 Independent Study in International Business 1-3
  6200:680 International Accounting 3
  6400:538 International Banking 3
  6400:581 International Business Finance 3
  6400:589 International Markets and Investments 3
  6500:656 Management of International Operations 3
  6500:658 Managing a Global Workforce 3
  6500:661 Comparative Systems of Employee and Labor Relations 3

International Business students must ALSO select one of the following options:
1. Foreign Language Option: demonstrate reading and conversational proficiency in a language other than English.
2. Cross-Cultural Option: select one course (3 credits) from the following courses:*
   3250:550 Comparative Economic Systems 3
   3250:560 Economics of Developing Countries 3
   3250:570 International Monetary Economics 3
   3250:671 International Trade 3
   3350:538 World Metropolitan Areas 3
   3350:550 Development Planning 3
   3350:553 Comparative Planning 3
   3400:516 Modern India 3
   3400:573 Latin America: The Twentieth Century 3
   3400:575 Mexico 3
   3700:505 Politics in the Middle East 3
   3700:512 Global Environmental Politics 3

*Cross-cultural courses may be used for free elective credits.

Concentration in International Finance
(64007MBA)
This program prepares students for careers in international finance with emphasis in corporate banking or investment areas. With the globalization of business, international finance has emerged as a major program for students interested in international business operations.
• Required (9 credits):
  6400:581 International Business Finance 3
  6400:691 International Markets and Investments 3
  6400:538 International Banking 3
• Choose three credits from the following:
  6400:631 Financial Markets and Institutions 3
  6400:645 Investment Analysis 3
  6400:650 Techniques of Financial Modeling 3
  6400:678 Capital Budgeting 3
  6400:690 Selected Topics in Finance 3
  6400:697 Independent Study in Finance 3
  6400:698 Independent Study: Business Law 3

Concentration in Leadership and Organizational Change
(65020MBA)
• Required (9 credits):
  6500:651 Management of Organizational Transformation 3
  6500:657 The Leadership Role in Organizations 3
  6500:658 Managing a Global Workforce 3

Concentration in Management
(65000MBA)
• Required (9 credits):
  Choose 9 graduate credits from 6500. No more than 3 credits at the 500 level.
Concentration in Strategic Marketing (66000MBA)

The Strategic Marketing concentration offers an overview of critical marketing functions. The required courses focus on management of information and overall brand identity. Students may choose a professional selling or e-commerce and communication application.

- Required (6 credits):
  - 6600:640 Business Research Methods 3
  - 6600:625 Brand Management 3

- Choose one of the following (3 credits):
  - 6600:635 E-Commerce and Interactive Marketing 3
  - 6600:681 Sales Management 3

*Note: Students should take 6600:640 prior to 6600:625.

Concentration in Supply Chain Management (65020MBA)

Supply chain management (SCM) is the process of planning, implementing, and controlling the operations of the supply chain as efficiently as possible. The overall goal of supply chain management is to impact the organization’s bottom line in a positive way while delivering the best services to customers at the lowest possible cost. Supply chain management professional duties may expand beyond the acquisition of materials, services, and equipment into such areas as planning and policy making, motivation, evaluation, product development, and control. Supply chain management careers include working as a buyer, contract negotiator, inventory manager, import/export goods manager, or a logistics manager.

Students with a Supply Chain concentration may not take more than six credits of 500-level courses.

- Required (9 credits):
  - 6500:675 Global Supply Chain Management 3
  - 6500:677 Supply Chain Sourcing 3
  - 6500:680 Supply Chain Logistics Management 3

Accelerated BS Applied Mathematics/MBA (603001MBA)

After successful completion of this accelerated five year BS/MBA program students will receive a bachelor’s degree in applied mathematics and a master’s of business administration. Students of this program will be supervised by faculty advisers in applied mathematics and advising staff in the College of Business Administration and are expected to finish the core course requirements and most of the electives for the bachelor’s degree in the first three years of the program. Students are asked to formally apply to the accelerated program through the Graduate School during the third year of their bachelor’s degree. Upon acceptance, students will be expected to complete the remaining electives of the bachelor’s degree and the requirements for the CBA flexible MBA program in the last two years of study while registering for at least nine graduate credits in each semester of the last two years of the program. Students will be eligible to apply for a graduate assistantship in these last two years of the program.

- MBA Core Requirements (27 credits)
  - 6200:610 Process Analysis and Cost Management 3
  - 6400:674 Strategic Financial Decision Making 3
  - 6500:601 Business Analytics and Information Strategy 3
  - 6500:652 Managing People in Organizations 3
  - 6500:670 Management of Supply Chains and Operations 3
  - 6500:695 Organizational Strategy 3
  - 6600:620 Strategic Marketing 3
  - 6700:696 Special Topics: Professional Development 1
  - 6700:696 Special Topics: Professional Development 1
  - 6800:605 International Business Environments 3

Special Topics course required are: Leading and Influencing; Professional Integrity; and Negotiation

- Electives chosen from the following courses (9 credits)
  - 3470:569 Reliability Models 3
  - 3470:665 Regression 3
  - 3470:675 Response Surface Methodology 3
  - 3470:562 Applied Regression and ANOVA 4
  - 3470:651 Probability and Statistics 4
  - 3470:652 Advanced Mathematical Statistics 3
  - 3250:527 Economic Forecasting 3
  - 3250:600 Foundations of Economic Analysis 3
  - 3250:627 Econometrics 3
  - 3450:539 Advanced Engineering Mathematics II 3
  - 3450:633 Methods of Applied Mathematics I 3
  - 3450:731 Advanced Numerical Solution of Partial Differential or
  - Other graduate courses (500-level and above) could be used as electives if approved by the Director of the Graduate Program prior to enrolling. Concentration plans must be approved by the Director prior to course selection.

Master of Science in Accountancy (62004MBS: Accounting)

The Master of Science in Accountancy is an advanced professional degree that offers students the opportunity to develop substantive knowledge, skills, and abilities in accounting. The program offers students flexibility to combine their accounting backgrounds with coursework in information systems and finance. It also allows students without undergraduate degrees in accounting to combine their diverse backgrounds with a graduate degree in accounting. Students may pursue a professional accountability option or an accounting information systems option.

Program Learning Goals

Consistent with the School’s mission, students in the program will:

- Develop advanced knowledge and understanding of accounting concepts, the regulatory environment, and professional practice issues and challenges;
- Enhance their critical thinking skills and develop the ability to apply advanced knowledge of accounting concepts, principles and practices in innovative ways;
- Develop the ability to research accounting issues and write research reports that incorporate qualitative and quantitative data analysis and integrate information from multiple sources;
- Demonstrate effective written and oral communication skills;
- Understand and appreciate the role of information technology in contemporary accounting, research, and decision-making; and
- Understand and appreciate the significance of ethics, professionalism, and social responsibility in accounting.

Admission Requirements

The MSA curriculum consists of 30 semester credits. Admission to the program is open to the following individuals:

1. Individuals with undergraduate degrees in accounting from a regionally accredited institution or international equivalent.
2. Individuals with a non-accounting undergraduate business degree from a regionally accredited institution or international equivalent.
3. Individuals with a non-business undergraduate degree from a regionally accredited institution or international equivalent.

All students must earn a satisfactory score on the GMAT in order to be accepted into the program. Students with accounting degrees from AACSB accredited business schools are not required to complete foundation courses provided that they earn an overall GPA in accounting of 2.5 or better. Students who do not satisfy this criterion may be required to complete selected foundation courses specified by the chair of the School of Accountancy.

The Program

Individuals with a non-accounting undergraduate business degree from a regionally accredited institution or international equivalent or individuals with a non-business degree from a regionally accredited institution or international equivalent must complete all Pre-MSA foundation courses and Pre-MSA financial reporting courses listed below. Students who have completed similar courses at the undergraduate or graduate level may apply for waivers. Applications for waivers will be reviewed on a case-by-case basis, considering such factors as the student’s background, work experience, institutional grades earned, and date when similar courses were taken. Documented guidance on sequencing MSA courses available through the School of Accountancy.

- Pre-MSA Foundation Courses (12 credits):
  - All foundation courses must be taken prior to courses in the MSA program. An exception to this policy may be made by the chair of the School of Accountancy for students who have received waivers from foundation courses.
  - 6200:603 Accounting Decision Support Systems 3
  - 6400:602 Managerial Finance 3
  - 6400:623 Legal Aspects of Business Transactions 3
  - 6500:601 Business Analytics and Information Strategy 3

- Pre-MSA Financial Reporting Courses (12 credits):
  - All Pre-MSA Financial Reporting Courses with the exception of 6200:540 (Assurance Services and Professional Responsibilities) must be completed prior to taking courses in the MSA program.
  - 6200:621 Corporate Accounting and Financial Reporting I 3
  - 6200:622 Corporate Accounting and Financial Reporting II 3
  - 6200:610 Process Analysis and Cost Management 3
  - 6200:301 Cost Management and Control or equivalent 3
  - 6200:540 Assurance Services and Professional Responsibilities 3

Students in the MSA must complete a total of 30 credits from the groups of courses listed below. At least 21 credits must be at the 600-level; a minimum of 15 credits must be graduate accounting (6200) courses; and at least 12 credits must be 600-level accounting (6200) courses. Students completing the MSA AIS option must have a minimum of 12 credit hours of accounting information systems (6200:554, 6200:555, and 6200:556).
615, and 659) or management information systems (6500:520, 641, 643, 645, and 678) classes. The chair of the School of Accountancy may approve other courses.

Group A: Accounting and Assurance Core (12 - 15 credits):
- 6200:615 ERP and Financial Data Communications 3
- 6200:637 Contemporary Accounting Issues 3
- 6200:658 Enterprise Risk Assessment and Assurance 3
- 6200:660 Accounting and Assurance Project (capstone course) 3
- 6200:520 Advanced Financial Reporting and Analysis* 3

*All courses in this group are required, except for 6200:520, which is not required for students in the AIS option. Students who have completed a similar advanced accounting course at the undergraduate level must take a different course.

Group B: Taxation Core (3 - 6 credits):
- 6200:627 Federal Taxation 3
- 6200:531 Business Entity Taxation* 3
- 6200:628 Tax Research 3
- 6200:631 Corporate Taxation I 3

*Students are required to take a different taxation course if they have completed the equivalent of 6200:627 or 6200:531. Students are required to complete at least one course but no more than two courses in the taxation core.

Group C: Accounting Electives (0 - 6 credits):
- 6200:554 Information Systems Security 3
- 6200:570 Governmental Accounting 3
- 6200:629 Tax Crimes and Forensics 3
- 6200:659 Assurance Services and Data Mining 3

These electives are open only to students who have not previously completed similar courses.

Group D: Information Systems Electives (0 - 12 credits):
- 6500:520 Management of Data Networks 3
- 6500:643 Analysis and Design of Business Systems 3
- 6500:641 Business Database Systems 3
- 6500:645 Software Development and Quality Assurance 3
- 6500:678 Project Management 3

The Chair of the School of Accountancy may approve or substitute other relevant information systems courses not listed in Group D above. Students pursuing the Accounting Information Systems Option must complete a minimum of 12 credits of information systems courses (i.e., Group D and accounting information systems courses from Group C).

Group E: Finance Electives (0 - 15 credits):
- 6400:581 International Business Finance 3
- 6400:631 Financial Markets and Institutions 3
- 6400:645 Investment Analysis 3
- 6400:674 Strategic Financial Decision Making 3
- 6400:678 Capital Budgeting 3
- 6400:691 International Markets and Investments 3

The Chair of the School of Accountancy may approve or substitute other relevant finance courses not listed in Group E above.

ACCELERATED BS/MS ACCOUNTING (620007/MSA)

The Accelerated BS/MS Accounting (BS/MSA) program allows honors students and other outstanding accounting majors to complete the 150 credits of pre-CPA certification education required by the Accrediting Board of Accountancy of the State of Ohio and earn both a bachelors and masters degree in accounting. Honors and other outstanding students will be targeted as soon as they identify accounting as a major and will be officially accepted into the accelerated program by the start of their senior year.

To receive official acceptance into the program, students must satisfy the following requirements:
- Provide two letters of recommendation from CBA faculty
- Earn at least a B in 6200:301 Cost Management and Control, 6200:320 Accounting Information Systems and Internal Control, 6200:321 Financial Reporting and Analysis I, and 6200:322 Financial Reporting and Analysis II. Students applying for acceptance into this program cannot repeat any of these four courses required for admission to make the minimum grade of a B.
- Earn an overall GPA of 3.0 or higher in accounting courses, in business courses, and in all University of Akron courses
- Apply to be and be accepted into Graduate School by the start of their senior year

BS/MSA students will be monitored closely and be given professional accounting advice through the School of Accountancy. Students must earn and maintain a 3.0 or better GPA (business, accounting, and overall) to stay in the program. Students who are not able to do so will complete the regular bachelor’s program instead of the accelerated BS/MSA program.

All students in the program will complete 30 credits of graduate courses to fulfill the requirements for the masters degree. They will complete nine credits of 500-level graduate courses during their fourth (senior) year and the remaining 21 credits of 600-level graduate courses during their fifth year. The nine credits of 500-level graduate courses will count toward both their graduate and undergraduate degree programs. A total of 150 credits of graduate and undergraduate courses are required to complete the Accelerated BS/MSA program.

BS/MSA students may be eligible for graduate assistantships during their fourth and fifth years of the program only if they are registered for at least nine graduate credits in each semester. Honors students may be eligible for funding from the Honors College during the fourth year and receive a graduate assistantship during the fifth year.

BS/MSA students must complete a total of 30 graduate credits from the following groups of courses listed below. No more than nine credits can be 500-level (6200:5xx) courses. At least 12 credits must be 600-level accounting (6200:6xx) courses.

Group A: Accounting and Assurance Core (12 - 15 credits):
- 6200:615 ERP and Financial Data Communications 3
- 6200:637 Contemporary Accounting Issues 3
- 6200:660 Accounting and Assurance Project (capstone course) 3
- 6200:520 Advanced Financial Reporting and Analysis* 3

*All courses in this group are required, except for 6200:520, which is not required for students in the AIS option. Students who have completed a similar advanced accounting course at the undergraduate level must take a different course.

Group B: Taxation Core (3 - 6 credits):
- 6200:627 Federal Taxation 3
- 6200:531 Business Entity Taxation* 3
- 6200:628 Tax Research 3
- 6200:631 Corporate Taxation I 3

*Students are required to take a different taxation course if they have completed the equivalent of 6200:627 or 6200:531. Students are required to complete at least one course but no more than two courses in the taxation core.

Group C: Accounting Electives (0 - 6 credits):
- 6200:554 Information Systems Security 3
- 6200:570 Governmental Accounting 3
- 6200:659 Assurance Services and Data Mining 3

These electives are open only to students who have not previously completed similar courses.

Group D: Information Systems Electives (0 - 9 credits):
- 6500:520 Management of Data Networks 3
- 6500:643 Analysis and Design of Business Systems 3
- 6500:641 Business Database Systems 3
- 6500:645 Software Development and Quality Assurance 3
- 6500:678 Project Management 3

The Chair of the School of Accountancy may approve or substitute other relevant information systems courses not listed in Group D above. Students pursuing the Accounting Information Systems Option must complete a minimum of 12 credits of information systems courses (i.e., Group D and accounting information systems courses from Group C).

Group E: Finance Electives (0 - 9 credits):
- 6400:581 International Business Finance 3
- 6400:631 Financial Markets and Institutions 3
- 6400:645 Investment Analysis 3
- 6400:674 Strategic Financial Decision Making 3
- 6400:678 Capital Budgeting 3
- 6400:691 International Markets and Investments 3

The Chair of the School of Accountancy may approve or substitute other relevant finance courses not listed in Group E above.

MASTER OF TAXATION (620002MT)

The Master of Taxation (MTax) Program is a professional degree designed to provide intensive training for individuals with an interest in developing specialized skills in the area of taxation. The program is intended for practicing accountants and attorneys who wish to further or pursue a career in taxation. However, other individuals with a four-year degree in business or accounting from a regionally accredited institution of higher learning (or international equivalent) may also find the program valuable and manageable. The program offers substantive technical and professional knowledge, skills, and abilities needed to function as a taxation specialist in the United States.

Students in the program will:
- develop substantive and comprehensive knowledge of federal taxation;
- understand the state and local taxation regimes of selected states, including the State of Ohio;
- develop abilities to research taxation issues, identify and solve taxation problems, and plan taxation strategies;
- develop the ability to contribute as a taxation specialist to strategic planning and decision-making in organizations;
- demonstrate effective written and oral presentation skills; and
- demonstrate ability to use information technology for researching and solving taxation problems.

The MTax curriculum consists of 30 semester credits. Admission to the program is open to the following individuals:

1. Certified Public Accountants and other accountants with equivalent credentials with at least a bachelor’s degree.
2. Individuals with an undergraduate degree in accounting from a regionally accredited institution or international equivalent.
3. Individuals with a JD.
4. Individuals who plan to pursue the joint JD/MTax degree (JD students must complete the first year of law school if full-time or the second year of law school if part-time before they can take courses in the MTax program).
5. Individuals with an undergraduate degree in business from a regionally accredited institution or international equivalent.
6. Other individuals who demonstrate a high potential to succeed in the MTax program (based on GMAT scores, undergraduate GPA, letters of recommendation, and prior work experience) and who have earned at least a B average in 6200:601 Financial Accounting (or equivalent) and 6200:627 Federal Taxation (or equivalent).

Students who have at least two years of work experience and have an accounting certification (i.e., CPA, CMA, CIA, etc.) or have successfully passed the bar exam do not need to take the GMAT exam to be admitted to the program. All other students must earn a satisfactory score on the GMAT (LSAT for law students) prior to being admitted to the program. Foundation courses are not required for individuals in Categories 1 and 2.

Individuals in categories 3 and 5 must complete an introduction to financial accounting course and a federal income taxation course before they begin taking MTax courses. These courses may be taken at the graduate or undergraduate level. Students should plan to complete those courses in the summer or earlier prior to starting the required MTax courses.

Students are encouraged to begin the program in the fall. Full-time students who begin the program in fall will normally complete all requirements for graduation in two semesters. Part-time students who start in fall can complete all requirements for graduation within two years.

- **Required Master of Taxation Courses:**
  - 6200:628 Tax Research 3
  - 6200:631 Corporate Taxation I 3
  - 6200:632 Taxation of Transactions in Property or 9200:721 Taxation of Intellectual Property 3
  - 6200:641 Taxation of Partnerships 3
  - 6200:648 Tax Practice and Procedure 3
  - 6200:643 Tax Accounting 3
  - 6200:649 State and Local Taxation 3
  - 6200:651 International Taxation 3

- **Total Credits of Required Courses:** 24
- **Required Taxation Electives:**
  - Any 6500:6xx course 3
- **Total Credits Required for MTax:** 30

**Free Elective (3 credits):**
- Any 6500:6xx course

### Supply Chain Management Option (SCM) (650205MSM)

The Master of Science in Supply Chain Management is offered for students wanting to pursue an advanced program of study in Supply Chain Management. The Master of Science in SCM requires students to take focused courses in Supply Chain Management and related areas. The program of study is also shorter compared to the broader-based MBA program and can ideally be completed in two regular semesters of study. The program requires completion of 30 credits of coursework, which includes six credits of foundation core, 21 credits of required coursework, and three credits of electives. Foundation core courses may be waived if the student has completed prior study in that area, and those students will be required to complete 21 credits of required coursework and nine credits of elective courses.

- **Foundation Core Courses (6 credits):**
  - 6200:601 Financial Accounting 3
  - 6600:620 Strategic Marketing Management 3
- **Management Core Courses (12 credits):**
  - 6500:601 Business Analytics and Information Strategy 3
  - 6500:652 Managing People in Organizations 3
  - 6500:675 Global Supply Chain Management 3
  - 6500:678 Project Management 3

## Master of Science in Management

### The Master of Science in Management Program

The Master of Science in Management program allows students to concentrate their advanced study in one of two areas: Information Systems Management or Technological Innovation. Because of the complex nature of these specializations, they are not normally offered as options in traditional MBA programs. They are designed for individuals who know what they want to do or to help them apply what they already know more effectively. For example, computer science majors may choose to concentrate in information systems while engineering majors would benefit from the technological innovation option.

The introductory coursework for this program is termed a foundation core and consists of 6 credits which may be waived if the student has completed prior study in the area. The remaining 30 credits of coursework consists of 12 credits of specialization coursework and 6 credits of electives. If all foundation courses are waived, the program is 30 credits in length. Students may waive the GMAT requirement if they have an acceptable GRE score and have two years of documented business experience.

- **Foundation Core (6 credits):**
  - 6200:601 Financial Accounting 3
  - 6600:620 Strategic Marketing Management 3
- **Management Core Courses (12 credits):**
  - 6500:601 Business Analytics and Information Strategy 3
  - 6500:652 Managing People in Organizations 3
  - 6500:675 Global Supply Chain Management 3
  - 6500:678 Project Management 3

### Information Systems Management (ISM) (650044MSM)

- **Information Systems Management Core Courses (12 credits):**
  - 6500:640 Information Systems and IT Governance 3
  - 6500:641 Business Database Systems 3
  - 6500:643 Analysis and Design of Business Systems 3
  - 6500:644 Knowledge Management and Business Intelligence 3

*Note: 6500:601 will be a prerequisite for 6500:641, 6500:643, and 6500:644.*

### Electives - take any of the following (6 credits)
- 6500:554 Information Systems Security 3
- 6500:520 Management of Data Networks 3
- 6500:645 Software Development and Quality Assurance 3
- 6500:651 Management of Organizational Transformation 3
- 6700:695 Internship in Business 1-3

### Human Resource Option (HRM) (650055MSM)

*(Admission to the Human Resource Option of the Master of Science in Management degree program has been suspended effective Fall 2011 until further notice)*

- **Management Core Courses (12 credits):**
  - 6500:640 Information Systems and IT Governance 3
  - 6500:652 Managing People in Organizations 3
  - 6500:663 Data Analysis for Managers 3
  - 6500:675 Global Supply Chain Management 3
- **HRM Required Concentration Courses (15 credits):**
  - 6500:650 Human Resource Systems for Managers 3
  - 6500:651 Management of Organizational Transformation 3
  - 6500:654 Management of Organizational Conflict 3
  - 6500:658 Managing a Global Workforce 3
  - 6500:660 Staffing and Employment Regulation 3
- **HRM Restricted Electives (select 3 credits):**
  - Any 6500:6xx course

### Technological Innovation (650205MSM)

- **Technological Innovation Core Courses (12 credits):**
  - 6500:665 Management of Technology 3
  - 6500:608 Entrepreneurship 3
  - 6500:651 Organizational Transformation 3
  - 6400:602 Managerial Finance 3
• Electives - take any two of the following (6 credits)
  6500:645 Software Development and Quality Assurance 3
  9200:700 Introduction to Intellectual Property Law 3
  6700:695 Internship in Business 1-3
  6200:554 Information Systems Security 3
  6400:623 Legal Aspects of Business Transactions 3
  6500:685 Bioinnovation and Design 3

**Accelerated MSM - ISM Program Option (650204MSM)**

The MSM - Fast track Information Systems option has been designed for students in undergraduate information systems or related programs who are interested in pursuing graduate work with an information systems management emphasis. Additional requirements for students wishing to pursue this option include:

• Undergraduate degree in Information Systems (from AACSB accredited institution) or related fields with a Pre-MBA minor
• Undergraduate GPA of at least 3.0 with successful course completion in programming, database, and networking (B or better)
• Documented completion of an IS related internship (or other IS work experience) with a letter summarizing project and work scope from supervisor
• Letters of reference from undergraduate program director or faculty
• Undergraduate students who wish to count 6200:554 and 6500:520 toward their graduate degree may take these classes during their senior year and must receive a grade of B or better. These classes must be taken exclusive of students requirements toward the baccalaureate degree.

• Undergraduate degree must be completed at the most two years prior to planned date of program entry

Management Core Courses (9 credits)
  6500:601 Business Analytics and Information Strategy 3
  6500:675 Global Supply Chain Management 3
  6500:678 Project Management 3

Information Systems Core (12 credits)
  6500:640 Information Systems and IT Governance 3
  6500:641 Business Database Systems 3
  6500:643 Analysis and Design of Business Systems 3
  6500:644 Knowledge Management and Business Intelligence 3

*Note: 6500:601 will be a prerequisite for 6500:641, 6500:643, and 6500:644.*

Practicum (3 credits) Choose one from the following:
  6500:690 Selected Topics in Management 3
    (This course may be taken as an elective to add a Global or Study Abroad experience)
  6700:695 Internship (see below for guidelines) 3

Electives (6 credits)
  6500:520 Management of Data Networks 3
    (May be applied toward the program if taken as an undergraduate senior and did not apply toward the baccalaureate degree)
  6200:554 Information System Security 3
    (May be applied toward the program if taken as an undergraduate senior and did not apply toward the baccalaureate degree)
  6500:645 Software Development and Quality Assurance 3
  6500:651 Management of Organizational Transformation 3
  6500:652 Managing People in Organizations 3
    (Recommended for students with an undergraduate degree in a non-Business field)

Total: 30

Guidelines for receiving credit for the Information Systems Internship:

• Students are required to work at least 20 hours per week
• Internship must be approved by the Department Chair
• Internships will be approved based on the type of business and the scope of work to be done
• Interns will complete the report based on MIS faculty specifications
• The internship should be in an area directly related to any of traditional Information Systems functions related to systems planning, analysis, design, programming, implementation, networking operations and infrastructure, technical documentation, systems installation, maintenance, and IT auditing.

**Joint Programs**

The School of Law and the College of Business Administration (CBA) offer a joint program in legal and administrative studies (J.D./M.B.A.), a joint program in legal and taxation studies (J.D./M.Tax.) and a joint program in legal and human resource studies (J.D./M.S.M). These combinations are open to the student preparing for a career in such areas as corporate law, tax accounting, human resource management or legal practice in government. The amount of time required to complete a joint degree program is shorter than the time required to complete both programs independently. To pursue either one of these cooperative programs, the student must apply to and be accepted by both the School of Law and the Graduate School. The student should contact each school independently for information covering admission criteria and procedures (for further information on School of Law admissions, write: Director of Admissions, School of Law. The University of Akron, Akron, OH 44325-2901). A baccalaureate degree is required.

**Degree Requirements**

A student is required to fulfill the requirements of the School of Law, 87 credits, which includes up to nine credits transferred from the CBA. The requirements of the CBA may be met by fulfilling the requirements previously listed which include the common body of knowledge (Gateway) courses (unless waived because of prior under-graduate credits earned), and 27 credits for M.B.A. advanced courses in the CBA plus nine credits transferred from the School of Law. The Master of Taxation program consists of 21 credits of advanced courses in the CBA plus 9 credits transferred from the School of Law. The reciprocal acceptance of course credits by each school is the essence of the joint programs. All law courses used to fulfill CBA requirements must be approved by the director of Graduate Programs in Business prior to completion. To earn both degrees, a total of 98 (J.D./M.Tax.) or 105 (J.D./M.B.A.) credits is required, depending on the master’s program pursued. More credits may be required for the master’s degree if Foundation courses are required.

Upon the approval of the director of Graduate Programs in Business, up to nine credits of School of Law courses may be applied toward the Masters of Taxation degree. Law courses from the following list may be applied to the MTax program:

  9200:641 Corporate Taxation I (3 credits)
  9200:721 Taxation of Intellectual Property (3 credits)

Other courses offered in the School of Law as approved by the Chair of the School of Accountancy and the MTax program coordinator:

Courses that will transfer as MTax elective courses:

  9200:639 Estate and Gift Taxation (3 credits)
  9200:645 Non-profit Tax Entities (3 credits)
  9200:675 Special Problems in Estate Planning (3 credits)
  9200:680 Qualified Pension and Profit Sharing Plans (3 credits)
  9200:684 Entities (3 credits)
  9200:685 Wills, Trusts, and Estates I (3 credits)
  9200:686 Wills, Trusts, and Estates II (3 credits)
  9200:684 Mergers and Acquisitions (3 credits)

Other courses offered in the School of Law as approved by the Chair of the School of Accountancy and the MTax program coordinator:

J.D./M.B.A. students may transfer up to nine credits of School of Law courses into the M.B.A. program. Up to nine credit hours may be in their area of concentration and must be selected from the courses listed below. Related courses not listed under concentrations may transfer with approval of the director of graduate programs in Business Administration.

**Law Courses to be used as MBA Concentration Courses**

Interdisciplinary Concentration (choose 9 credits)

Students may devise a personalized concentration consisting of any nine credits of the law courses listed for the concentrations. The choice of courses for the Interdisciplinary Concentration must be approved by the director prior to enrolling in the courses. Students must provide a career-related, programmatic rationale for the personalized concentration they have devised. If a joint degree student wishes to pursue one of the other MBA concentrations he/she is permitted to do so and should contact the Director of Graduate Programs for additional information.

**Law Courses to be used as MSM-HR Concentration Courses**

(Admission to the Human Resource Option of the Master of Science in Management degree program has been suspended until further notice therefore the MSM-HR concentration is not available effective Fall 2011)

  9200:637 Employment Discrimination
  9200:642 Alternative Dispute Resolution
  9200:651 Employment Law
  9200:659 Negotiations
  9200:684 Human Resources Lawyer
College of Health Professions

Robert DePompei, Ph.D., Interim Dean

Organization
The College of Health Professions, established in 2012, comprises four schools: the School of Nursing; the School of Nutrition and Dietetics; the School of Social Work; and the School of Speech-Language Pathology and Audiology.

The college places a premium on learning by doing. Students work side by side with talented and caring faculty members and professionals throughout the community. The college focuses on graduating students prepared to excel as professionals in an evolving health care environment. Highly collaborative and interprofessional, this new college will be a model for health education and research in this region and beyond.

DOCTORAL DEGREE PROGRAMS

Doctor of Audiology Program (Au.D.) (H70200AUD)
The Au.D. is a four-year post baccalaureate professional doctoral degree program. Doctors of Audiology are independent professionals who specialize in the diagnosis, management, and treatment of hearing and balance disorders.

The Au.D. program, which is known as the Northeast Ohio Au.D. Consortium (NOAC), is a joint degree program administered by The University of Akron and Kent State University. NOAC is a single unified program of faculty, students, facilities, and resources. Students take classes and participate in clinic at both The University of Akron and Kent State University with half of the classes offered at each university. Students must choose to be admitted to NOAC either through The University of Akron or Kent State University and they will register for courses on the campus where they are admitted. All classes are cross-listed.

Admission Requirements
• Bachelor’s degree from an accredited college or university
• Grade point average of 3.0 or higher
• Three letters of recommendation
• Graduate Record Examination scores
• Personal statement of purpose as to why the applicant wishes to become an audiologist

All application material must be received by February 1.

Degree Requirements - Doctor of Audiology
The Au.D. curriculum is a continuous 48 month post-baccalaureate course of study designed to integrate classroom, laboratory, and clinical experiences. All students will attend full-time and take the same courses in appropriate sequence. The emphasis of the program is on the principles and practices underlying evaluation, treatment, and provision of hearing care services.

For progression and graduation, students must meet the following degree requirements:
• Maintain an overall grade point average of 3.0
• Complete a minimum of 120 semester credits
• Accruce 2000 clock hours of clinical experience
• Meet the requirements for Ohio licensure in Audiology
• Pass academic and clinical competency-based examinations

* Students are required to register for two semesters of 7700.731 Fourth Year Seminar

Doctor of Philosophy in Nursing (820000PHD)
The University of Akron and Kent State University offer a Ph.D. in Nursing, a single doctoral program with a single, unified doctoral nursing faculty and doctoral student body. The diploma will be issued from the student’s university of record and will recognize the Joint Doctor of Philosophy program. Courses will be cross listed and scheduled at each university.

Preparation Purpose and Description: Preparation of Scholars in Nursing
The Ph.D. in Nursing program is characterized by excellence through scholarship, integrity, and caring. The primary purpose of the program is to prepare nurse scholars. This purpose will be realized through: the development and testing of theories and models of nursing science and nursing practice, the consideration of the social, political, legal, and economic implications of health care policies and practices, and the dissemination of knowledge.

Graduates will be characterized by their leadership and their ability to conduct and apply research, to integrate and extend knowledge through teaching, and to develop and implement health care policy. Interdisciplinary collaboration and community outreach will be emphasized throughout the program.

Admission, Progression, and Graduation
Students may apply to the program through the Graduate School at The University of Akron or the Graduate College or School of Nursing at Kent State University. Completed applications should be returned to the addresses indicated on the application forms. Applications are accepted on a rolling basis and will be reviewed by the admissions committee.

Each applicant for admission into the Ph.D. in Nursing Program must meet the following criteria:
• Evidence of successful completion of a master’s degree in nursing at an accredited program with a minimum graduate grade point average of 3.0 on a 4.0 scale.
• Evidence of current licensure, or eligibility for licensure, by the Ohio Board of Nursing.
• Official evidence of scores on the Graduate Record Examination.
• A clear and succinct statement about the applicant’s need for the doctorate and its application toward clearly defined career goals.
• A sample of written work that indicates the logic and writing skills of the applicant, for example, by an essay, term paper, thesis, published article, or professional report.
• Three (3) letters of reference from professionals or professors who can adequately evaluate the applicant and the applicant’s previous work or potential for success.
• At the request of the admission committee, successfully complete a personal interview with a graduate faculty member which will assess research interests and motivation for successful completion of doctoral study.
• Register for courses within one (1) year of acceptance into the program, or otherwise the acceptance is void.

Students wishing to transfer into the Ph.D. in Nursing Program must comply with the university standards for acceptance and are referred elsewhere in this catalog for that information.

7700.717 Pediatric Audiology 3
7700.719 Counseling in Audiology 3
7700.721 Evaluation and Management of Balance Disorders 3
7700.722 Medical Management of Auditory Disorders 2
7700.726 Electrophysiological Techniques in Audiology 3
7700.727 Multicultural Issues in Audiology 2
7700.728 Seminar in Audiology 2
7700.730 Practice Management in Audiology 3
7700.731 Fourth Year Seminar* 1
7700.731 Fourth Year Seminar 1
7700.732 Audologic Treatment Across the Lifespan 4
7700.734 Principles of Precepting 1
7700.747 Graduate Audiologist I 3
7700.748 Graduate Audiologist II 3
7700.749 Graduate Audiologist III 6
7700.750 Graduate Audiologist IV 8
7700.751 Graduate Audiologist V 8
7700.752 Clerkship I 1
7700.753 Clerkship II 1
7700.754 Internship I 1
7700.755 Internship II 1
7700.756 Internship III 2
7700.757 Internship IV 2
7700.758 Implantable Technology 4
7700.760 Hearing Aids Across the Lifespan 4
7700.761 Advanced Electrophysiologic and Vestibular Measures 4

* Students are required to register for two semesters of 7700.731 Fourth Year Seminar
International students will be considered for admission. In addition to the above admission criteria, international students must demonstrate a high level of competence in English, a minimum score of 550 on the Test of English as a Foreign Language (TOEFL). International students must comply with university procedures for accepting international students.

Students will be assigned an academic advisor based on mentoring and mutual research interests. Advisor and student will develop an academic program plan customized to student interest, subject to advisor approval. Target dates for successfully completing the qualifying examination and the completion of the dissertation will be developed early in the program plan. Students may change advisors for academic or dissertation purposes, subject to the approval of the program directors. For progression and graduation, students must meet the following degree requirements:

- maintain an overall grade point average of 3.0 on a four-point scale (or be able to dismiss according to University policies);
- adhere to criteria concerning enrollment, residency, and leaves of absence;
- complete degree requirements within 9 years of enrollment;
- complete 42 semester hours of required course work;
- successfully complete the written preliminary examination after first year of full-time coursework and/or 24 credits, qualifying examination, and dissertation requirements;
- successfully complete and orally defend a dissertation based upon original investigation and critical scholarship.

Students who do not meet the criteria for successful progression and graduation will be notified in writing.

Program Description and Curriculum

The Ph.D. in Nursing is a post master's degree, requiring 72 semester credit hours including the dissertation. It consists of five components, with selected customization to student interests. The nursing knowledge component examines knowledge and theory development as well as courses in selected domains of nursing knowledge related to student interest and faculty expertise. Research methods, designs, and statistics examines approaches to both qualitative and quantitative research. Students must select at least one advanced research methods course to promote their research agenda: i.e., program evaluation, advanced qualitative or quantitative methods, or grantmanship. Cognates will be chosen from courses outside nursing which support the student's research interest. Health care policy courses focus on health care and nursing issues. These four components culminate into the fifth component, the dissertation, which follows the successful completion of the qualifying examination. The course work in each of these five components follows.

Structure and content of nursing knowledge:

Five required courses (15 credits)
8200:810 History and Philosophy of Nursing Science 3
8200:815 Theory Construction and Development in Nursing 3
8200:820 Introduction to Nursing Knowledge Domains 3
8200:840 Nursing Science Seminar I 3
8200:850 Nursing Science Seminar II 3

Research methods, designs, and statistics:

Four required methods/design courses (12 credits)
8200:824 Foundations of Scholarly Inquiry in Nursing 3
8200:825 Quantitative Research Methods 3
8200:830 Qualitative Research Methods 3
8200:845 Advanced Methods for Research 3

(1 advanced nursing research methods course selected with the approval of the student's academic advisor.)

Two required statistics courses (6 credits)
8200:827 Advanced Health Care Statistics I 3
8200:837 Advanced Health Care Statistics II 3

Cognates:

Two required courses (6 credits)
8200:882 Field Experience in Nursing 1-12
8200:885 Special Topics in Nursing 1-6
8200:886 Individual Investigation in Nursing 1-3
8200:888 Research in Nursing 1-15

Health Care and nursing policy:

One required course (3 credits)
8200:835 Nursing and Health Care Policy 3

Doctoral dissertation

30 credit hours required
8200:899 Doctoral Dissertation 30

Students who need more than 30 credit hours to complete the dissertation will enroll in 8200:800 Doctoral Dissertation II.

Qualify for Candidacy for the Doctoral Dissertation

- All students in the program are required to successfully complete a qualifying examination before proceeding to conduct dissertation research. To be eligible for candidacy for the dissertation, students must have completed 42 hours of required courses, have maintained a minimum GPA of 3.0 on a 4.0 scale in the doctoral program, have successfully completed the qualifying examination, and have been approved by the appropriate administration officials of the program.
- Dissertation Prospectus. The dissertation prospectus is a written document that includes an outline of the parameters of the projected dissertation topic with a rationale and statement of the problem to be researched, the methodology and design of the study, a preliminary review of the literature substantiating the need for the study, and the principle sources of information for the dissertation. Approval of the prospectus permits the student to proceed with the dissertation.
- Dissertation. The dissertation is based upon original investigation and demonstration of mature scholarship and critical judgment in the theoretical and methodological approaches to development of nursing knowledge. The dissertation is expected to be the first step in the development of a program of research and scholarly activity. A minimum of 30 dissertation credit hours are required.
- Oral defense. When the dissertation is completed a meeting will be scheduled for the student's defense of the dissertation. The candidate is expected to respond to substantive and methodological questions related to the dissertation.
- Dissertation committee. A four person doctoral dissertation committee will guide and approve the acceptance of the dissertation. The Chair must be a member of the Nursing Ph.D. faculty, as must be two committee members. The remaining member must be selected from outside the program. Other qualifications of members will be consistent with the student's area of research and with the requirements for doctoral committees as stated in the policies and general catalogs of both universities.

Innovative Curriculum Pathways to the Ph.D. in Nursing Program for BSN Graduates and for Students Enrolled in MSN Option

The Innovative Pathways into the Ph.D. in Nursing Program is an accelerated program that allows individuals with a BSN and students enrolled in the RN-MSN program direct admission into the program. Acceleration is accomplished by restructuring MSN and Ph.D. curricula to recognize the mastery of specific content, thereby facilitating graduate study. There are two pathways: one for BSN graduates and one for RN-option students. Since existing acceleration pathways differ at The University of Akron and Kent State University, individuals applying for admission to this program must apply for admission through the Graduate School of The University of Akron.

BSN Graduates:

BSN students within one semester of graduation and professional nurses with a BSN degree may apply in December prior to the fall in which admission is desired. Admission criteria include:

- Enrollment in an accredited BSN program within one semester of graduation or the BSN degree.
- Provide evidence of successful completion (or the potential to complete the BSN by the following fall semester) of a baccalaureate degree program in nursing at an accredited school with a minimum grade point average of 3.0 on a 4.0 scale.
- Provide evidence of current licensure, or eligibility for licensure, by the Ohio Board of Nursing.
- Provide evidence of acceptable scores on the Graduate Record Examination.
- Submit a statement about nursing career interests and goals.
- Give a sample of written work. This may include, for example, a scientific term paper, a research paper, an honor's project, a professional report, or a published article.
- Submit three (3) letters of recommendation from professors or other professionals who can adequately evaluate previous work and potential for success in the Ph.D. program. One of the three letters must be from a Doctoral Faculty Council member who has worked closely with the student.
- Satisfactorily complete a personal interview with a Doctoral Faculty Council member.
- Register for full-time study during the fall semester after acceptance into the Ph.D. program, or otherwise the acceptance is void.
- Enroll in full-time study for four calendar years for students who are entering directly from the BSN program or full-time study for two academic years plus two calendar years for post-BSN applicants.

Students receive a maximum of 12 credit hours of by-passed credit for master's level courses after successfully completing 12 credit hours of doctoral level courses. Bypass credit is given in accordance with applicable University of Akron policy.

Upon successful completion of 8200:815, 8200:825, 8200:830, and 8200:835, students receive a maximum of 12 hours of by-passed credit for master's level courses.

Graduate Studies 75
Internship: Students entering directly from the BSN program will be required to complete two 10-week internships with the Co-op program (paid positions).

- Internship in generalist practice during Summer Session I
- Internship in advanced nursing practice during Summer Session II

MSN-Option Students:
Currently enrolled RN-option students at The University of Akron may apply for admission following completion of the RN-option bridge courses. Admission criteria include:

- Enrollment in The University of Akron RN-option program.
- Minimum grade point average of 3.0 on a 4.0 scale for all previous coursework.
- Provide evidence of current licensure, or eligibility for licensure, by the Ohio Board of Nursing.
- Provide evidence of current malpractice insurance.
- Provide evidence of acceptable scores on the Graduate Record Examination.

- Submit a statement about nursing career interest and goals.
- Give a sample of written work. This may include, for example, a scientific term paper, a research paper, an honor's project, a professional report, or a published article.
- Submit three (3) letters of recommendation from professors or other professionals who can adequately evaluate previous work and potential for success in the Ph.D. program. One of the three letters must be from a Doctoral Faculty Council member who has worked closely with the student.
- Satisfactorily complete a personal interview with a Doctoral Faculty Council member.
- Register for full-time study during the fall semester after acceptance into the Ph.D. program, or otherwise the acceptance is void.

Students enrolled in The University of Akron RN-Option receive a maximum or six (6) by-passed credits after successfully completing six credit hours of doctoral level courses. By-passed credit is given for Nursing Inquiry I (8200:613) and Nursing Inquiry II (8200:618) after the student successfully completes Quantitative Research Methods (8200:825) and Qualitative Research Methods (8200:830) in accordance with applicable University of Akron policy. Students admitted to this innovative pathway are required to take the RN-BSN research course 8200:436, rather than receive by-passed credits for it.

Professional Doctor of Nursing Practice
(820000DNP - Post MSN DNP)

Admission Requirements
- Current State of Ohio license to practice nursing.
- An undergraduate cumulative grade point average of 3.0 on a 4.0 scale (post-BSN applicants). Post-MSN applicants must have earned a master's degree from an accredited university with a cumulative grade point average of 3.0 on a 4.0 scale.
- Three letters of recommendation from individuals who can address the applicant's potential to succeed in the DNP graduate program and who can attest to clinical expertise.
- A pre-admission interview, by telephone or in person, with the concentration program director. The interview is used to establish a fit between student goals and the desired School of Nursing graduate concentration as recommended by the interviewer(s).
- A 300 word essay describing professional goals and reasons for seeking the particular specialty concentration.

Applications to the Doctor of Nursing Practice are accepted on a rolling basis.

Development of the curriculum is structured by four broad areas of knowledge described in the AACN's Essentials of Doctoral Education for Advanced Practice Nursing (2006). Acquisition of knowledge within the areas of Scientific/Physiologic Foundation for Advanced Evidence Based Practice; Leadership Information Management; Practice Inquiry; and Advanced Specialty Practice, will be demonstrated by the student's development of essential competencies. The following outcome competencies are expected.

Graduates of the program will:

- Use appropriate theories and concepts to identify health-related phenomena of interest.
- Design and deliver interventions that can withstand scientific analysis.
- Evaluate health care delivery and nursing practices using sound evaluation principles.
- Use evaluation and other methods to account for quality of care and patient safety for focus populations.
- Critically appraise and/or use sources informing best evidence, i.e. epidemiology, statistics, health data, and/or methodologies.
- Deliver and evaluate care processes and outcomes based on best evidence.
- Analyze and define critical choices among health care technologies and information systems toward the betterment of care processes and outcomes.
- Understand the dynamics of health care policy and financing at the organizational and national levels.
- Provide or assist in the leadership of collaborative, inter-professional teams in health care delivery.

Program Description
The University of Akron Professional Doctor of Nursing Practice (DNP) program requires a minimum of 71 graduate credit hours and 1,040 clinical hours for those students entering with a baccalaureate in nursing degree from an accredited program. Post-master's entry requires: a) 37 credits of DNP core courses; b) 540 clinical practice hours; and c) transfer from the student's master's degree in nursing program a minimum of 34 credits of nursing and advanced practice role-specific coursework, which includes 500 clinical hours (or is taken as part of the DNP program).

Core Courses (20 credits):
8200:603 Theoretical Basis for Nursing 3
8200:607 Policy Issues in Nursing 2
8200:608 Pathophysiological Concepts of Nursing Care 3
8200:612 Advanced Clinical Pharmacology 3
8200:613 Nursing Inquiry I 3
8200:616 Nursing Inquiry II 3
8200:690* Advanced Health Assessment 3

Speciality Courses (12-34 credits):
8200:708 Capstone Project I 1-3
8200:708 Capstone Project I 2-6
8200:700 Information Management in Healthcare 3
NURS70602 (KSU) Advanced Leadership in Healthcare 3
NURS70640 (KSU) Advanced Leadership in Healthcare 3
8200:705 Clinical Scholar I 3
8200:706 Clinical Scholar II 4
8200:707 Clinical Scholar Residency 3
8200:708 Capstone Project I 2-6
8200:708 Capstone Project I 1-3

*8200:610, 611, or 650 (Appropriate to specialty track)

Specialty Courses vary according to the particular current MSN advanced practice concentration (includes 500-700 clinical hours).

DNP Courses (minimum of 37 credits and includes 540 clinical hours):
8200:627/KSU NURS 7027 Advanced Healthcare Statistics 3
8200:709/KSU NURS 7028 Advanced Clinical Statistics 3
8200:709/KSU NURS 7029 Advanced Clinical Research Methods 3
8200:710 Advanced Seminar in Clinical Genomics and Health 3
8200:700 Information Management in Healthcare 3
NURS70640 (KSU) Advanced Leadership in Healthcare 3
NURS70640 (KSU) Advanced Leadership in Healthcare 3
8200:705 Clinical Scholar I 3
8200:706 Clinical Scholar II 4
8200:707 Clinical Scholar Residency 3
8200:708 Capstone Project I 2-6
8200:708 Capstone Project I 1-3

MASTERS DEGREE

Nutrition and Dietetics
(HA0103MSND)

A program of study is offered leading to the Master of Science in Nutrition and Dietetics. Students must meet the following admission requirements for acceptance in the program:

- Meet the minimum GPA of 2.75 for four years of undergraduate study or 3.00 for the last two years of undergraduate study.
- Completion of general Graduate Record Examination within the five years preceding application, with the following score:
  - 800 combined on verbal and quantitative with at least a 4.0 on analytical writing;
  - 900 combined on verbal and quantitative with at least a 4.0 on analytical writing;
- Three letters of recommendation
- Statement of purpose
- Resume

The graduate faculty of the School of Nutrition and Dietetics may require an interview with any applicant.

Application materials must be received by March 1 for fall enrollment and by October 1 for spring enrollment.

In addition to the above, the student will be expected to comply with the following requirements:

- Complete the course of study with a minimum of 40 credits. These credits will include:
  - foundation courses to prepare the student for research in nutrition as a discipline;
– electives selected from within the department or from another discipline to strengthen student’s professional goals. These courses will be selected in consultation with and approval from the student’s graduate faculty advisor.

• Pass a written comprehensive examination over major and minor areas after the completion of at least 19 credits of graduate work.

• Complete a thesis or a project. The thesis option involves the design and evaluation of original research in an appropriately related area commensurate with the student’s background and area of pursuit. The project option involves the design, development, implementation and evaluation of original and creative programs and/or resource materials. A written proposal for the thesis or project option cannot be submitted until the successful completion of a comprehensive examination.

• Pass an oral examination covering the thesis or project.

Foundation Courses (13 credits required)

7760:604 Orientation to Graduate Studies in Health Professions 1
7760:624 Advanced Human Nutrition I 3
7760:625 Advanced Human Nutrition II 3
7760:680 Current Issues in Nutrition 3
7760:685 Research Methods in Health Professions 3

Electives (9 to 12 credits required)

At least 2 courses must be selected from Biology (3100), Chemistry (3150), Nursing (8200), Exercise Physiology (5550), or Nutrition (7760). If course was taken at the undergraduate level, it may not be used at the graduate level. Students are not limited to the following course selections, however, advisor approval is required.

3100:565 Advanced Cardiovascular Physiology 3
3150:501 Biochemistry Lecture I 3
3150:502 Biochemistry Lecture II 3
3230:520 Anthropology of Food 3
5550:605 Physiology of Muscular Activity and Exercise 3
7700:632 Dysphagia 3
7760:524 Nutrition in the Life Cycle 3
7760:580 Community Nutrition I - Lecture 3
7760:582 Community Nutrition II - Lecture 3
7760:587 Sports Nutrition 3
7760:588 Practicum in Dietetics 1-3
8200:561 Advanced Physiological Concepts in Health Care I 3
8200:562 Advanced Physiological Concepts in Health Care II 3
8200:608 Pathophysiology Concepts of Nursing Care 3
8200:612 Advanced Clinical Pharmacology 3

Cognate Electives (8 to 11 credits required)

Select with the approval of advisor from among the following or other courses that strengthen the student’s goals.

3470:664 Statistics for the Health Sciences 4
3850:656 Sociology of Health Care 3
3850:678 Social Gerontology 3
5600:651 Techniques of Counseling 3
6500:580 Introduction to Health Care Management 3
6500:652 Managing People in Organizations 3
7400:501 American Families in Poverty 3
7760:500 Nutrition Communication and Education Skills 3
7760:503 Advanced Food Preparation 3
7760:528 Nutrition in Medical Sciences II 3
7760:543 Nutrition Assessment 3
7760:610 Management of Food Systems 3
7760:616 Clinical Nutrition

Thesis or Project (select one)

7760:694 Master’s Project 5
7760:699 Master’s Thesis in Health Professions 5

Minimum credits required 40

Note: The M.S. in Nutrition and Dietetics is not a route to becoming a Registered Dietitian (R.D.). Students interested in becoming R.D.s should contact the School for proper course selection, some of which can be done at the graduate level.

Food and Consumer Science Option (H40102MA) (admissions temporarily suspended)

• Core Courses:
  7400:575 Analysis of Food 3
  7760:576 Developments in Food Science 3
  7400:520 Experimental Foods (if taken at the undergraduate level, choose 3 additional credits from option electives) 3

• Option Electives:
  Select 9-12 credit hours with the approval of advisor from among the following (if course has been taken at the undergraduate level, other courses must be selected):
  3100:500 Food Plants 2
  3250:540 Special Topics: Economics/World Food Problems 4
  7760:574 Cultural Dimensions of Food 3
  7760:585 Seminar in Family and Consumer Sciences (Food Science topic) 2-3
  7760:570 The Food Industry: Analysis and Field Study 3
  7760:503 Advanced Food Preparation 3
  7760:524 Nutrition in the Life Cycle 3
  7760:624 Advanced Human Nutrition I 3
  7760:625 Advanced Human Nutrition II 3
  7760:688 Practicum in Family and Consumer Sciences 3

• Cognate Electives:
  Select 5-8 credits with approval of advisor from the School of Nutrition and Dietetics OR from a cognate area outside the School OR from a combination of the two.

• Thesis or Project (select one):
  7760:694 Master’s Project 5
  7760:699 Master’s Thesis in Health Professions 5
  Total 40

Note: Students in all of the options who are working on a master’s thesis may elect to take the course 7760:690 Thesis Research/Reading. This course will not, however, count as part of the required 40-42 credits in the program.

Speech-Language Pathology and Audiology

The School of Speech-Language Pathology and Audiology offers a Master of Arts degree in Speech-Language Pathology in addition to a Master of Arts in Child Life. The program in speech-language pathology is designed to lead to professional licensure by the State of Ohio Board of Speech-Language Pathology and Audiology.

Master of Arts degree in Speech-Language Pathology Program (H70006MA)

Admission Requirements - Speech-Language Pathology

• Hold an undergraduate major in speech-language pathology or completed post-baccalaureate in speech-language pathology

• Complete requirements for admission and send to Graduate School:
  *Application with intent to major in speech-language pathology
  *Official transcript with Fall term grades included
  *Three letters of recommendation
  *Graduate Record Examination scores
  *Resume
  *Statement of Purpose
  *Participation in group interview (for invited students only)
  *Graduate Assistantship - use Apply Online check box

Applications for admission are accepted and considered only once per year for the Fall term. Admission is competitive.

Applications for the following academic year should be received by January 1.

Degree Requirements

• The master’s thesis is optional for students in speech-language pathology. All students will successfully complete a course of study with a minimum of 56 credits, two of which may be thesis credits for students electing the thesis option. Academic requirements within the school for speech-language pathology majors:
  7700:540 Augmentative Communication 3
  7700:561 Organization and Administration: Public School Speech-Language and Hearing Programs 2
  7700:590 Workshop 1-3
  7700:585 Developmental Disabilities 2
  7700:611 Research Methods in Communicative Disorders I 3
  7700:624 Neurogenic Speech and Language Disorders 3
  7700:626 Voice and Cleft Palate 3
  7700:627 Slurring: Theories and Therapies 2
  7700:628 Topics in Differential Diagnosis of Speech and Language Disorders 2
  7700:630 Clinical Issues in Child Language 4
  7700:631 Acquired Brain Injury 3
  7700:632 Dysphagia 3
  7700:633 Professional Issues 2
  7700:639 Audiology for the Speech-Language Pathologist 3
  7700:650 Advanced Clinical Practicum: Speech-Language Pathology [three registrations] 3
  7700:695 Externship: Speech Pathology and Audiology (two registrations) 6 each
  7700:696 Externship Seminar (two registrations) 1 each

Completion of 5610:693 School-Based Externship: Speech-Language Pathology and 5610:691 School-Based Externship Seminar may be substituted for one 7700:695 registration and one 7700:696 SLP Seminar registration.

• Students must be registered for clinical practicum, externship, or student teaching during any academic period in which they are involved in in-house practicum, externship, or student teaching.
Child Life Specialist
(H40109MA: Non-thesis Option)
(H40109MAT: Thesis Option)

Admission Requirements
Application materials must be received by February 1 for fall enrollment.
• Minimum GPA of 2.75 for four years of undergraduate study or 3.0 for the last two years of undergraduate study.
• Graduate Record Examination score report within the last five years preceding application
• Child Life Application (submitted to program director)
• Three letters of recommendation
• Statement of purpose
• Resume
• Have completed 50 hours of experience with children beyond the classroom
• Earned at least a “B” in Direct Experience course. Additional coursework will be required if undergraduate degree does not meet the curriculum requirements and is not in a related field.
• Successfully pass an interview with University faculty and local child life specialists. Interview dates are scheduled in March.

Program Requirements
• Core Courses:
  7400:546 Culture, Ethnicity, and Family (online) 3
  7760:500 Nutrition Communication and Education 4
  5600:651 Techniques of Counseling 3
  7700:551 Child in the Hospital (and lab) 7
  7400:555 Practicum Experience in a Child Life Program 3
  7700:584 Hospital Settings, Children, and Families (and lab) 3
  7700:552 Children, Illness, and Loss 3
  7700:595 Child Life Internship 5
• Cognate:
  5600:622 Introduction to Play Therapy 3
  Select three credits with approval of advisor within the Child Life Program OR from a cognate area outside of the program.
• Thesis or Project (select one):
  7760:694 Master’s Project 5
  7760:699 Master’s Thesis in Health Professions 5
  Nonthesis (Select nine credits from the following list; at least two courses must be 600-level)
  7400:501 American Families in Poverty (online) 3
  7400:504 Middle Childhood and Adolescence 3
  7400:540 Family Crisis 3
  7700:585 Seminar in Health Professions 3
  7400:596 Parent Education (online) 3
  7400:605 Developmental Parent-Child Interactions (online) 3
  7400:610 Child Development Theories 3
  7400:665 Development in Infancy and Early Childhood 3
  7700:695 Internship: Advanced Programming in Child Life 5
  Total for Master’s Project or Master’s Thesis 42
  Total for Nonthesis Option 46

Social Work
(H75000MSW)
The Master of Social Work Program is a joint degree program administered by The University of Akron and Cleveland State University. The Joint MSW Program began in 1995. Distance learning technology, utilizing interactive video and audio systems, links faculty and students at the two institutions. The degree program is accredited by the Council on Social Work Education.

The curriculum of the Joint MSW Program is designed to prepare students for advanced level professional practice in social work. The program provides a rigorous intellectual base, an opportunity for effective skill development, and an educational perspective that views human diversity as desirable and enriching to society.

The Joint MSW Program offers:
• Preparation for the advanced practice of social work
• A degree program accredited by the Council on Social Work Education
• Part-time study
• Evening/weekend courses
• Regional field placements
• Advanced standing program for qualifying students with a BSW

Admission Requirements
The Joint MSW Program is committed to diversity in the student body. An applicant for admission as a degree candidate in social work (either full-time, part-time, or advanced standing) must fulfill the general admission requirements of both the Graduate School and the MSW Program prior to admission. The applicant must therefore complete application forms for both the Graduate School and the MSW Program. It is the applicant’s responsibility to make sure that all required application materials have been received. Applications for full-time, part-time, and advanced standing close on February 15. All application materials must be received by this date. Full-time and part-time admissions are available only for the fall semester.

The applicant must submit the following to the Graduate School:
• Graduate application form accompanied by the application fee
• An official transcript from each college or university attended (must include content in human biology as well as liberal arts coursework) sent directly to the Graduate School.

The applicant must submit the following to the School of Social Work:
• An essay of 3-5 typed pages explaining:
  a) why he/she wants to be a social worker;
  b) why a graduate degree is felt to be necessary to fulfill his/her personal or professional objectives;
  c) his/her views regarding diversity in society;
  d) a situation in which he/she was the recipient/provider of help, emotionally, socially, or economically, and if/how this situation impacted the desire to pursue an advanced degree in social work.
• A recent resume which highlights social work or human service experience.
• Three letters of reference/recommendation forms (including one from immediate supervisor, if employed).
• A completed Application Checklist.
• Preferred Program Format Form.

In addition, applicants to the Joint MSW program must have:
• Undergraduate degree in social work or a related field.
• Minimum GPA of 3.00 in all coursework taken prior to application for admission to the Joint MSW full-time or part-time program.
• Well-balanced liberal arts curriculum.
• Interview with a member of the faculty may also be required.

Admission to the master’s degree program is on a selective basis and is determined by the academic preparation and personal qualifications of the applicant. Intellectual maturity, emotional stability, motivation, and the capacity to work with people are essential qualifications.

Openings for admission are limited, and competition is considerable. Individuals who have the strongest qualifications in terms of the MSW program’s admission criteria are selected for admission. Students admitted to the MSW program must register for courses the same calendar year they are accepted. Students must indicate their intention to enroll by the deadline indicated in the letter of acceptance.

The Advanced Standing option is an accelerated track of the MSW program that is completed in 11 months. Enrollment for the Advanced Standing is highly competitive, and limited to applicants who have excelled in all elements of an undergraduate social work program accredited by the Council on Social Work Education. Students should indicate their preference for Advanced Standing in their application to the MSW program. For the requirements of Advanced Standing include:
• A baccalaureate degree in social work completed within the last five years from a program accredited by the Council on Social Work Education;
• A minimum overall GPA of 3.2 and a minimum GPA in social work courses of 3.5 on a 4.0 scale;
• Demonstration of superior performance in field practicum as evidenced by submission of undergraduate field evaluations;
• For students graduating in May, acceptance will be contingent upon receipt of a final transcript and proof of BSW degree.

Applicants not accepted into Advanced Standing placement will be notified in writing of their option to enter the pool for admission into the full-time or part-time programs.

Applicants should be aware that having a prior felony conviction or prior sanctions for unprofessional conduct may impact future potential for obtaining licensure as well as field placements and social work employment. All individuals applying for a social work license in the state of Ohio are required to submit a criminal records check.

Students are expected to adhere to the program format under which they were admitted. Any changes in this initial admission status will be based on the program’s ability to accommodate the change. Changes must be requested in writing at the beginning of the previous academic year. The Admissions Committee may require an in-person interview at its discretion.
Scheduling of courses depends on the availability of rooms equipped with distance education technology as well as other factors. The days and times courses are offered may vary from year to year. Students enrolled in either full-time, part-time, or advanced standing programs must be prepared to be flexible when the schedule of classes changes.

Transfer Students
An applicant who wishes to transfer from another MSW program must follow the same admission process and meet the same admission requirements as other degree candidates. A formal written request for transfer must be made at the time of application for admission. A maximum of 20 graduate credit hours may be transferred from another program accredited by the Council of Social Work Education. The credits must fall within the six-year time limit for degree completion. A grade of "B" or better is required for transfer credit. The Admissions Committee will determine acceptance of transfer credit. Credit will not be given for work or life experience. Transfer students must submit field work evaluations at the time of application for admission.

Program Requirements:

- Complete a minimum of 60 graduate credits of approved courses in social work with an average grade of "B" or better on all classroom courses and satisfactory grades in all field courses. Students must register only for 600-level courses.
- Complete an approved program of courses which include the following required courses:

**Full Time Program**

**First Year Professional Foundation:**

- **Fall Semester**
  - 7750:601 Foundation Field Practicum 3
  - 7750:605 Social Work Practice with Small Systems 3
  - 7750:622 Fundamentals of Research I 3
  - 7750:631 Human Behavior and Social Environment: Small Social Systems 3
  - 7750:646 Social Welfare Policy I 3

- **Spring Semester**
  - 7750:602 Foundation Field Practicum 3
  - 7750:606 Social Work Practice with Large Systems 3
  - 7750:647 Social Welfare Policy II 3
  - 7750:623 Fundamentals of Research II 3
  - 7750:632 Human Behavior and Social Environment: Large Systems 3

**Second Year Concentrations (Direct Practice):**

- **Fall Semester**
  - 7750:603 Advanced Field Practicum 3
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:663 Psychopathology and Social Work 3
  - 7750:683 One elective 3

- **Spring Semester**
  - 7750:604 Advanced Field Practicum 3
  - 7750:608 Advanced Practice with Small Systems II 3
  - 7750:675 Program Evaluation 3
  - Two electives 6

**Second Year Concentrations (Macro Practice):**

- **Fall Semester**
  - 7750:603 Advanced Field Practicum 3
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:674 Community, Economic Systems and Social Policy Analysis 3
  - 7750:672 One elective 3

- **Spring Semester**
  - 7750:604 Advanced Field Practicum 3
  - 7750:608 Advanced Practice with Small Systems II 3
  - 7750:675 Program Evaluation 3
  - One elective 3

**Part-Time Program**

**Professional Foundation:**

- **Fall Semester (First Year)**
  - 7750:631 HBSE: Small Systems 3
  - 7750:646 Social Welfare Policy I 3

- **Spring Semester (First Year)**
  - 7750:632 HBSE: Large Systems 3
  - 7750:647 Social Welfare Policy II 3

- **Fall Semester (Second Year)**
  - 7750:622 Fundamentals of Research I 3
  - 7750:605 Social Work Practice with Small Systems 3
  - 7750:601 Foundation Field Practicum 3

**Concentrations (Direct Practice):**

- **Fall Semester (Third Year)**
  - 7750:608 Advanced Practice with Small Systems I 3
  - 7750:683 Advanced Field Practicum 3

- **Spring Semester (Fourth Year)**
  - 7750:606 Advanced Practice with Small Systems II 3

**Concentrations (Macro Practice):**

- **Fall Semester (Third Year)**
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:674 Community, Economic Systems and Social Policy Analysis 3

- **Spring Semester (Fourth Year)**
  - 7750:601 Foundation Field Practicum 3
  - 7750:608 Advanced Practice with Small Systems II 3

**Advanced Standing Program**

**Direct Practice Concentration**

- **Summer Semester**
  - 7750:650 Advanced Standing Integrative Seminar 6

- **Fall Semester**
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:674 Community, Economic Systems and Social Policy Analysis 3

**Macro Practice Concentration**

- **Summer Semester**
  - 7750:650 Advanced Standing Integrative Seminar 6

- **Fall Semester**
  - 7750:611 Dynamics of Racism and Discrimination 3
  - 7750:674 Community, Economic Systems and Social Policy Analysis 3

**Testing Out Policy**

In order to avoid duplication and redundancy of course content during the foundation year, the MSW Program allows students the opportunity to test out of the following courses:

- 7750:631 Human Behavior and Social Environment: Small Social Systems
- 7750:646 Social Welfare Policy
- 7750:622 Fundamentals of Research I

- Spring Semester (Third Year)
  - 7750:607 Advanced Practice with Small Systems I 3
  - 7750:603 Advanced Field Practicum 3

- Spring Semester (Fourth Year)
  - 7750:608 Advanced Practice with Small Systems II 3
  - 7750:604 Advanced Field Practicum 3
  - 7750:675 Program Evaluation 3
Students wishing to test out of one or more of the above courses must notify the MSW Program Director at least three weeks prior to the start of the semester in which the course is normally taught. The proficiency exam must be taken prior to classes starting in that semester. There are no fees or penalties associated with taking these exams, however, each exam may be taken only once.

Additional information about the MSW Program may be obtained from the School of Social Work.

**Nursing**

The School of Nursing offers diverse and comprehensive nursing education programs at the undergraduate and graduate levels. The programs of study, based on professional standards, prepare individuals to provide nursing care in a variety of settings. The School of Nursing supports nursing research that contributes to the health and well-being of society. The school is committed to serving culturally, racially, and ethnically diverse populations. Through academic and community collaboration, the college promotes excellence in nursing education, research, practice, and service.

**Goals**

- Prepare generalist and advanced practice nurses who are eligible for initial licensure and for certification.
- Prepare scholars in nursing at the doctoral level, focusing on the conduct of nursing research and the dissemination of research findings with their implications for nursing practice and health care policy.
- Provide a foundation for lifelong commitment to professional development and scholarship through continuing education and advanced study at the master’s and doctoral levels.
- Prepare nurses who are sensitive in caring for diverse populations in a variety of settings.
- Prepare professional practitioners who integrate leadership roles and ethical standards in a continuously changing health care arena and society.

**Philosophy**

The School of Nursing faculty believe that the foci of professional nursing are individuals, families and communities.

The Individual is seen as a complex whole whose existence involves patterns, dynamic change, transformation and interdependence. The individual interrelates within the environment in biological, psychological, social, spiritual, cultural and other dimensions. The individual is unique and universal. The individual is a thinking, feeling, interacting, evolving, creating, valuing being.

Families are individuals dynamically connected with each other over time in traditional and nontraditional family configurations.

Communities are groups of people with one or more common characteristics who are in relationship to one another and may or may not interact.

Health is comparative, dynamic, multidimensional and has personal meaning. It includes disease, nondisease and quality of life. People have the right to participate in decisions affecting and effecting personal health.

Environment includes all living and nonliving dimensions with which the individual, family and community have interrelationships. The dynamic environmental interrelations define and establish rules for health and modes of action.

Nursing is an art and a science. The discipline of nursing is concerned with individual, family and community and their responses to health within the context of the changing health care environment. Professional nursing includes the appraisal and the enhancement of health. Personal meanings of health are understood in the nursing situation within the context of familial, societal and cultural meanings. The professional nurse uses knowledge from theories and research in nursing and other disciplines in providing nursing care. The role of the nurse involves the exercise of social, cultural, and political responsibilities, including accountability for professional actions, provision of quality nursing care, and community involvement.

Education is an individualized, life-long process. Learning includes the individual's interrelations with the environment, knowledge and skill acquisition, development of critical thinking, and self awareness. Self-expression enables the student to respond to clients who have unique human values and cultural heritage. Each nursing student brings attitudes, beliefs, values, feelings, knowledge and experience into the learning environment. These variables influence learning that occurs through continual construction and reconstruction of experience in relation to environmental influences.

Nursing education at the baccalaureate level synthesizes knowledge from nursing, humanities, social, cultural, physical and natural sciences to operationalize clinical decision-making. The student is prepared to function as nurse generalist in a variety of settings. Faculty and student continually seek to refine the commitment to and understanding of the relationship between theory and practice. Students are encouraged to become self-directed, collaborative, interdependent and independent. These variables are the foundation for life-long learning and professional development.

Nursing education at the master’s level builds upon baccalaureate nursing education and provides a foundation for doctoral study. Graduate education at this level prepares advanced practice nurses with expertise in critical thinking and decision making, effective communication, and therapeutic interventions. Through a variety of learning experiences, master of science in nursing students analyze and use theoretical formulations and research findings in advanced practice.

Nursing education at the doctoral level prepares nurses for full participation in the discipline as scholars and researchers. Emphasis is placed on the development of nurses who are informed about the many dimensions of scholarship, including research, practice and teaching, and the integration of the three. Through various didactic, collaborative and research opportunities, doctoral students learn how to develop and test knowledge about health, illness and nursing care, and how to use this knowledge to enhance teaching, improve patient care, and influence health care policy.

**Master of Science In Nursing**

**Accreditation**

The master’s degree programs are fully accredited by the Commission on Collegiate Nursing Education (CCNE). CCNE is a resource of information regarding tuition, fees, and length of program and can be contacted at: One Dupont Circle, N.W., Suite 530, Washington, D.C., 20036, (202) 887-6791.

**Expected Outcomes of the Program**

- Applies scientific theories and research to implement the advanced nursing role
- Demonstrates competence according to national standards and guidelines in the advanced nursing role
- Demonstrates knowledge of legal, ethical, fiscal, policy, and leadership issues that impact the delivery of health care in the advanced nursing role
- Demonstrates knowledge of legal, ethical, fiscal, policy, and leadership issues that impact the advancement of the nursing profession in the advanced nursing role
- Identifies researchable nursing problems and contributes to research studies for advanced nursing and health care practice

**Admission**

- Baccalaureate degree in nursing from an NLNAC or CCNE accredited nursing program.**
- 3.00 GPA on a 4.00 scale for BSN and all previous nursing degrees.
- CCRN certification required prior to interview for the Nurse Anesthesia track.
- Three (3) letters of reference from a recent employer; a member of the nursing profession; a former faculty member.
- 300-word essay describing professional goals.
- Interview prior to admission to the program.
- Current State of Ohio license to practice nursing.
- Prerequisite course requirements: Undergraduate Statistics, Nursing Research, Basic Health Assessment and Computer Skills. Graduate Level Statistics.

Applicants for the Adult/Gerontological Health Nurse Practitioner track are required to have clinical experience as a registered nurse for 12 or more months within the last two years in acute medical/surgical care or long-term acute care [LTAC] with adult and gerontological populations.

Applicants who are certified nurse practitioners will be evaluated and have their program planned on an individual basis.

All application materials for the Nurse Anesthesia program must be received by August 1. Once accepted into the School of Nursing MSN program candidates may begin taking core courses. Candidates may be eligible to interview for the program in October. Students admitted into the program will begin anesthesia classes in June of the following year. A minimum of one year of adult critical care experience is required at the time of the October interview for the Nurse Anesthesia program.

**Admission Procedures**

The student should access the online graduate application through the Graduate School webpage or the webpage of the School of Nursing. Criteria specific for admission to the Graduate Nursing Program may be secured from the Coordinator of the Graduate Program in Nursing.

A graduate admissions committee of the School of Nursing will review all applications and make recommendations to the Coordinator of the Graduate Program regarding the applicant’s status. The Coordinator will send a recommendation to the dean of the Graduate School, who will notify the student of admission status.

Applications received in the graduate office of the School of Nursing will be reviewed when the file is complete to facilitate the admission process.

*National League for Nursing Accreditation Commission.

**A baccalaureate degree in nursing from a foreign university which is recognized by The University of Akron.
Instructional Program
The Master of Science in Nursing curriculum includes a minimum of 36 credit hours of study depending on the specialty track. The advanced practice tracks include Adult/Gerontological Health Nursing, Family Psychiatric Mental Health Nursing, Child and Adolescent Health Nursing, and Nurse Anesthesia. Graduates are prepared for advanced practice as clinical nurse specialists, nurse practitioners, or nurse anesthetists, or for roles as administrators or educators. The curriculum is based on theory and research both in nursing and in related disciplines. It provides the foundation for doctoral study and for ongoing professional development.

Nursing Core
The curriculum consists of a core of 17 credit hours. These courses encompass advanced theory, research, computers in nursing, health policy, and pathophysiological concepts.

Nursing Research
All students enroll in a research core for a total of 6-7 credits: 8200:613, Nursing Inquiry I and 8200:619 Master’s Thesis or 8200:618 Nursing Inquiry II.

RN Sequence
(This sequence is limited to registered nurse graduates of Associate Degree and Diploma nursing programs)
The RN program is designed for registered nurses who hold a diploma or associate degree in nursing or a baccalaureate degree in another field. It is specifically designed for RNs who are interested in obtaining the baccalaureate degree in nursing and/or continuing on to a master’s degree in nursing. Students must complete 68-69 hours of prerequisite undergraduate coursework prior to acceptance into the sequence. The RN program consists of 32 credit hours of upper-division baccalaureate coursework. Students wishing to begin work on the Master’s degree RN/MSN option may do so while meeting the baccalaureate requirements and must apply to the graduate program in the fall or early spring prior to graduation. Additional admission requirements and a graduate research class (Inquiry I) are part of the RN/MSN option. Continuation in the graduate program is predicated on meeting graduate program requirements and acceptance into the graduate nursing program.

Advanced Practice Options
Options are provided for advanced practice as a clinical nurse specialist, nurse practitioner, or nurse anesthetist, or for advanced roles as an administrator. Requirements for admission include at least one year of practice in the area of interest.
The Master of Science in Nursing curriculum requires from 36 to 60 credits, depending on the Advanced Practice option selected by the student.

Core courses required of all students:
8200:603 Theoretical Basis for Nursing 3
8200:606 Information Management in Advanced Nursing Practice 3
8200:607 Policy Issues in Nursing 2
8200:613 Pathophysiological Concepts of Nursing Care † (*) 3
8200:616 Nursing Inquiry I 3
8200:618 Nursing Inquiry II 3
or 8200:699 Master’s Thesis 1-6

Functional role courses selected by students based upon area of specialty.

(*) Anesthesia students take 8200:561 and 8200:562

• Nurse Anesthesia (820300MSN)
The Anesthesia Track (60 credit hours) is accredited by the Council on Accreditation of Nurse Anesthesia Programs. The Nurse Anesthesia track meets certification requirements through American Association of Nurse Anesthetists’ Council on Certification of Nurse Anesthetists (CCNA).
8200:561 Advanced Physiological Concepts in Health Care I 3
8200:562 Advanced Physiological Concepts in Health Care II 3
8200:563 Pathophysiology for Nurse Anesthetists 3
8200:637 Nurse Anesthesia Residency I 4
8200:640 Scientific Components of Nurse Anesthesia 3
8200:641 Pharmacology for Nurse Anesthesia I 3
8200:642 Introduction to Nurse Anesthesia 2
8200:643 Principles of Anesthesia I 4
8200:644 Pharmacology for Nurse Anesthesia II 3
8200:645 Principles of Anesthesia II 4
8200:646 Nurse Anesthesia Residency II 4
8200:647 Professional Role Seminar 2
8200:648 Nurse Anesthesia Residency III 4
8200:649 Nurse Anesthesia Residency IV 4

• CRNA-MSN Anesthesia Option
8200:640 Scientific Components of Nurse Anesthesia 3
8200:641 Pharmacology for Nurse Anesthesia I 3
8200:642 Introduction to Nurse Anesthesia 2
8200:643 Principles of Anesthesia I 4
8200:644 Pharmacology for Nurse Anesthesia II 3
8200:645 Principles of Anesthesia II 4
8200:647 Professional Role Seminar 2

• Child and Adolescent Acute Care Nurse Practitioner (820401MSN)
The Child and Adolescent Acute Care Nurse Practitioner track (45 credit hours) focuses on the integration of evidenced based knowledge and skills in acute/critical care with children and adolescents with complex, acute, critical, and chronic health conditions.

7400:585 Nutrition for Pediatric Nurse Practitioners 2
8200:650 Pediatric/Adolescent Assessment 3
8200:651 Child and Adolescent Health Nursing I 3
8200:652 Child and Adolescent Health Nursing II Practicum 2
8200:653 Child and Adolescent Health Nursing II Practicum 3
8200:654 Child and Adolescent Health Nursing III Practicum 2
8200:655 Child and Adolescent Health Nursing III 3
8200:656 Pharmacology for Child and Adolescent Health Nursing 3
8200:657 Child and Adolescent Health Nursing III 3
8200:658 Child and Adolescent Health Nursing IV Practicum 2
8200:659 Child and Adolescent Health Nursing IV 3

• Child and Adolescent Health Nurse Practitioner Primary Health Care (820301MSN)
The Child and Adolescent Health Nurse Practitioner track (Primary Health Care) (45 credit hours) meets certification requirements through the American Nurses Credentialing Center (ANCC) and the Pediatric Council for Pediatric Nurse Practitioners and Nurses (PCPNPN). Emphasis is on the primary health care needs of children and adolescents.
7400:585 Nutrition for Pediatric Nurse Practitioners 2
8200:650 Pediatric/Adolescent Assessment 3
8200:651 Child and Adolescent Health Nursing I 3
8200:652 Child and Adolescent Health Nursing I Practicum 2
8200:653 Child and Adolescent Health Nursing II Practicum 3
8200:654 Child and Adolescent Health Nursing III Practicum 2
8200:655 Child and Adolescent Health Nursing III 3
8200:656 Pharmacology for Child and Adolescent Health Nursing 3
8200:657 Child and Adolescent Health Nursing III 3
8200:658 Child and Adolescent Health Nursing IV Practicum 2
8200:659 Child and Adolescent Health Nursing IV 3

• Child and Adolescent Acute Care Nurse Practitioner Primary/Acute Care (820308MSN)
The Child and Adolescent Health Nurse Practitioner track (Primary/Acute Care) (55 credit hours) focuses on the integration of evidenced based knowledge and skills in primary and acute care with children with complex, acute, critical, and chronic health conditions. Emphasis is on advanced practice in emergency departments, sub-specialty clinics, acute areas of hospitals, and intensive care units with children with complex, acute, critical, and chronic health conditions.
7400:585 Nutrition for Pediatric Nurse Practitioners 2
8200:650 Pediatric/Adolescent Assessment 3
8200:651 Child and Adolescent Health Nursing I 3
8200:652 Child and Adolescent Health Nursing I Practicum 2
8200:653 Child and Adolescent Health Nursing II Practicum 3
8200:654 Child and Adolescent Health Nursing III Practicum 2
8200:655 Child and Adolescent Health Nursing III 3
8200:656 Pharmacology for Child and Adolescent Health Nursing 3
8200:657 Child and Adolescent Health Nursing III 3
8200:658 Child and Adolescent Health Nursing IV Practicum 2
8200:659 Child and Adolescent Health Nursing IV 3

• Psychiatric Mental Health Nursing (820306MSN)
Psychiatric Mental Health Nursing Track (46 credit hours and meets eligibility requirements for certification through American Nurses Credentialing Center [ANCC] as psychiatric clinical nurse specialist or psychiatric nurse practitioner).
8200:610 Advanced Adult/Gerontological Assessment with Practicum 3
8200:611 Advanced Mental Health Assessment 3
8200:660 Psychiatric Mental Health, APN I Practicum 2
8200:661 Psychiatric Mental Health, APN I 3
8200:662 Clinical Psychopharmacology 3
8200:663 Psychiatric Mental Health APN Internship (elective only) 1-4
8200:664 Psychiatric Mental Health-Acute, APN II Practicum 2
8200:665 Psychiatric Mental Health-Acute, APN II 3
8200:667 Psychiatric Mental Health-Chronic, APN III 3
8200:668 Psychiatric Mental Health-Chronic, APN III Practicum 2
8200:669 Psychiatric Mental Health-Synthesis, APN IV Practicum 2
8200:670 Psychiatric Mental Health-Synthesis, APN IV 3
• Psychiatric Family Nurse Practitioner (820400MSN)

The Psychiatric Family Nurse Practitioner track (38-42 credit hours) provides the educational preparation necessary to provide primary mental healthcare at an advanced level to individuals of all ages and families. Preparation as a Psychiatric Family Nurse Practitioner is emphasized and includes clinical supervision of individuals and families, differential diagnosis and management of psychiatric and mental health disorders, medication management, psychotherapeutic interventions, and case management. Graduates of the Psychiatric Family Nurse Practitioner track are eligible to sit for certification from the American Nurses Credentialing Center (ANCC) as a Family Psychiatric and Mental Health Nurse Practitioner (FMHP).

8200:610 Advanced Adult/Gerontological Assessment with Practicum 3
8200:611 Advanced Mental Health Assessment 3
8200:660 Psychiatric Mental Health APN I Practicum 2
8200:661 Psychiatric Mental Health APN I 3
8200:662 Clinical Psychopharmacology 3
8200:664 Psychiatric Mental Health-Acute, APN II Practicum 3
8200:665 Psychiatric Mental Health-Acute, APN II 3
8200:667 Psychiatric Mental Health-Chronic, APN III Practicum 3
8200:668 Psychiatric Mental Health-Chronic, APN III Practicum 2
8200:659 Psychiatric Mental Health Synthesis APN IV Practicum 3
8200:670 Psychiatric Mental Health Synthesis APN IV 3
8200:650 Additional Pediatric/Adolescent Assessment 3
8200:663 Psychiatric Mental Health APN Internship 1-4
5600:648 Individual and Family Development Across the Lifespan 3
5600:660 Counseling Children 3

• Adult Gerontological Health Nursing Clinical Nurse Specialist (820302MSN)

Meets eligibility requirements for certification through American Nurses Credentialing Center (ANCC) or Clinical Nurse Specialist in selected areas. (39 credits)

8200:610 Advanced Adult/Gerontological Assessment with Practicum 3
8200:612 Advanced Clinical Pharmacology 3
8200:671 Adult/Gerontological Health Nursing CNS I 2
8200:674 Adult/Gerontological Health Nursing CNS I Practicum 2
8200:675 Adult/Gerontological Health Nursing CNS II 2
8200:676 Adult/Gerontological Health Nursing CNS II Practicum 2
8200:677 Adult/Gerontological Health Nursing CNS III 2
8200:678 Adult/Gerontological Health Nursing CNS III Practicum 2
8200:679 Adult/Gerontological Health Nursing CNS III Practicum 3
8200:673 Adult/Gerontological Health Nursing CNS IV 1
8200:670 Adult/Gerontological Health Nursing CNS IV Practicum 3

• Adult Gerontological Health Nurse Practitioner (820303MSN)

Meets eligibility requirements for certification through American Nurses Credentialing Center (ANCC) and American Academy of Nurse Practitioners (AANP). (48 credits)

Students must achieve a "B" or higher in core specialty courses: 8200:608 Pathophysiologival Concepts, 8200:610 Advanced Adult/Gerontological Assessment with Practicum, and 8200:612 Advanced Clinical Pharmacology and in all Adult/Gerontological Specialty Clinical track courses required to progress in the Adult/Gerontological Health Nurse Practitioner track.

8200:610 Advanced Adult/Gerontological Assessment with Practicum 3
8200:612 Advanced Clinical Pharmacology 3
8200:620 Adult/Gerontological Health Nursing NP I 2
8200:621 Adult/Gerontological Health Nursing NP I Practicum 2
8200:622 Adult/Gerontological Health Nursing NP II 2
8200:623 Adult/Gerontological Health Nursing NP II Practicum 2
8200:624 Adult/Gerontological Health Nursing NP III 2
8200:625 Adult/Gerontological Health Nursing NP III Practicum 2
8200:626 Adult/Gerontological Health Nursing NP IV 2
8200:627 Adult/Gerontological Health Nursing NP IV Practicum 2
8200:628 Adult/Gerontological Health Nursing NP V Practicum 2
8200:629 Adult/Gerontological Health Nursing NP V Practicum 2
8200:631 Adult/Gerontological Health Nursing NP VI Practicum 2
8200:632 Adult/Gerontological Health Nursing NP VI Practicum 3
8200:630 Adult/Gerontological Health Nursing NP VII Practicum 3
8200:631 Adult/Gerontological Health Nursing NP VII Practicum 3
8200:632 Adult/Gerontological Health Nursing NP VII Practicum 3
8200:633 Adult/Gerontological Health Nursing NP VIII Practicum 3
8200:634 Adult/Gerontological Health Nursing NP VIII Practicum 3
8200:635 Organizational Behavior in Nursing Settings 3
8200:636 Practicum Nursing Administration I 2
8200:637 Practicum Nursing Administration II 2
8200:638 Practicum Nursing Administration III 2
8200:639 Practicum Nursing Administration IV 2
3470:689 Statistics 3
8200:606 Information Management in Advanced Nursing Practice 3
8200:613 Inquiry I 3
8200:618 Inquiry II 3
8200:704 Advanced Clinical Pharmacology Across the Lifespan 3
8200:632 Fiscal Management in Nursing 3
8200:630 Resource Management in Nursing 3
8200:635 Organizational Behaviors in Nursing 3
8200:xxx Elective 3
Total 3

Master of Public Health (830000MPH)

The Consortium of Eastern Ohio Master of Public Health (CEOMPH) program is a partnership between The University of Akron, Cleveland State University, Northeastern Ohio Medical University, Ohio University, and Youngstown State University. This nontraditional program is geared toward the working professional who would like to broaden his or her role in improving community health, enhance current job skills, or seek career advancement. Students are encouraged to move through the program as a cohort with core courses being taught on Saturday by interactive videoconferencing from one of our distance learning sites. Unique features of this program include the use of distance learning for the six core courses, including interactive videoconferencing and web-enhanced teaching. Elective courses may be taken at any of the partner universities. Core courses are taught on Saturdays to accommodate working students. Students can choose electives toward their areas of interest. This MPH degree is a generalist degree. CEOMPH is accredited by the Council on Education and Public Health.

Mission Statement

The mission of the Consortium of Eastern Ohio Master of Public Health program is to provide accredited public health education designed for the working professional. It does this through a collaborative learning community, drawing on the collective resources of its five member institutions and partnering community agencies. The program strives to produce respected and competent professionals able to improve public health practice, especially in eastern Ohio.

Values

• Improving, preserving, and enhancing the health and well-being of the entire community.
• Engaging in collaborative behavior that models as well as educates.
• Achieving student excellence, including leadership, accountability, and ethical behavior.
• Protecting the environment, recognizing and reducing environmental health risks, and using resources prudently in our personal and professional lives.
• Promoting diversity in the public health workforce.
• Demonstrating cultural competence.
• Commitment to lifelong learning.

Goals

• Provide graduates with a foundation of public health skills and knowledge, including community assessment methods, analytic skills, research strategies, program implementation, evaluation, and policy development within an ethical and culturally sensitive perspective.
• Provide an MPH program that produces competent practitioners through collaboration among academicians, researchers, public health practitioners, and students from each member institution and the eastern Ohio community.

• Provide students with the knowledge and opportunities to apply public health concepts and skills to assess and improve the health status of residents of Ohio through research and service.

• Foster ongoing professional development of faculty and students and public health practitioners for the advancement of practice in the community.

• Assure at least an annual evaluation of overall program activity so that it continues to meet the needs of both students and the eastern Ohio community and is based on the most current concepts and skills in public health research and practice.

**Admission**

All application materials must be sent to Consortium of Eastern Ohio Master of Public Health office, 4209 State Route 44, P.O. Box 95, Rootstown, Ohio 44272-0095.

Students must meet the following admission requirements:

• Submit completed application by January 15 of the year student is seeking to enter in the fall

• Possess a bachelor’s degree from an accredited college or university

• Provide official academic records from each institution of higher education attended. If the official record is not in English, an official translation must accompany the original language document.

• Minimum undergraduate GPA of 2.75 and minimum graduate GPA of 3.0 out of a 4.0 scale

• Three letters of recommendation from individuals familiar with applicant’s academic or professional background. Individuals who have not been involved in an academic institution for two years or more may submit letters of recommendation by supervisors from his/her place of employment. The letters should include an assessment of current work quality and ability to successfully complete graduate training. Letters should be addressed to the CEOMPH Admissions Committee at the above address.

• A cover letter (no more than two pages) explaining applicant’s educational and professional history; area of interest in public health, interest and motivation for seeking a MPH degree; and professional or academic career plans upon completion of the program.

• Successful completion of a college level mathematics or statistics course and college level social or natural science course.

• GRE scores taken within the last five years (student may be exempt if he/she has a professional or academic master’s or doctoral degree).

• TOEFL scores taken within the last two years from graduates of foreign universities who are non-native English speakers. The minimum score must be 550 (paper-based) or 213 (computer-based) or 79-80 with read/speak/listen=17, write=14 (internet-based)

• Two years of work experience in a relevant field is highly recommended, but not required.

• $45 non-refundable application fee. Students with international credentials must pay a total of $90.

• International students must also complete an INTERNATIONAL STUDENT DOCUMENTATION PACKET and Declaration and Certification of Finances (DCF).

For administrative purposes, students will be enrolled at one of the four universities: UA, CSU, OU, or YSU. If accepted, the Consortium of Eastern Ohio Master of Public Health (CEOMPH) Admissions Committee will assign students an “enrollment university,” based on his/her preference. Questions may be addressed in writing to the above address or applicants may contact the MPH Program office by telephone at (330) 325-6179, fax (330) 325-5907, or e-mail at pubhlth@neoucom.edu. The Program Coordinator at The University of Akron may be reached at (330) 972-2400.

**Curriculum**

The MPH program contains five core areas basic to public health: social and behavioral sciences, epidemiology, biostatistics, health services administration, and environmental health sciences.

• Core courses:

  8300:601 Public Health Concepts 3
  8300:602 Social and Behavioral Sciences in Public Health 3
  8300:603 Epidemiology in Public Health 3
  8300:604 Biostatistics in Public Health 3
  8300:605 Health Services Administration in Public Health 3
  8300:606 Environmental Health Sciences in Public Health 3

  Subtotal 18

• Generalist Track (required):

  8300:608 Public Health Practice and Issues 3
  8300:610 Grant Writing for Public Health Practice 3

• Additional program requirements:

  8300:698 Capstone Project I 3
  8300:699 Capstone Project II 3

  Electives (12 credits):

  8300:696 Practicum 1-3
  8300:695 Independent Study 1-3
  8300:680-689 Special Topics 1-5

  Total 42

A portfolio and exit presentation are also required of each student for graduation.
The University of Akron has been a focus for education and research in polymer science since 1910 when Professor Charles M. Knight began offering courses in rubber chemistry. Master’s theses treating rubber chemistry on the University library shelves date to 1920. The University began developing major laboratories in 1942 under the leadership of Professor G.S. Whitby, and the UA program played a significant role in the synthetic rubber industry of the U.S. government during World War II. An Institute of Rubber Research under the direction of Professor Maurice Morton was created in 1956 and became the Institute of Polymer Science in 1964. A Ph.D. program in Polymer Chemistry was introduced in 1956. In 1967, a Department of Polymer Science was formed in the College of Arts and Sciences, awarding M.S. and Ph.D. degrees in Polymer Science.

A Center for Polymer Engineering was created in 1983 and a Department of Polymer Engineering in the College of Engineering in January 1984 with Professor James L. White as director and department chair to strengthen the study of polymer processing and engineering applications. In 1988 the College of Polymer Science and Polymer Engineering was established to consolidate the administration of the two academic departments, the Institute of Polymer Science and the renamed Institute of Polymer Engineering.

HISTORY

The mission of the College of Polymer Science and Polymer Engineering is to serve its students through a high quality educational experience, incorporating both classroom and laboratory learning, as well as a stimulating research environment. Its graduates and former research associates provide a well-trained workforce for employers throughout the world, but especially for the State of Ohio. With the generation of new knowledge from research and the application of that knowledge, the College serves society with benefits to both the economy and the environment.

- The primary purpose of the College is to educate its students in the science and engineering of polymers. Since the College is involved principally in graduate level education (M.S. and Ph.D.), its students are taught the skills of research by the faculty, occasionally assisted by visiting scientists and post-doctoral associates.
- The involvement of the College faculty, students and associated staff in research meets a further purpose, i.e., to develop new knowledge concerning polymeric materials and processes, and to disseminate that knowledge to the broader community of researchers, technologists, and manufacturers who employ that knowledge to their own aims.
- The College provides a variety of services through its institutes and centers to aid the economic and cultural development of our society. Individual faculty members provide services as consultants to industry, government, and civic institutions, concerning the developments in knowledge and applications of polymers.
- An additional function of the College is to provide training for those individuals who wish to improve their skills and knowledge concerning various types of polymers, their properties, processes and uses. Undergraduate students from other colleges within the University participate in specialized courses taught by the polymer college faculty as they pursue their traditional degree programs. Also, a variety of non-credit offerings are presented as continuing education, intensive short courses, and seminars.

DESCRIPTION

The College of Polymer Science and Polymer Engineering carries out a program of research and education, primarily at the graduate level, and serves as a major intellectual resource for the scientific and technological development of polymers and related materials and processes. The college consists of the Department of Polymer Science, the Department of Polymer Engineering, and the Maurice Morton Institute of Polymer Science and the Institute of Polymer Engineering.

The Department of Polymer Science emphasizes polymer synthesis, the physical chemistry, physics and mechanical behavior and technology of polymers, and many of their applications. The Department of Polymer Engineering emphasizes polymer processing (including reactive processing), solid state structure/ morphology and properties of polymers as related to process history as well as engineering analysis and design. Collaborative research among the faculty members in the two departments is common and provides a unique environment and capability for solving modern-day problems. This provides a stimulating environment for students to obtain multidisciplinary training.

ADMISSION REQUIREMENTS

Admission to the graduate programs in the college is competitive. The departmental admission committees carefully consider each applicant. Early application is suggested.

DEPARTMENT OF POLYMER SCIENCE

Students with an undergraduate degree in chemistry, physics, or engineering and a grade point average of 3.0 or better may apply. Students holding a degree in biology or natural sciences will be expected to take additional courses on the undergraduate level in calculus, organic chemistry, thermodynamics, and physics. For highly qualified students lacking no more than one of the required courses a provisional admission may be given for one semester, followed by full admission upon successful completion of the undergraduate course.

In addition to the graduate application and official transcripts applicants must submit three letters of recommendation, a statement of purpose, and GRE scores. A student with a M.S. in the sciences from another university can be admitted to the Ph.D. program. Three letters of recommendation are required in such cases to be certain that the student is likely to be successful in doctoral research. All application materials must be received by December 15 for early consideration. The final deadline for all applicants is February 1.

DEPARTMENT OF POLYMER ENGINEERING

Students with an undergraduate degree in engineering disciplines, materials science, or related degrees with a grade point average of 2.75/4.0 or better are admitted. Students holding a degree in the natural sciences usually need additional undergraduate engineering courses, which are required prerequisites for polymer engineering courses. For such students, depending upon their background, a provisional admission may be given followed by full admission upon successful completion of a series of required remedial courses.

In addition to the graduate application and official transcripts applicants must submit three letters of recommendation and GRE general test scores. A student with a M.S. in Mechanical or Chemical Engineering from another university can be admitted to the Ph.D. program. Three letters of recommendation are required as well as GRE general test scores.

Applications are processed throughout the year for fall semester admission; however, priority consideration is given to those applicants whose materials are received by January 15 each year.

DOCTOR OF PHILOSOPHY

Students may pursue the Doctor of Philosophy degree in either Polymer Science or Polymer Engineering.

Doctor of Philosophy in Polymer Science

(987010PHD)

An interdisciplinary program leading to the Doctor of Philosophy in Polymer Science is administered by the Department of Polymer Science. Graduates from the three main disciplines (chemistry, physics and engineering) are guided into the appropriate courses of study and research in that field under the supervision of a faculty member. Research facilities of the Institute of Polymer Science are available for dissertation research. Students may be admitted directly to the Ph.D. program upon screening of their qualifications and recommendation by the department chair and dean.

In addition to satisfying the general requirements of the Graduate School, a student working toward the Doctor of Philosophy in Polymer Science must meet the following requirements:

- Complete a course of study prescribed by the student’s advisory committee based on the committee’s judgment of the student’s background and on the result of any special examinations it might impose. This course will consist of a minimum of, but usually more than, 36 credits in graduate courses, or their equivalent, plus sufficient Ph.D. research credits to make a total of 84 credits (exclusive of Master of Science thesis credit). Credits for participation in either Polymer Science of Polymer Engineering seminars do not apply toward the degree. At least 18 credits of graduate course work and all dissertation credits must be completed at the University.

There is a university minimum residence time requiring one year, although graduate students starting with a B.S. or B.A. typically spend 4 years in residence.
Doctor of Philosophy in Polymer Engineering (98401PHD)

The Department of Polymer Engineering administers a graduate program in which students, with primarily engineering backgrounds, are guided through a course of study and research under the supervision of a faculty member. Students are required to take all of the exams until they pass six. (A maximum of 24 total cumulative examinations may be taken)

Complete 9871:607,8 Polymer Science Seminar I and II.

Attendance at and participation in seminar-type discussions scheduled by the department. Credits for participation in either polymer science or polymer engineering seminars do not apply toward the degree.

Present a public/departmental seminar on the completed research.

Pass an oral examination upon completion of a research dissertation.

Demonstrate competency in computer programming.

Pass the general requirements for the Doctor of Philosophy degree.

Satisfy the foreign language requirement for the doctoral degree by meeting the requirements of Plan A, B, or C as specified by the student’s advisory committee.

Appropriate research skills for Plan C are to be specified by the department on the basis of the student’s area of specialization and intended research. These skills include proficiency in computer programming language, special mathematical methods, applied statistical analysis, and special literature search techniques.

Mathematics electives (3 credits):

3450:xxx Approved Mathematics

Technical electives (2 credits):

3450:xxx Approved Mathematics
4300:681 Advanced Engineering Materials
4600:622 Continuum Mechanics
9841:xxx Approved Polymer Engineering
9871:613 Polymer Science Laboratory
9871:674 Polymer Structure and Characterization
9871:675 Polymer Thermodynamics

Polymer Engineering 700-level electives (10 credits):

9841:7xx Electives
Elettes may be taken from other departments such as polymer science, chemical engineering, mechanical engineering, physics, mathematics, computer science, or other engineering departments with the advisor’s approval.

Research (60 credits):

Students may take a combination of 9841:898 (Preliminary Research) and 9841:899 (Doctoral Dissertation) to meet this requirement, however, a minimum of 12 credits of the total 60 required must be of 9841:899.

Foreign Language Requirement:

Additionally, a foreign language or research technique (e.g., computer skill/statistics) is required for the Ph.D. degree in Polymer Engineering, using either Plan A, B, or C (see section under “Language Requirements” as described in this publication).

Take a Basic Engineering exam after the first Fall semester of study. The exam will cover heat transfer, fluid mechanics and solid mechanics, as determined by the department. If a student fails the examination or a portion of the examination he/she may be asked to take remedial undergraduate courses (at his/her own expense) or graduate level courses within one year from the date of the exam.

NOTE: Any student who successfully completes course 9841:650, Introduction to Polymer Engineering, with a “B” or better grade is deemed to have satisfied the requirement of the Basic Engineering exam and does not have to take the exam. Students who achieve a “B-” or lower in the course would still be required to take the exam.

Successfully complete six one-hour qualifying examinations within three semesters after admission into the program. The examinations shall cover graduate courses that the student has completed and basic undergraduate topics.

Each doctoral student must (1) pass a candidacy exam and (2) must present his/her research proposal for approval by the advisory committee within three years of entry into the program.

Each candidate must pass an oral examination in defense of the dissertation.

Submit the written Doctoral Dissertation to the Graduate School by the required deadlines.

A student receiving a Master of Science degree from The University of Akron in Polymer Engineering may use all lecture course credits toward the 36 lecture course credit requirement.

A student entering with a master’s degree or graduate credits from another institution may be given 18 credit hours toward the lecture course requirement.

Master of Science in Polymer Science (987010MS)

A minimum of 24 credits in appropriate courses in biology, chemistry, mathematics, physics, polymer science and engineering as prescribed by the advisory committee.

Completion of 11 of credits in the following required core courses in polymer science: 9871:601 Polymer Concepts; 613 Polymer Science Laboratory; 631 Physical Properties of Polymers I; 674 Polymer Structure and Characterization; 701 Polymer Technology.

Completion of 13 credit hours of elective courses appropriate to each student’s area of interest.

Completion of a research project (9871:699) and the resulting 6 credits.

Attendance at and participation in seminar-type discussions scheduled by the department. Credits for participation in either polymer science or polymer engineering seminars do not apply toward the degree.

Demonstrated competence in computer skills.

At least 12 credits of graduate coursework and all theses credits must be completed at the University.

Pass one cumulative exam.
### BS Natural Sciences-Polymer Chemistry/MS Polymer Science (987012MS)

In Northeast Ohio there is a growing demand for professionals trained in polymer chemistry. The polymer industry is one of the major industrial sectors of the economy of Ohio. The BS/MS Polymer Chemistry program was instituted to prepare students for jobs in this area. The program provides a quality undergraduate science degree coupled with a graduate degree from one of the premier polymer programs in the country.

Students who are admitted to this program can complete the undergraduate phase of the course of study in three years and then immediately begin graduate studies in polymer science. Under rare circumstances, a student can complete the undergraduate phase in four years after approval of his/her advisors. A student not proceeding to the graduate program in polymer science may complete the degree requirements for the BS Natural Sciences (Polymer Chemistry Concentration).

Students earn a bachelor’s degree in Natural Sciences from the Buchtel College of Arts and Sciences that is heavily weighted toward chemistry. They will be assigned an advisor in the Department of Chemistry and a co-advisor in the Department of Polymer Science, who will advise them throughout their undergraduate program. Once the undergraduate degree is completed students begin studies to earn a Master’s of Science from the College of Polymer Science and Polymer Engineering that will require two years of course work and research. The graduate degree requirements for the master’s portion of this accelerated program are the same requirements as those for the traditional master’s program in polymer science.

#### BE/MS Program with BE in Polymer Materials and Engineering at Beijing University of Chemical Technology and MS Polymer Science at UA (987013MS)

This five-year program involves initial completion of three years of BE coursework in Polymer Materials and Engineering at BUCT followed by two years of graduate coursework and research in the Department of Polymer Science at The University of Akron. BUCT will award the BE degree in Polymer Materials and Engineering to the students of this program after completion of the fourth year of coursework at The University of Akron.

Students will be admitted to the MS program at The University of Akron after completing the third year of BE coursework at BUCT. Students intends to pursue the BE/MS program will consult the faculty counselors both at BUCT and The University of Akron during their study at BUCT. The Graduate School at The University of Akron will handle their admission using a special category, and the admission committee of the Department of Polymer Science will evaluate the applications of potential students in their two year. The MS degree in Polymer Science is awarded at the completion of the MS degree requirements, which would typically be at the end of the fifth year.

Requirements for the master’s degree coursework at The University of Akron are identical to the standard requirements for the MS in Polymer Science.

#### Master of Science in Polymer Engineering (984010MSPE)

The major emphases of the graduate program in polymer engineering are in polymer processing, engineering performance and structural and rheological characterization of polymers.

Students in Polymer Engineering will earn the degree of Master of Science in Polymer Engineering. Requirements for the degree are as follows:

- **Complete courses as developed in a plan of study approved by the student’s advisor and the department chair.** At minimum of 30 credits of graduate coursework must be earned. A total of 24 credit hours of lecture courses and 6 credit hours of research must be completed.

- **Polymer engineering core (12 credits):**
  - 9841:611 Fundamentals of Polymer Structure Characterization 3
  - 9841:621 Rheology of Polymeric Fluids 3
  - 9841:622 Analysis and Design of Polymer Processing Operations I 3
  - 9841:631 Engineering Properties of Solid Polymers 3
  - 9841:641 Polymer Chemistry and Thermodynamics 3

- **Polymer engineering 600-level elective (6 credits):**
  - 9841:601 Polymer Engineering Seminar 1
  - 9841:623 Analysis and Design of Polymer Processing Operations II 3
  - 9841:650 Introduction to Polymer Engineering 3
  - 9841:651 Polymer Engineering Laboratory 3
  - 9841:661 Polymer Reactor Engineering 3
  - 9841:675 Carbon-Polymer Nanotechnology 3
  - 9841:680 Polymer Coatings 3

The Committee recommends 9841:651 to be compulsory for all full-time M.S. students, but it may be exempted as an elective for part-time students who are currently employed in polymer and related industries.

Master’s students are also required to take 9841:601 two (2) times. While the one credit earned in this course will count only one time toward degree requirements, both grades will be counted and calculated into the student’s GPA.

- **Technical electives (6 credits):**
  - 3450:xxx Approved Mathematics 3
  - 4300:681 Advanced Engineering Materials 3
  - 4600:622 Continuum Mechanics 3
  - 9841:xxx Approved Polymer Engineering 3
  - 9871:613 Polymer Science Laboratory 3
  - 9871:674 Polymer Structure and Characterization 2
  - 9871:675 Polymer Thermodynamics 2

- **Thesis (6 credits):**
  - 9841:699 Master’s Thesis 6

- **Students will take a Basic Engineering exam after their first Fall semester of study.** The exam will cover heat transfer, fluid mechanics and solid mechanics, as determined by the department. If a student fails the examination or a portion of the examination he/she may be asked to take remedial undergraduate courses (at his/her own expense) or graduate level courses within one year from the date of the exam. Students for whom the master’s degree is a terminal degree may be exempted from taking remedial courses with the approval of his/her advisor and the department chair. **NOTE:** Any student who successfully completes course 9841:650, Introduction to Polymer Engineering, with a “B” or better grade is deemed to have satisfied the requirement of the Basic Engineering exam and does not have to take the exam. Students who achieve a “B-” or lower in the course would still be required to take the exam.

- Each candidate must pass an oral examination in defense of the thesis.

- Submit the written master’s thesis to the Graduate School by the required deadlines.

### BS/MS Program in Applied Mathematics/Polymer Engineering (984021MSPE)

This is an accelerated five-year BS/MS program. After successfully completing this program, a student will receive a bachelor’s degree in applied mathematics as well as a master’s degree in polymer engineering. Under the supervision of faculty advisors in applied mathematics and polymer engineering, a student in the program will finish the core course requirements and most of the electives for the bachelor’s degree in the first three years. During the third year of the baccalaureate degree a student will formally apply to the program through the Graduate School. Upon acceptance a student will be cleared to complete the remaining electives of the bachelor’s degree and 30 credits of graduate work for the master’s degree in the last two years. A student will be eligible for a graduate assistantship only in these last two years and must be registered for at least nine graduate credits in each of those semesters.

Graduate coursework will include:

- 3450:539 Advanced Engineering Mathematics II* 3
- 9841:550 Engineering Properties of Polymers* 3
- 9841:601 Polymer Engineering Seminar** 1
- 9841:611 Fundamentals of Polymer Structure Characterization 3
- 9841:621 Rheology of Polymeric Fluids 3
- 9841:622 Analysis and Design of Polymer Processing Operations I 3
- 9841:641 Polymer Chemistry and Thermodynamics 3
- 9841:650 Introduction to Polymer Engineering 3
- 9841:651 Polymer Engineering Laboratory 3
- 9841:661 Polymer Reactor Engineering 3
- 9841:66x Electives 3
- 9841:699 Master’s Thesis 3

*These courses will be applied to the requirements of both the bachelor’s and master’s degree.

**Master’s students are required to take 9841:601 two (2) times. While the one credit earned in this course will count only one time toward degree requirement, both grades will be counted into the student’s GPA.

A student must maintain a 3.0 or better grade point average to stay in the program. If a student is not able to do this, then he or she will have the option to complete the regular bachelor’s degree program in applied mathematics or the Natural Sciences divisional major instead of the five-year accelerated plan.
BA/MS Program with BA Physics/Chemical Physics at the College of Wooster and MS Polymer Engineering at UA
(984030MSPE)

The five-year BA/MS program at The University of Akron with BA Physics/Chemical Physics at the College of Wooster and MS Polymer Engineering at UA is an accelerated program which involves initial completion of three years of BA coursework in Physics/Chemical Physics at the College of Wooster followed by two years of undergraduate and graduate coursework, along with graduate thesis work in the Department of Polymer Engineering, at The University of Akron. The College of Wooster will award the BA in Physics/Chemical Physics after completion of the fourth year of coursework at The University of Akron. Students intending to enroll in the BA/MS program will consult with the faculty counselors at both the College of Wooster and The University of Akron.

Students must apply to the Graduate School during the third year of the BA at the College of Wooster. The admissions committee of the Department of Polymer Engineering will evaluate applications of potential BA/MS students in their third year. Students will be admitted to the MS program at The University of Akron after completing three years of the BA at the College of Wooster. The MS in Polymer Engineering will be awarded at the completion of the fifth year when all graduate degree requirements have been successfully completed.

Students will receive tuition waivers for graduate courses taken at The University of Akron in the fourth and fifth year and will be eligible to receive stipends in their fifth year similar to other graduate students in Polymer Engineering when they are registered for at least nine graduate credit hours. Students should take at least 24 credits of graduate-level coursework, including two credits of 9841:601. In addition they should take at least six credits of master’s research. This curriculum represents the minimum graduate course requirements for the MS degree and students may take additional graduate technical electives during their fourth and fifth years.

Following are the courses required to be taken at The University of Akron:

Undergraduate Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3460:209</td>
<td>Introduction to Computer Science</td>
<td>4</td>
</tr>
<tr>
<td>3450:335</td>
<td>Introduction to Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>3450:427</td>
<td>Applied Numerical Methods I</td>
<td>3</td>
</tr>
<tr>
<td>4200:321</td>
<td>Transport Phenomena</td>
<td>3</td>
</tr>
<tr>
<td>4200:351</td>
<td>Fluid and Thermal Operations</td>
<td>3</td>
</tr>
</tbody>
</table>

Graduate Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>9841:550</td>
<td>Engineering Properties of Polymers</td>
<td>3</td>
</tr>
<tr>
<td>9841:601</td>
<td>Polymer Engineering Seminar</td>
<td>1</td>
</tr>
<tr>
<td>9841:611</td>
<td>Fundamentals of Polymer Structure Characterization</td>
<td>3</td>
</tr>
<tr>
<td>9841:621</td>
<td>Rheology of Polymeric Fluids</td>
<td>3</td>
</tr>
<tr>
<td>9841:622</td>
<td>Analysis and Design of Polymer Processing Operations I</td>
<td>3</td>
</tr>
<tr>
<td>9841:631</td>
<td>Engineering Properties of Solid Polymers</td>
<td>2</td>
</tr>
<tr>
<td>9841:641</td>
<td>Polymer Chemistry and Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>9841:650</td>
<td>Introduction to Polymer Engineering</td>
<td>3</td>
</tr>
<tr>
<td>9841:651</td>
<td>Polymer Engineering Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>9841:661</td>
<td>Polymerization Reactor Engineering</td>
<td>3</td>
</tr>
<tr>
<td>9841:699</td>
<td>Master’s Thesis</td>
<td>1-6</td>
</tr>
</tbody>
</table>

Other graduate courses that may be taken as electives:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>9841:623</td>
<td>Analysis and Design of Polymer Processing Operations II</td>
<td>3</td>
</tr>
<tr>
<td>9841:675</td>
<td>Carbon-Polymer Nanotechnology</td>
<td>3</td>
</tr>
<tr>
<td>9841:680</td>
<td>Polymer Coatings</td>
<td>3</td>
</tr>
</tbody>
</table>

BE/MS Program with BE in Polymer Materials and Engineering at Beijing University of Chemical Technology and MS Polymer Engineering at UA
(984040MSPE)

This five-year program involves initial completion of three years of BE coursework in Polymer Materials and Engineering at BUCT followed by two years of graduate coursework and research in the Department of Polymer Engineering at The University of Akron. BUCT will award the BE degree in Polymer Materials and Engineering to the students of this program after completion of the fourth year of coursework at The University of Akron.

Students will be admitted to the MS program at The University of Akron after completing three years of BE at BUCT. Students intending to enroll in the BE/MS program will consult the faculty counselors both at BUCT and The University of Akron during their study at BUCT. The Graduate School at The University of Akron will handle their admission using a special category, and the admissions committee of the Department of Polymer Engineering will evaluate the applications of potential students in their third year. The MS degree in Polymer Engineering is awarded at the completion of the MS degree requirements, which would typically be at the end of the fifth year.

Requirements for the master's degree coursework at The University of Akron are identical to the standard requirements for the MS in Polymer Engineering.
Interdisciplinary and Certificate Programs of Study

Overview
To add to the dimensions of the traditional disciplines, the University has established interdisciplinary and interdepartmental programs of study. In addition to a major, the student may elect to pursue one of these programs. Interdisciplinary Studies programs feature courses which integrate and analyze issues and concepts from more than one field. The goal of this type of study is to place knowledge into greater perspective than would be possible through any one traditional field. This is accomplished by taking courses from a variety of departments as well as courses which may be team taught.

Upon completion of any of these programs, a statement will be placed on the student’s permanent record indicating the area of concentration. The certificate indicating the area of concentration will be awarded when the student completes requirements for a degree unless the program specifies that it is free-standing and does not require participation in a degree program.

ACUTE CARE NURSE PRACTITIONER (820007GC)
The Post-Master’s Acute Care Nurse Practitioner certificate program prepares acute care nurse practitioners to provide advanced practice nursing care to acutely and/or critically ill adults. The program requires one calendar year of intense study including advanced clinical practice and theory. The program is built upon a core of advanced assessment, pathophysiology, and pharmacology. Acute Care Nurse Practitioners are prepared to conduct comprehensive physical assessments, appraise health risks and promote health behaviors, order and interpret diagnostic tests, diagnose and manage commonly occurring health problems and diseases. The program consists of 16 credits of graduate level course work and 525 hours of clinical practice.

Admission Criteria
Hold an MSN degree from a professionally accredited nursing program.
- Minimum of a 3.0 GPA on a 4.0 scale for the master’s degree program.
- Recent acute/critical care experience (within the past three years).
- A 300 word essay describing professional goals.
- Completion of the following prerequisite courses: graduate level pharmacology, pathophysiology, and advanced assessment.
- Completion of an interview with the selection committee.

Advanced Cardiac Life Support (ACLS) Certification.

Program of Study
8200:691 Acute Care Nurse Practitioner I 4
8200:692 Clinical Management II 3
8200:693 Acute Care Nurse Practitioner II 4
8200:695 Acute Care Nurse Practitioner III 4
8200:696 Clinical Reasoning 1
Total 16

ADDITION COUNSELING (560102GC)
Robert C. Schwartz, Ph.D., Coordinator
(Admissions to this program are currently suspended)
The Addiction Counseling certificate program prepares master’s-level practitioners to assess, diagnose, and treat persons with addictive disorders using various counseling strategies. Trainees will complete coursework related to theory, assessment, treatment planning, and treatment of addicted clientele. Trainees will then gain supervised clinical experience specifically related to counseling clients with addictive disorders. Licensed mental health practitioners may list addiction counseling under their identified scope of practice after completion of this certificate program.

Admission
Persons are eligible for admission to the Graduate Certificate Program in Addiction Counseling if they are currently enrolled in a master’s degree program in counseling or a closely related field or currently hold a master’s degree in counseling or a closely related field. To participate in the program the student should:
- Be formally admitted to The University of Akron as a degree seeking or a special non-degree graduate student.
- Make written application to the program to the Counselor Education Coordinator in the Department of Counseling and Special Education.
- Receive written notification for admission from the Counselor Education Admissions Committee.
- Consult with the Counselor Education Program Coordinator to plan for an internship in an appropriate addictions counseling setting.

Requirements
5600:732 Addiction Counseling I: Theory and Assessment 3
5600:734 Addiction Counseling II: Treatment Planning and Intervention Strategies 3
5600:685 Internship in Counseling 6
Total credit hours 12

ADULT/GERONTOLOGICAL HEALTH NURSING CLINICAL NURSE SPECIALIST (820104GC)
The Post-MSN certificate program of 10-12 credit hours is designed for those nurses with a Master’s Degree in Nursing who want to complete the additional coursework required to sit for national certification as a Clinical Nurse Specialist in Medical Surgical Nursing or Gerontological Nursing. The Post-MSN Adult/Gerontological Health Nursing CNS Certificate Program prepares nurses to assume advanced practice positions in a variety of complex health systems environments providing leadership in interdisciplinary care. Post MSN students who do not have a clinical master’s degree will be assessed on an individual basis and may be required to take additional clinical coursework to achieve competencies required to be eligible to sit for certification.

Program of Study
Prerequisite Courses:
8200:608 Pathophysiological Concepts 3
8200:610 Advanced Adult/Gerontological Assessment 3
8200:612 Advanced Clinical Pharmacology 3

Post MSN Adult/Gerontological Health Nursing CNS Certificate Program Courses:
8200:677 Adult/Gerontological Health Nursing CNS III 2
8200:678 Adult/Gerontological Health Nursing CNS III Practicum 2
8200:673 Adult/Gerontological Health Nursing CNS IV 1
8200:679 Adult/Gerontological Health Nursing CNS IV Practicum 3
8200:636 Adult/Gerontological Health Nursing CNS Residency 2-4
Total 10-12

Total 10-12 credit hours contingent on individual program plan and completion of clinical hours required for certification.

ADULT/GERONTOLOGICAL NURSE PRACTITIONER (820009GC)
The Post-MSN certificate program is designed to prepare Adult/Gerontological Clinical Nurse Specialists who are seeking preparation in the role of nurse practitioner as providers of primary health care to adults and older adults. Upon completion of the 18 credit program, the student is eligible to sit for Nurse Practitioner certification examination.

Admission Criteria
Ohio RN licensure.
Hold an MSN degree from a professionally accredited nursing program (clinical master’s preferred).
- Have a minimum GPA of 3.0 on a 4.0 scale for MSN program.
- Minimum of 2-3 years recent clinical experience in adult or gerontological health care.
- Complete an application to The University of Akron Graduate School.
- Submit a 300 word essay describing professional goals.
- Submit a resume outlining prior education and work related experiences.
- Complete the following prerequisite courses: graduate level pathophysiology, advanced assessment, advanced clinical pharmacology.
- Completion of an interview with the Adult/Gerontological Health Nursing faculty.

Program of Study
Students must complete a minimum of 500 clinical hours for eligibility to sit for certification.

Required Courses:
8200:627 Adult/Gerontological Health Nursing NP I Practicum 2
8200:628 Adult/Gerontological Health Nursing NP II Practicum 2
8200:629 Adult/Gerontological Health Nursing NP III Practicum 2
8200:623 Adult/Gerontological Health Practicum NP 2
ADVANCED CERTIFICATE IN FAMILY CONFLICT AT THE CENTER FOR CONFLICT MANAGEMENT (300010GC)

The University of Akron has a long history of the interdisciplinary study of conflict, because understanding the nature of conflict is the first step toward reducing conflict and violence at home, in our communities, workplaces, and schools. This graduate certificate, jointly administered by the departments of Political Science and Sociology, will build on that tradition to enhance the capacity of students to effectively work toward reducing the harms associated with family conflict and violence.

Required Core Courses:
- Conflict Analysis Core Courses
  - 3700:622 Seminar in Alternatives to Violence at Home and Abroad 3
  - 3850:555 Family Violence 3

Skill Development Core Courses
- 7400:585-008 Seminar: General Mediation Training 3
- 7400:585-007 Seminar: Divorce Mediation Training 3

Elective Courses: (choose two):
- 3850:523 Sociology of Women 3
- 3850:528 Victim in Society 3
- 3700:690 Special Topics (conflict related) 1-3
- 9200:638** Family Law 3
- 9200:684** Alternative Dispute Resolution 3

*Law School classes are offered on a space available basis and require the permission of instructor

Total credit hours: 16

Electives: (required – 6 credits): Three credits selected from the following:
- 3700:570 Campaign Management I 3
- 3700:571 Campaign Management II 3
- 3700:672 Seminar: Political Influence and Organizations 3
- 3700:695 Internship in Government and Politics 3

Certificate
Upon completion of their degree, M.A. in Political Science students who have completed certificate requirements will be awarded an M.A. degree in Political Science with a Certificate in Applied Politics. Majors in other disciplines will be given a Certificate in Applied Politics and have the certificate noted on their transcript.

ADVANCED CERTIFICATE IN GLOBAL CONFLICT AT THE CENTER FOR CONFLICT MANAGEMENT (300011GC)

The University of Akron has a long history of the interdisciplinary study of conflict, because understanding the nature of conflict is the first step toward reducing conflict and violence at home, in our communities, workplaces, and schools. This graduate certificate, jointly administered by the departments of Political Science and Sociology, will build on that tradition to enhance the capacity of students to effectively work toward reducing the harms associated with global conflict and violence.

Required Core Courses:
- Conflict Analysis Core Courses
  - 3700:622 Seminar in Alternatives to Violence at Home and Abroad 3
  - 3850:555 Family Violence 3

Skill Development Core Courses
- 7400:585-008 Seminar: General Mediation Training 3
- 7400:585-007 Seminar: Divorce Mediation Training 3

Elective Courses: (choose three)*
- 3850:521 Race and Ethnic Relations 3
- 3700:512 Global Environmental Politics 3
- 3700:610 Seminar in International Politics 3
- 3700:690 Special Topics (global conflict related) 1-3

*To complete the certificate, students must submit a seminar paper from one of their courses selected from the electives list to the Director of the Center for approval as a scholarly investigation of the issues surrounding global conflict.

Total credit hours: 19

Electives: (required – 6 credits): Three credits selected from the following:
- 3700:540 Survey Research Methods 3
- 3700:572 Campaign Finance 3
- 3700:574 Political Opinion, Behavior and Electoral Policies 3
- 3700:577 Lobbying 3
- 3700:655 Campaign and Election Law 3
- 7600:575 Political Communication 3

Certificate
Upon completion of their degree, M.A. in Political Science students who have completed certificate requirements will be awarded an M.A. degree in Political Science with a Certificate in Applied Politics. Majors in other disciplines will be given a Certificate in Applied Politics and have the certificate noted on their transcript.

ASIAN STUDIES GRADUATE CERTIFICATE (34001GC)

Dr. Janet Klein, Director
Department of History, (330) 972-2562 or klein@uakron.edu

The graduate certificate in Asian Studies offers students a multidisciplinary course of study that will provide them with in-depth training in a special area that may be particularly useful as they pursue careers in such fields as Academia, Law, Public History, Education, Business, or Medicine where they will practice their profession abroad or use their international experience to expand their understanding of these regions as they work with topics on or populations from diverse societies in Asia. The certificate complements any graduate major and is also appropriate for students with a graduate degree who might like to return to the university for mid-career training.

Requirements
Two years of an Asian language (or equivalent), which serves as the program’s core requirement plus four courses of approved electives. A minimum 3.0 grade point average in the courses that will fulfill the certificate. The student must be in good academic standing in his/her major department if enrolled in a degree program.
**Language Core:**
The entering student who does not have proficiency in an Asian language will have to satisfy the language requirement by completing two years of an Asian language offered by The University of Akron or any other accredited institution. Students may also fulfill the language requirement by demonstrating competency in the equivalent of a fourth-semester level of his/her chosen language at the FS-1 level (U.S. Department of State) or equivalent level. Currently, The University of Akron offers the following:

- 3300:101 Beginning Chinese 4
- 3300:500 Women in Revolutionary China 4
- 3400:516 Modern India 3
- 3400:596 Special Studies (in Asian History) 3
- 3400:610 Comparative Studies in World Civilization 4
- 3400:640 Reading Seminar: China 4
- 7100:501 Special Topics 3

*Field Studies in Geology abroad counts for double credits.

**Recent 500-level Selected Topics in the School of Art have included “The Art of India,” “The Art of Korea and Japan,” and “The Art of Buddhist Japan.”

Courses with comparative content are encouraged. Any course that has significant Asian content (and for which the student has presented substantial written work on an Asian topic) may count toward the certificate program with the Director’s approval. Students should consult with the Director for help planning an appropriate course of study.

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**CASE MANAGEMENT FOR CHILDREN AND FAMILIES**

(H40202GC)

Pamela A. Schluz, Ph.D., Coordinator

**Program**

This certificate program is a special course of study which can be added to any graduate degree program. It may also be completed by a non-degree graduate student with special permission from the director of the Center for Family Studies. This certificate represents a concentration in theoretical and practical knowledge in collaborative cross-systems case management for children and families in the context of community-based services. This course of study promotes collaboration among disciplines and services.

**Admission**

To participate in the program the student should:

- Be formally admitted to The University of Akron as a postbaccalaureate, graduate or non-degree graduate student.
- Make written application to the program and receive written notification of admission from The Center for Family Studies.

**Requirements**

**Core:**

Students should successfully complete all three of the core courses listed below. However, the first two courses plus three hours of electives must be completed prior to the student’s enrollment in the practicum course.

- 7400:561 Case Management for Children and Families I 3
- 7400:562 Case Management for Children and Families II 3
- 7400:563 Practicum in Cross-Systems Case Management for Children and Families 3

**Electives:**

Students must successfully complete six credits of coursework selected from the various departmental courses listed below.

- **Family and Consumer Sciences**
  - 7400:501 American Families in Poverty (online) 3
  - 7400:504 Middle Childhood and Adolescence 3
  - 7400:540 Family Crisis 3
  - 7400:546 Culture, Ethnicity and the Family (online) 3
  - 7400:602 Family in Life-Span Perspective 3
  - 7400:610 Child Development Theories 3
  - 7400:651 Family and Consumer Law 3
  - 7400:665 Development in Infancy and Early Childhood 3

- **Home-Based Intervention**
  - 1820:503 Home-Based Intervention Theory 3
  - 1820:504 Home-Based Intervention Techniques and Practice 3

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**CHILD AND ADOLESCENT HEALTH NURSE PRACTITIONER**

(820006GC)

The Post-MSN Child and Adolescent Health Nurse Practitioner certificate program is designed for those nurses who hold the Master of Science in Nursing degree and are seeking preparation for the role of the pediatric nurse practitioner. Upon completion of the 17 credit hour program, the students are eligible to sit for the pediatric nurse practitioner certification examination.

**Admission**

Admission criteria include the following:

- Hold an MSN degree from a professionally accredited nursing program.
- Minimum of a 3.0 GPA on a 4.0 scale for the master’s degree program.
- A minimum of one year of clinical experience in a pediatric setting.
- Complete an interview with the program coordinator.

Completion of the following prerequisite courses: Pathophysiological Concepts, Advanced Pediatric/Adolescent Assessment, Nutrition.

**Program of Study**

Students are required to complete a minimum of 500 clinical practice hours in conjunction with the Child and Adolescent Health Nursing courses.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:651</td>
<td>Child and Adolescent Health Nursing I</td>
<td>3</td>
</tr>
<tr>
<td>8200:652</td>
<td>Child and Adolescent Health Nursing I Practicum</td>
<td>2</td>
</tr>
<tr>
<td>8200:655</td>
<td>Child and Adolescent Health Nursing II</td>
<td>3</td>
</tr>
<tr>
<td>8200:653</td>
<td>Child and Adolescent Health Nursing II Practicum</td>
<td>2</td>
</tr>
<tr>
<td>8200:656</td>
<td>Pharmacology for Child and Adolescent Health Nursing</td>
<td>3</td>
</tr>
<tr>
<td>8200:658</td>
<td>Child and Adolescent NP Internship (required 4 credits)</td>
<td>1-4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

*One credit hour requires five hours of supervised clinical practice. Students may be required to complete additional acute care clinical hours to achieve required competencies to sit for certification and the CAH NP Residency.

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**CHILD AND ADOLESCENT HEALTH NURSE NURSING-ACUTE CARE**

(820103GC)

The Post-MSN Child and Adolescent Health Nursing-Acute Care certificate program is designed for those pediatric nurses who hold the MSN and are seeking preparation as pediatric acute care nurse practitioners. Post MSN students will be assessed on an individual basis and may be required to complete additional courses from the Child and Adolescent Health Nursing track in order to achieve the competencies required to sit for certification as a pediatric acute care nurse practitioner.

**CAH Post-MSN Prerequisite Courses:**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:585</td>
<td>Nutrition for the Pediatric Nurse Practitioner</td>
<td>2</td>
</tr>
<tr>
<td>8200:608</td>
<td>Pathophysiological Concepts of Nursing Care</td>
<td>3</td>
</tr>
<tr>
<td>8200:650</td>
<td>Advanced Pediatric/Adolescent Assessment</td>
<td>3</td>
</tr>
<tr>
<td>8200:656</td>
<td>Pharmacology for Child and Adolescent Health Nursing</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>11-14</strong></td>
</tr>
</tbody>
</table>

**CAH Post-MSN Certificate Program Courses:**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>8200:665</td>
<td>CAH Acute Care III</td>
<td>3</td>
</tr>
<tr>
<td>8200:666</td>
<td>CAH Acute Care IV Practicum</td>
<td>2</td>
</tr>
<tr>
<td>8200:667</td>
<td>CAH Acute Care IV</td>
<td>3</td>
</tr>
<tr>
<td>8200:668</td>
<td>CAH Acute Care IV Practicum</td>
<td>2</td>
</tr>
<tr>
<td>8200:658</td>
<td>Child and Adolescent Health NP Residency (required 4 credits)</td>
<td>1-4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

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**COMPOSITION**

(330002GC)

Lance Svehla, Ph.D., Director

**Requirements**

To be eligible for the certificate in composition, a person must be admitted to the University as a graduate student (with either full or provisional status). An eligible person interested in the program should contact the program director. Five courses in composition are required.

**Required Courses (6 credits):**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3300:673</td>
<td>Theories of Composition</td>
<td>3</td>
</tr>
<tr>
<td>3300:674</td>
<td>Research Methodologies in Composition</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3300:676</td>
<td>Theory and Teaching of Basic Composition</td>
<td>3</td>
</tr>
</tbody>
</table>
DIVORCE MEDIATION
(H4201GC)

Pamela A. Schulze, Ph.D., Coordinator

Requirements

This graduate certificate program in divorce mediation requires a minimum of 15 graduate credits dependent upon previous educational background. The program has been designed to serve the practicing or prospective divorce mediator.

All applicants to the program should have previously earned a law degree or a master’s degree (at minimum in the behavioral sciences, such as psychology, social work, counseling, and marriage and family therapy, or child and family development). Applicants planning to pursue the certificate must apply to the Center for Family Studies and the Graduate School for admission as non-degree students. Persons currently working toward a doctorate or Juris Doctor at the University may participate in the certificate program as a cognate or minor. In this case, students must receive permission from their academic department as well as admission from the Center for Family Studies. Since the educational preparation prior to entry to this program will be quite diverse, the selection of courses within the certificate will vary among the participants. However, all students are expected to complete the core courses in addition to 10 credit hours selected from among several disciplines related to divorce mediation.

Core:

1800:601 Divorce Mediation 3
1800:602 Divorce Mediation Practicum 2

Select at least one from each area:

- Law
  9200:638 Family Law 3

- Accounting
  6200:601 Financial Accounting 3
  9200:621 Accounting for Lawyers 3

- Family
  5600:655 Marriage and Family Therapy: Theory and Techniques 3
  5600:667 Marital Therapy 3
  7400:607 Family Dynamics 3

Electives:

Students who have already completed coursework in Law, Accounting or Family may select from courses listed below:

5600:647 Career Counseling 3
5600:669 Systems Theory in Family Therapy 3
7400:540 Family Crisis 3
7400:590 W. Family and Divorce 2
7400:602 Family in Life-Span Perspective 3
9200:684 Alternate Dispute Resolution 3

EDUCATIONAL ASSESSMENT AND EVALUATION
(510004GC)

The certificate in Educational Foundations emphasizing Educational Assessment and Evaluation prepares teachers and other educators to be leaders in the area of school-based assessment and evaluation. Students will develop skills in assessing a variety of student outcomes and in conducting classroom, school or building-level, and district-level evaluations. The certificate is offered fully online. Eighteen credit hours are required to earn the certificate. The following skill-set describes the overall goals of the program.

- Designing and implementing formative and summative assessments;
- Analyzing and interpreting assessment data to improve teaching and learning;
- Applying evaluation theory and diverse approaches in authentic situations;
- Implementing assessment and evaluation to impact practices at the classroom, school, and district level;
- Locating, analyzing, interpreting, and using multiple data sources to make data-evidenced decisions.

Required Courses:

5100:640 Techniques of Research 3
5100:642 Introduction to Classroom Assessment for Teachers 3
5100:650 Implementing Assessment in the Classroom 3
5100:651 Data-Driven Decision Making for Educators 3
5100:652 Introduction to Educational Evaluation 3
5100:653 Practical Applications of Educational Evaluation 3

E-BUSINESS
(650108GC)

B. S. Vijayaraman, Ph.D., Director

A new breed of technologies have offered new vistas and business opportunities. These technologies (called Web 2.0) have created possibilities for organizations to be innovative by incorporating internet social network and community tools such as blogs, wikis, and mashups. These technologies have also opened up new avenues and business models for entrepreneurs. The e-business certificate program is designed for students to learn how individuals can create exciting business opportunities on the internet. Persons are eligible for admission to the graduate certificate program if they have been admitted to the Graduate School at The University of Akron. Students admitted to the e-business certificate program may enroll only in those courses required for the completion of the certificate.

Persons wanting to enroll in a CBA graduate certificate program must already be accepted into a graduate or professional degree program or already possess a graduate or professional degree.
Admission Criteria
This certificate is designed primarily for students with a B.S. degree in Civil Engineering or a closely related field.

Program of Study
Civil Engineering students may earn an Environmental Engineering Certificate by completing a total of 18 credit hours.

- 4300:523 Chemistry for Environmental Engineers 3
- 4300:526 Environmental Engineering Design 3
- 4300:527 Water Quality Modeling and Management 3
- 4300:623 Physical/Chemical Treatment Processes 3
- 4300:624 Biological Wastewater Treatment Processes 3
- 4300:631 Soil Remediation 3

ENVIRONMENTAL STUDIES
(337004GC)
Ira D. Sasowsky, Ph.D., Director

Program
This graduate certificate program is designed for environmental professionals who wish to broaden their background or update their skills. In order to satisfy the course prerequisites, it is recommended that students have an undergraduate degree in one of the natural sciences, engineering, or a strong background in mathematics and science. For advising please contact the Department of Geology and Environmental Science.

Requirements
A plan of study will be developed in consultation with the Director of the Center for Environmental Studies. Students must complete the core requirement and a minimum of 14 credits from the list of electives or other courses approved by the Director. Electives must be selected from a minimum of three different departments.

Core (required):
- 3370:580 Seminar in Environmental Studies 2

Electives (minimum of 14 credits):
- 3100:500 Food Plants 2
- 3100:521 Tropical Field Biology 4
- 3100:526 Wetland Ecology 4
- 3100:660 Environmental Physiology 3
- 3100:624 Advanced Aquatic Ecology 4
- 3350:505 Geographic Information Systems 3
- 3350:507 Advanced Geographic Information Systems 4
- 3350:547 Remote Sensing 3
- 3350:549 Advanced Remote Sensing 3
- 3350:595 Soil and Water Field Studies 3
- 3370:511 Glacial Geology 3
- 3370:570 Geochemistry 3
- 3370:574 Groundwater Hydrology 3
- 3370:580 Seminar in Environmental Studies 2
- 3370:661 Geologic Record of Past Global Change 3
- 3370:674 Advanced Groundwater Hydrology 3
- 3400:571 American Environmental History 3
- 3470:561 Applied Statistics I 4
- 3700:512 Global Environmental Politics 3
- 3850:686 Population 3
- 4200:963 Pollution Control 3
- 4200:750 Advanced Pollution Control 3
- 4300:523 Chemistry for Environmental Engineers 3
- 4300:526 Environmental Engineering Design 3
- 4300:527 Water Quality Modeling and Management 3
- 4300:528 Hazardous and Solid Wastes 3
- 4300:620 Sanitary Engineering Problems 2
- 4300:621 Environmental Engineering Principles 4
- 4300:631 Soil Remediation 3
- 4300:731 Bioremediation 3
- 5020:681 Environmental Law 3

FAMILY NURSE PRACTITIONER CERTIFICATE FOR CERTIFIED PNPs
(820106GC)
The Post-MSN Family Nurse Practitioner Certificate program is designed for those nurses who hold the master’s degree in Child and Adolescent Health or Pediatric Nursing, are certified as Pediatric Nurse Practitioners, and are seeking preparation to practice as a family nurse practitioner. Upon completion of the 16-18 credit hour program, students are eligible to sit for the family nurse practitioner certification examination.

Prerequisites:
- 5600:648 Individual and Family Development Across the Life-Span 3
- 8200:652 Advanced Adult/Gerontological Assessment/FNP 2
- 8200:612 Advanced Clinical Pharmacology 3

Required Courses:
- 8200:620 Adult/Gerontological Health Nursing I 2
- 8200:622 Adult/Gerontological Health Nursing NP III 3
- 8200:625 Primary Care of the OB Patient for the Family Nurse Practitioner 1
- 8200:690 Clinical Management I 3
- 8200:692 Clinical Management II 3
- 8200:694 Clinical Management III 3
- 8200:626 Adult/Gerontological NP Residency (consisting of 225-300 clinical hours) 1-4

FAMILY NURSE PRACTITIONER CERTIFICATE FOR ADULT AND/OR GERONTOLOGICAL NPs
(820107GC)
The Post-MSN Family Nurse Practitioner Certificate program is designed for those nurses who hold the master’s degree in Adult and/or Gerontological Nursing, are certified as Adult or Gerontological Nurse Practitioners, and are seeking preparation to practice as a family nurse practitioner. Upon completion of the 17-18 credit hour program, students are eligible to sit for the family nurse practitioner certification examination.

Required Courses:
- 5600:648 Individual and Family Development Across the Life-Span 3
- 8200:616 Advanced Pediatric/Adolescent Assessment/FNP 2
- 8200:617 Advanced Pharmacology: Child/Adolescent Health Nursing/FNP 2
- 8200:625 Primary Care of the OB Patient for the Family Nurse Practitioner 1
- 8200:651 Child and Adolescent Health Nursing I 3
- 8200:655 Child and Adolescent Health Nursing II 3
- 8200:655 CAH: NP Residency (consisting of 225 clinical hours) 1-4

GRADUATE CERTIFICATE IN GENDER CONFLICT AT THE CENTER FOR CONFLICT MANAGEMENT
(300014GC)
An 18 credit graduate certificate offering graduate students an opportunity to examine the scholarly debates surrounding gender conflicts.

Required Courses:
- 3700:522 Understanding Racial and Gender Conflict 3
- 5950:547 Sociology of Sex and Gender 3

Electives:
- 3700:502 Politics and the Media 3
- 3700:622 Seminar in Alternatives to Violence at Home and Abroad 3
- 3850:646 Social Inequalities 3
- 3850:510 Social Structures and Personality 3
- 3850:541 Sociology of Law 3
- 3850:555 Family Violence 3
- 3850:753 ST: Gender and Crime 3
- 3230:516 Anthropology of Sex and Gender 3
- 3230:563 Social Anthropology 3
- 3300:589 Seminar in English: Subversive Women 3
- 3300:589 Seminar in English: British Women Writers 3
- 3400:593 Special Studies: Women, Film, and History 3
- 3400:669 Reading Seminar in American History Since 1877 (US Women's History) 4

GRADUATE CERTIFICATE IN CROSS-CULTURAL NEGOTIATION
(370013GC: South and East Asia Track)
(370014GC: Middle Eastern Track)

South and East Asian Track
Conflict Core (6 credits):
- 3700:622 Alternatives to Violence at Home and Abroad 3
- 6050:575 Business Negotiations 3

Language Core (6 credits):
- Complete second year Chinese or Japanese Language, or complete second year language work in another South or East Asian Language at an institution approved by the Director; or an equivalent approved by the Director.
Consistent with the program objectives. Please note: There are no substitutions for the elective credits from among courses taken from more than two departments. Students are encouraged to speak with the Director, who can approve substitution courses for these elective credits. Complete second year language work on a Middle Eastern Language at an institution approved by the Director; or an equivalent approved by the Director.

Middle Eastern Track

Electives (9 credits):
- 3350:560 Economics of Developing Countries 3
- 3350:561 Principles of International Economics 3
- 3400:516 Modern India 3
- 3400:550 Women in Revolutionary China 3
- 3400:610 Graduate Reading Seminar: Comparative Studies: World Civilization 3
- 3700:610 Seminar in International Politics 3
- 3700:620 Seminar in Comparative Politics 3
- 3850:555 Family Violence 3
- 3850:521 Racial and Ethnic Relations 3
- 5500:590 China for Educators 3
- 6600:630 International Marketing Policies 3
- 7600:550 Communication in Conflict 3
- 7600:645 Intercultural Communication Theory 3
- 9200:684* Alternative Dispute Resolution 3
- 3700:695 Internship (Student Conference on Cross-Cultural Negotiation or related project involving language immersion with approval of Director) 3-6

*Law School classes are offered on a space availability basis only.

Language Core (6 credits):
- 3700:620 Alternatives to Violence at Home and Abroad 3
- 6600:575 Business Negotiations 3

Electives (9 credits):
- 3250:560 Economics of Developing Countries 3
- 3350:561 Principles of International Economics 3
- 3400:593 Special Studies in History: Ottoman State and Society 1300-1922 3
- 3400:594 Special Studies in History: Women and Gender in the Middle East 3
- 3400:610 Graduate Reading Seminar: Comparative Studies: World Civilization 3
- 3400:640 Graduate Reading Seminar: Orientalism and its Discontents: Critical Approaches to Middle Eastern Histories and Historiographies 3
- 3700:505 Politics of the Middle East 3
- 3700:610 Seminar in International Politics 3
- 3700:620 Seminar in Comparative Politics 3
- 3850:555 Family Violence 3
- 3850:521 Racial and Ethnic Relations 3
- 5500:590 China for Educators 3
- 6600:630 International Marketing Policies 3
- 7600:550 Communication in Conflict 3
- 7600:645 Intercultural Communication Theory 3
- 9200:684* Alternative Dispute Resolution 3
- 3700:695 Internship (Student Conference on Cross-Cultural Negotiation or related project involving language immersion with approval of Director) 3-6

*Law School classes are offered on a space availability basis only.

Requirements

Students must select their electives from only one of the above two tracks and electives must include courses taken from more than two departments. Students are encouraged to speak with the Director, who can approve substitution courses for these elective credits from among special topics classes or other classes that the student persuasively demonstrates to be consistent with the program objectives. Please note: There are no substitutions for the Conflict Core classes.

GRADUATE CERTIFICATE IN GEOGRAPHIC INFORMATION SCIENCES (335008GC)

NOTE: The Graduate Certificate in Geographic Information Sciences is now being administered by the Department of Geology and Environmental Science.

Program

The geographic information sciences (GISci) integrate concepts, methods, and tools for collecting, analyzing, and visualizing spatial data, including physical, environmental, social, and economic information. An education in this rapidly growing professional and scientific field leads to careers in the public and private sectors as GIST scientists, as geographic information systems (GIS) analysts, programmers, or technicians, or as cartographers or remote sensing analysts.

This graduate certificate can be taken by degree-seeking students in geology, biology, business, engineering, computer science, emergency management, anthropology, political science, public administration, geography, and other related disciplines. It can also be taken as a freestanding certificate by non-degree seekers such as professionals who want to enhance their knowledge and skills as well as by anyone who wants to learn about this rapidly advancing scientific and practical field.

Requirements

Geotechniques Electives (9 credits):
- 3350:507 Advanced Geographic Information Systems 3
- 3350:541 Global Positioning Systems (GPS) 3
- 3350:542 Cartographic Theory and Design 3
- 3350:544 Applications in Cartography and Geographic Information Systems 3
- 3350:545 GIS Database Design 3
- 3350:546 GIS Programming and Customization 3
- 3350:549 Advanced Remote Sensing 3
- 3350:551 Research Methods in Geography and Planning 3
- 3350:583 Spatial Analysis 3
- 3350:596 Field Research Methods 3

Geotechniques Electives (9 credits):
- 3350:550 Economics of Developing Countries 3
- 3350:551 Principles of International Economics 3
- 3400:516 Modern India 3
- 3400:550 Women in Revolutionary China 3
- 3400:610 Graduate Reading Seminar: Comparative Studies: World Civilization 3
- 3700:610 Seminar in International Politics 3
- 3700:620 Seminar in Comparative Politics 3
- 3850:555 Family Violence 3
- 3850:521 Racial and Ethnic Relations 3
- 5500:590 China for Educators 3
- 6600:630 International Marketing Policies 3
- 7600:550 Communication in Conflict 3
- 7600:645 Intercultural Communication Theory 3
- 9200:684* Alternative Dispute Resolution 3
- 3700:695 Internship (Student Conference on Cross-Cultural Negotiation or related project involving language immersion with approval of Director) 3-6

*Law School classes are offered on a space availability basis only.

GEOTECHNICAL ENGINEERING (430008GC)

This certificate program provides practicing professionals an opportunity to expand their knowledge base in geotechnical engineering. It is designed for people who cannot make the full-time commitment to the graduate degree program but would like to receive recognition of their continued effort in the area of study or would like to cumulate credit hours toward their ultimate graduate degree goal.

Admission Criteria

This certificate is designed primarily for students with a B.S. degree in Civil Engineering or a closely related field.

Program of Study

Civil Engineering students may earn a Geotechnical Engineering Certificate by completing a total of 15 credit hours.

At least three (3) of the following courses must be taken:
- 4300:612 Advanced Soil Mechanics 3
- 4300:613 Foundation Engineering I 3
- 4300:615 Foundation Engineering II 3
- 4300:617 Numerical Methods in Geotechnical Engineering 3
- 4300:717 Soil Dynamics 3

Four of the following workshop courses may be taken and substituted for two (2) of the courses above:
- Load and Resistance Factor Design of Foundations and Geotechnical Features 1.5
- Ground Improvement Methods 1.5
- Mechanically Stabilized Earth Walls and Reinforced Soil 1.5
- Stipes 1.5
- Deep Foundations 1.5

Students interested in these workshop courses should contact the Department of Civil Engineering.

GERONTOLOGY (300006GC)

Harvey L. Sterns, Ph.D., Director

Requirements

This certificate program is a special course of study in gerontology that complements graduate degree programs in various departments and colleges throughout the University. There is a combined graduate certificate program with Kent State University. Combined, the two universities offer a diverse range of graduate courses with aging-related content and joint faculty that are nationally and internationally recognized scholars in gerontology. The graduate certificate is to be received with either a master’s or doctoral degree. Individuals who already hold a graduate degree may also pursue the certificate. The program represents a concentration involving current knowledge and research in gerontology. It adds another dimension to the knowledge and skills a student is able to offer in the many professions that are becoming specialized in research and service to adults and older adults. This course of study coordinates multidisciplinary training of personnel in adult development and aging and helps to meet the critical shortage of trained individuals in the field of gerontology.

The graduate curriculum committee of the Institute for Life-Span Development and Gerontology will oversee this certificate program and certify, through the director of the Institute, that all requirements of the certificate have been completed.

B.S.M.D. students may complete Practicum/Internship and electives from courses available from the Institute or the Office of Geriatric Medicine and Gerontology, Northeast Ohio Medical University (NEOMED).

Admission

To participate in the program at the graduate level, a student must:
- Obtain admittance to the Graduate School.
- Submit an application to the program countersigned by the student’s major academic advisor.
- Participate in an interview with the Director or designated faculty member of the Institute for Life-Span Development and Gerontology.
• Consult with the director or a designated faculty member to formulate a program of study.
• Receive written notification for admission from the director of the Institute for Life-Span Development and Gerontology.

Program
Minimum: 18 credits

Core:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3006:680 Interdisciplinary Seminar in Life-Span Development and Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>3006:685 Practicum in Life-Span Development and Gerontology</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3006:686 Retirement Specialist</td>
<td>2</td>
</tr>
<tr>
<td>3006:690 Workshop – Women: Middle and Later Years</td>
<td>2</td>
</tr>
<tr>
<td>3006:690 Workshop – Aging: Process and Intervention</td>
<td>2</td>
</tr>
<tr>
<td>3750:561 Policy Problems: Aging (Offered every other year)</td>
<td>3</td>
</tr>
<tr>
<td>3750:620 Psychology Core II: Developmental, Perceptual, Cognitive</td>
<td>2</td>
</tr>
<tr>
<td>3750:727 Psychology of Adulthood and Aging</td>
<td>4</td>
</tr>
<tr>
<td>3850:681 Cross Cultural Perspectives in Aging</td>
<td>3</td>
</tr>
<tr>
<td>3850:678 Social Gerontology</td>
<td>3</td>
</tr>
<tr>
<td>5400:541 Educational Gerontology Seminar</td>
<td>3</td>
</tr>
<tr>
<td>5400:681 Current Issues in Higher Education: Life-Span and</td>
<td>3</td>
</tr>
<tr>
<td>Gerontology Certificate</td>
<td></td>
</tr>
<tr>
<td>6500:683 Health Services Systems Management (with permission)</td>
<td>3</td>
</tr>
<tr>
<td>7400:541 Family Relationships in Middle and Later Years</td>
<td>3</td>
</tr>
<tr>
<td>7700:624 Neurogenic Speech and Language Disorders</td>
<td>3</td>
</tr>
<tr>
<td>7750:550 Social Needs and Services for Later Adulthood and Aging</td>
<td>3</td>
</tr>
</tbody>
</table>

*From student’s home department.

**Select a minimum of two courses. A student is required to take one of the electives outside the major or degree department. One credit workshop may be included as an elective, with permission.

GLOBAL INNOVATION AND TECHNOLOGY MANAGEMENT
(650107GC)

R. Ray Gehani, D.Eng., Ph.D., Director

In an increasingly global economy integrated with technology, the innovative enterprise with effective and efficient management of technology and innovation will gain competitive advantage over their rivals. To respond to these needs of our potential employers, this certificate program in Management of Technology and Innovation was developed by the College of Business Administration with the cooperation of the College of Polymer Science and Polymer Engineering and the guidance of the members of the Advancement Council of the two colleges. This graduate certificate program offers courses in Management of Technology and Innovation-related business disciplines, including marketing, finance, accounting, entrepreneurship, and more. This certificate program will prepare the learners to innovatively manage a technology-driven enterprise.

To participate in the program the student should:
• Be formally admitted to The University of Akron as a graduate or non-degree graduate student.

Students admitted to the Global Innovation and Technology Certificate Program may enroll only in those courses required for completion of the certificate.

Persons wanting to enroll in a CBA graduate certificate program must already be accepted into a graduate or professional degree program or already possess a graduate or professional degree. Students admitted to the healthcare management certificate program may enroll only in those courses required for the completion of the certificate.

Required Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500:681 Introduction to Healthcare Management</td>
<td>3</td>
</tr>
<tr>
<td>6500:682 Health Services Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>6500:683 Health Services Systems Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Elective Courses (Choose six credits from the following):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3250:536 Health Economics</td>
<td>3</td>
</tr>
<tr>
<td>3850:615 Epidemiologic Methods in Health Research</td>
<td>3</td>
</tr>
<tr>
<td>3850:656 Sociology of Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>4800:650 Biomedical Computing</td>
<td>3</td>
</tr>
<tr>
<td>8200:632 Fiscal Management in Nursing Administration</td>
<td>3</td>
</tr>
<tr>
<td>6500:601 Business Analytics and Information Strategy</td>
<td>3</td>
</tr>
<tr>
<td>6500:641 Business Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>6500:675 Global Supply Chain Management</td>
<td>3</td>
</tr>
<tr>
<td>6500:68x Any course with the approval of the Director</td>
<td>3</td>
</tr>
</tbody>
</table>

Total hours required: 18

*The awarding of this certificate is not contingent upon completion of a degree program. Graduate certificate programs require a 3.00 grade point average.

HEALTHCARE MANAGEMENT
(650205GC)

Healthcare is one of the fastest growing sectors in the economy. According to some estimates healthcare has accounted for as much as a third of new private jobs in recent times. The healthcare management certificate program is designed for students to understand the structure and components of the healthcare sector and their interdependencies. In addition, students will learn how services such as ambulatory care and inpatient care will affect the cost, quality, and accessibility of health-care delivery.

Persons wanting to enroll in a CBA graduate certificate program must already be accepted into a graduate or professional degree program or already possess a graduate or professional degree. Students admitted to the healthcare management certificate program may enroll only in those courses required for the completion of the certificate.

Required Courses:

<table>
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<td>3</td>
</tr>
<tr>
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Elective Courses (Choose six credits from the following):

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<td>4800:650 Biomedical Computing</td>
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<td>6500:675 Global Supply Chain Management</td>
<td>3</td>
</tr>
<tr>
<td>6500:68x Any course with the approval of the Director</td>
<td>3</td>
</tr>
</tbody>
</table>

Total hours required: 18

*The awarding of this certificate is not contingent upon completion of a degree program. Graduate certificate programs require a 3.00 grade point average.
program as non-degree graduate students. Students pursuing graduate degrees will receive their graduate certificate upon completion of the requirements for their graduate degree. The program represents a concentration in current theoretical knowledge and practice in home-based intervention. It adds another dimension to the knowledge and skills a student is able to offer in the many professions that relate to services to at-risk children and their families. This course of study coordinates multidisciplinary training of personnel in home-based intervention and helps to meet the need for trained professionals in home-based intervention.

The undergraduate and graduate curriculum committees of the Center for Family Studies will oversee the certificate program and certify through the Director of the Certificate Programs in Home-Based Intervention that all requirements for the certificate have been completed.

Admission
To participate in the program at the graduate level, the student should:

- Be formally admitted to The University of Akron Graduate School.
- Make written application to the program countersigned by student’s major academic advisor (if applicable).
- Have an interview with the Director of the Certificate Programs in Home-Based Intervention.
- Receive written notification for admission from the Director of the Certificate Programs in Home-Based Intervention.
- Consult with the Director of the Certificate Programs in Home-Based Intervention to formulate a program of study.

All students enrolled in the home-based certificate programs will enroll in the core course in Home-Based Intervention. Students enrolled in the undergraduate and postbaccalaureate program will enroll in the courses at the undergraduate level. Students admitted to the Graduate School as degree seeking or non-degree students will enroll in graduate courses. Graduate students enrolled in the core courses at the 500 level will have an additional graduate level project.

Students will complete a minimum of 18 hours of graduate credits in core and elective coursework. In order to earn the interdisciplinary certificate in Home-Based Intervention, the student must complete the following requirements within six years after beginning the program.

Requirements
Core Courses:
- 1820.503 Home-Based Intervention Theory
- 1820.504 Home-Based Intervention Techniques and Practice
- 1820.505 Home-Based Intervention Internship

Eligibility Courses:
Students must have completed at least 9 credits of coursework in theoretical frameworks from their discipline or related areas follows:

Theoretical Frameworks:
- Systems Theory
  - 3850.620 General Systems Theory
  - 5600.643 Theories and Philosophy of Counseling
  - 5600.655 Marriage and Family Therapy: Theory and Techniques
- Developmental Theory
  - 3850.512 Socialization: Child to Adult
  - 7400.602 Family in Life-Span Perspective
  - 7400.603 Developmental Parent-Child Interactions (online)
  - 7400.610 Child Development Theories
- Therapeutic Theory
  - 5600.651 Techniques in Counseling
  - 5600.667 Marital Therapy
  - 5600.669 Systems Theory in Family Therapy

Elective Courses (9 credits):
Select one course from three different disciplines. Must be outside student’s major degree area.

Specific Skill Areas:
- Psychology
  - 3750.530 Psychological Disorders of Children
  - 3750.704 Theories of Personality
- Sociology
  - 3850.550 Sociology of Mental Illness
  - 3850.688 Human Ecology
  - 3850.753 Family and Health (Special Topics)
- Counseling
  - 5600.550 Counseling Problems Related to Life-Threatening Illness and Death
  - 5600.620 Issues in Sexuality for Counselors
- Special Education
  - 5610.540 Developmental Characteristics of Exceptional Individuals

5610.560 Family Dynamics and Communication in the Educational Process
5610.604 Collaboration and Consultation Skills for Special Educators

- Multicultural Education (Curricular and Instructional Studies)
  - 5500.571 Characteristics of Culturally Diverse Populations
- Family and Consumer Sciences
  - 7400.501 American Families in Poverty (online)
  - 7400.504 Middle Childhood and Adolescence
  - 7400.506 Family Financial Management
  - 7400.540 Family Crisis
  - 7400.542 Human Sexuality
  - 7400.546 Culture, Ethnicity, and the Family (online)
  - 7400.590 Workshop in Family and Consumer Sciences: Family and Divorce
- Social Work
  - 7750.510 Minority Issues in Social Work Practice
  - 7750.551 Social Work and Child Welfare
  - 7750.552 Social Work and Mental Health
  - 7750.554 Social Work in Juvenile Justice
  - 6500.660 Staffing and Employment Regulation
  - 6500.654 Management of Organizational Conflict

INFORMATION SYSTEM PROJECT MANAGEMENT
(650206GC)

Program
Information system project portfolios consist of a combination of off shored and onshore outsourcing as well as in-house development. The successful collaboration between the various stakeholders in global teams is now a necessity. Project management has thus assumed a key role in determining the success of IT based initiatives in this complex and dynamic environment. The IS Project Management graduate certificate program has been designed to meet the needs of IT and other professionals who are interested in developing this expertise. The fifteen credit hour certificate program consists of coursework addressing key areas in the project management life cycle. These include project planning, requirements analysis and design, rapid application development (RAD), and implementation.

Required Courses:
- 6500.643 Systems Analysis and Design
- 6500.645 Software Development and Quality Assurance
- 6500.646 Enterprise Systems Implementation
- 6500.678 Project Management

Choose one of the following:
- 6500.644 Knowledge Management and Business Intelligence
- 6500.640 Information Systems and IT Governance
- 6500.641 Business Database Systems
- 6500.651 Management of Organizational Technology

LITERACY SPECIALIST
(520101GC)

Program
The Literacy Specialist certificate program, offered by a consortium of eight Ohio universities, is an advanced program in literacy education. The program is designed as a one-year program, consisting of 18 credit hours, including both online coursework and an internship. Successful completion of the program qualifies the individual to serve in instructional leadership positions at the state, regional, and local educational levels.

Required Courses (18 credits):
- 5500.660 Coaching in Diverse Classrooms
- 5500.661 Coaching for Effective Assessment Practice
- 5500.662 Pedagogy of Effective Literacy Instruction
- 5500.663 Professional Development in Literacy
- 5500.664 Advanced Literacy Research
- 5500.665 Internship

LITERATURE
(330010GC)

Hillary Nunn, Ph.D., Coordinator
To be eligible for the graduate certificate in literature, a person must be admitted to the University as a graduate student (with either full or provisional status). An eligible person interested in the program should contact the Graduate Coordinator in
Persons interested in this program should contact the Department of Mechanical Engineering.

Admission:
To participate in the program, the student should be formally admitted to The University of Akron as a post-baccalaureate, undergraduate, graduate, or non-degree graduate student.

Requirements:
Students should successfully complete all three courses listed below.

- 4600:442/542 Industrial Automatic Control
- 4600:444/544 Robot, Design, Control and Application
- 4600:670 Integrated Flexible Manufacturing Systems *

* Undergraduate students must obtain permission to take this course.

NEW MEDIA TECHNOLOGIES
(510005GC)

Cheryl Ward, Ph.D., Coordinator

This certificate program in New Media Technologies requires a minimum of 18 credit hours. The certificate in New Media Technologies has been designed to assist students in becoming competent, employable professional, capable of making a significant contribution to the field. The graduate curriculum provides its students with exposure to a wide range of emerging technologies, while still ensuring the basic competencies required of all practitioners. In this way, the program directly addresses the rapidly accelerating changes in the field of new media technologies.

Applicants wishing to pursue only the certificate program must apply to the graduate school for admissions as a non-degree student.

**Admission:**
The admission criteria include the following:

1. Hold an MSN degree from a professionally accredited nursing program.
2. Minimum GPA of 3.0 on a 4.0 scale for the master’s degree program.
3. CCRN certification.
5. Recent one-year experience in adult critical care.
6. Three letters of reference from a recent employer; a member of the nursing profession; a former faculty member.
7. Interview prior to admission to the program.
8. Acceptance into the anesthesia track is competitive and is decided by voting of the Admission Committee members.
9. Prerequisite: 3470:661 Statistics for Life Sciences

Program of Study (Phase II):

- 5150:590 Workshop: Instructional Technology* 3
- 5150:631 Instructional Design 3
- 5150:632 Web-Based Learning Systems 3
- 5150:633 Hypermedia/Multimedia 3
- 5150:634 Visual Literacy 3
- 5150:635 Emerging Technologies 3
- 5150:636 Topical Seminar: Educational Technology 3
- 7500:590 Workshops in Music Technology* 3
- 7600:516 New Media Writing 3
- 7600:517 New Media Production 3
- 7600:568 Advanced Audio and Video Editing 3
- 7600:590 Workshops in Communication* 3

* Workshops may be repeated for a total of 6 credit hours.

MOTION AND CONTROL SPECIALIZATION
(460006GC)

All manufacturing processes involve motion and control which may range from simple use of pneumatic cylinders in robotics to coordinated motion and sequence control in assembly lines. The technology in motion and control grows and changes at a pace that makes systems of over five years old almost obsolete. The primary purpose of the Motion and Control Specialization certificate program is to provide the graduating engineers with a focused expertise in motion and control and to furnish the necessary tools in order to enable them to follow the changes in technology after graduation. In addition, the program will also serve the practicing engineers and life-long learners to come back to school and refresh their skills using the certificate program.

**Admission:**
To participate in the program, the student should be formally admitted to The University of Akron as a post-baccalaureate, undergraduate, graduate, or non-degree graduate student.

**Requirements:**
Students should successfully complete all three courses listed below.

- 4600:442/542 Industrial Automatic Control
- 4600:444/544 Robot, Design, Control and Application
- 4600:670 Integrated Flexible Manufacturing Systems *

* Undergraduate students must obtain permission to take this course.
NURSING EDUCATION (820100GC)
The certificate in Nursing Education allows for advanced role specialization in nursing education. Four sequential courses for a total of 12 credit hours comprise the certificate requirements. The certificate program is open to all current master's and doctoral students in the College of Nursing, post-baccalaureate students, post-MSN students, post-doctoral and faculty currently teaching in nursing programs. Formal admission to The University of Akron is required as either a post-baccalaureate student, graduate student or non-degree graduate student. The awarding of this certificate is not contingent upon a degree completion program.

For information concerning admission to the certificate program, please contact the College of Nursing, Graduate Program, (330) 972-7555.

Required Courses:
- 8200:681 Instructional Methods in Nursing Education 3
- 8200:682 Nursing Curriculum Development 3
- 8200:683 Evaluation in Nursing Education 3
- 8200:684 Practicum: The Academic Role of the Nurse Educator 3

PARENT AND FAMILY EDUCATION (H40203GC)
Susan D. Witt, Ph.D., Coordinator

Program
This certificate program is a special course of study which can be added to any graduate degree program. It may also be completed by a non-degree graduate student with special permission from the Coordinator. This certificate represents a concentration in theoretical and practical knowledge in parent and family education for community-based services. This course of study promotes collaboration among disciplines and services.

Admission
To participate in the program the student should:
- Be formally admitted to The University of Akron as a postbaccalaureate, graduate or non-degree graduate student.
- Contact the Coordinator of the program for requirements.

Requirements
Core:
Students must successfully complete all three of the core courses listed below. However, the first two courses plus three hours of electives must be completed prior to the student's enrollment in the practicum course.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>7400:596 Parent Education (online)</td>
<td>3</td>
</tr>
<tr>
<td>7400:605 Developmental Parent-Child Interactions (online)</td>
<td>3</td>
</tr>
<tr>
<td>7400:594 Practicum in Parent and Family Education</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives:
Students must successfully complete six credits of coursework selected from among the various departmental courses listed below. These credits shall be chosen from departments outside the student's discipline.

- Family and Consumer Sciences
  - 7400:501 American Families in Poverty (online) 3
  - 7400:504 Middle Childhood and Adolescence 3
  - 7400:540 Family Crisis 3
  - 7400:546 Culture, Ethnicity and the Family (online) 3
  - 7400:602 Family in Life-Span Perspective 3
  - 7400:610 Child Development Theories 3
  - 7400:665 Development in Infancy and Early Childhood 3

- Social Work
  - 7750:555 The Black Family 3
  - 7750:685 Social Work Practice: Family and Children 3

- Nursing
  - 8200:651 Child and Adolescent Health Nursing I 5

- Psychology
  - 3750:530 Psychological Disorders of Children 4
  - 3750:728 Child Psychology 4
  - 3750:737 Psychology of Learning Disabilities 4

- Sociology
  - 3850:512 Socialization Child to Adult 3
  - 3850:677 Family Analysis 3

PSYCHIATRIC NURSE PRACTITIONER (820008GC)
The Post-MSN Psychiatric Nurse Practitioner certificate program is designed for those nurses who hold the Master's degree in Psychiatric Mental Health Nursing or another nursing specialty and are seeking preparation for the role of the psychiatric nurse practitioner. Upon completion of the 10-13 credit hour program, students are eligible to sit for the psychiatric nurse practitioner certification examination. Post-MSN students who do not have their MSN in Psychiatric Nursing will be assessed on an individual basis and may have to take additional coursework in the track to acquire the competencies required to be eligible to sit for national certification.

Admission
Admission criteria include the following:
1. Holds an earned master's degree with a specialty of psychiatric nursing.
2. A GPA of 3.0 or better from the master’s degree program.
3. Completes an interview with the program coordinator.

Program of Study
Students must complete a minimum of 500 clinical hours for eligibility to sit for certification.

Prerequisite Courses:
- 8200:608 Pathophysiological Concepts 3
- 8200:610 Advanced Adult/Gerontological Assessment 3
- 8200:611 Advanced Mental Health Assessment 3

Required Courses:
- 8200:652 Clinical Psychopharmacology 3
- 8200:665 Psychiatric Mental Health-Acute, APN II 3
- 8200:667 Psychiatric Mental Health-Chronic, APN III 3
- 8200:666 Psychiatric Mental Health Nursing Post MSN Residency 1-4*

Elective Courses:
- 8200:651 Child and Adolescent Health Nursing I 5

- Educational Foundations
  - 5100:648 Individual and Family Development Across the Lifespan 3
  - 5100:721 Learning Processes 3

- Educational Guidance and Counseling
  - 5600:646 Multicultural Counseling 3
  - 5600:648 Individual and Family Development Across the Lifespan 3
  - 5600:655 Marriage and Family Therapy: Theories and Techniques 3
  - 5600:667 Marital Therapy 3
  - 5600:669 Systems Theory in Family Therapy 3

- Special Education
  - 5610:540 Developmental Characteristics of Exceptional Individuals 3
  - 5610:559 Communication and Consultation with Parents and Professionals 3

- Multicultural Education (Curricular and Instructional Studies)
  - 5500:571 Characteristics of Culturally Diverse Populations 3

- Educational Administration
  - 5170:604 School-Community Relations 3

PSYCHIATRIC FAMILY NURSE PRACTITIONER (820105GC)
The Post-MSN Psychiatric Family Nurse Practitioner certificate program is designed to prepare advanced practice nurses certified as Psychiatric and Mental Health Nurse Practitioners with the competencies required to sit for national certification as a Family Psychiatric and Mental Health Nurse Practitioner. The 13 credit hour program that includes at least 500 hours of supervised practice is built upon a core of advanced assessment, pathophysiology, and advanced psychoneuroimmunology and the Psychiatric Mental Health Nurse Practitioner track.

Required Courses
- 5600:648 Individual and Family Development 3
- 5600:650 Counseling of Children 3
- 8200:650 Advanced Pediatric/Adolescent Assessment 3
- 8200:663 Psychiatric Mental Health Internship (Required) 1-4

Elective Courses:
- (Elective Courses are not required. If the Post MSN student wishes to take additional coursework, the following courses are recommended):
  - 8200:608 Pathophysiological Concepts 3
  - 8200:610 Advanced Adult/Gerontological Assessment 3
  - 8200:611 Advanced Mental Health Assessment 3

- Educational Foundations
  - 5100:648 Individual and Family Development Across the Lifespan 3
  - 5100:721 Learning Processes 3

- Educational Guidance and Counseling
  - 5600:646 Multicultural Counseling 3
  - 5600:648 Individual and Family Development Across the Lifespan 3
  - 5600:655 Marriage and Family Therapy: Theories and Techniques 3
  - 5600:667 Marital Therapy 3
  - 5600:669 Systems Theory in Family Therapy 3

- Special Education
  - 5610:540 Developmental Characteristics of Exceptional Individuals 3
  - 5610:559 Communication and Consultation with Parents and Professionals 3

- Multicultural Education (Curricular and Instructional Studies)
  - 5500:571 Characteristics of Culturally Diverse Populations 3

- Educational Administration
  - 5170:604 School-Community Relations 3
GRADUATE CERTIFICATE IN RACIAL CONFLICT AT THE CENTER FOR CONFLICT MANAGEMENT
(300013GC)
An 18 credit graduate certificate that offers students the opportunity to intensively examine racial conflict from an interdisciplinary perspective.

Required Courses:
- 3980:612 National Urban Policy (required) 3
- 3980:618 Citizen Participation 3
- 3980:619 Community Organizing 3
- 3980:621 Urban Society and Service Systems 3
- 3980:650 Comparative Urban Systems 3
- 3980:680 Special Topics 3

Evaluates:
- 3980:502 Politics and the Media 3
- 3980:562 Supreme Court and Civil Liberties 3
- 3980:530 Management of Probation and Parole 3
- 3980:646 Social Inequalities 3
- 3980:510 Social Structures and Personality 3
- 3980:530 Juvenile Delinquency 3
- 3980:541 Sociology of Law 3
- 3980:510 Evolution and Human Behavior 3
- 3200:563 Social Anthropology 3
- 3400:538 Nazi Germany 3
- 3400:554 The Civil War and Reconstruction, 1850-1877 4

Internship 3 credits from Sociology, Political Science, Anthropology, or History

STRUCTURAL ENGINEERING
(430006GC)
This certificate program provides professionals an opportunity to expand their knowledge base in the design and behavior of structural systems. It is designed for people who cannot make the full time commitment to the graduate degree program but would like to receive recognition of their continued effort in the area of study or would like to cumulate credit hours toward their ultimate graduate degree goal.

Admission Criteria
This certificate is designed primarily for students with a B.S. degree in Civil Engineering or a closely related field.

Program of Study
Civil Engineering graduates may earn a Structural Engineering Certificate by completing the following five courses:

- 4300:551 Computer Methods of Structural Analysis 3
- 4300:554 Advanced Mechanics of Materials 3
- 4300:605 Structural Stability 3
- 4300:684 Advanced Reinforced Concrete Design 3
- 4300:685 Advanced Steel Design 3
Total 15

SUPPLY CHAIN MANAGEMENT
(650202GC)
Supply chain management (SCM) is the process of planning, implementing, and controlling the operations of the supply chain as efficiently as possible. Supply chain professionals are actively involved in key management and coordination functions related to purchasing, contract negotiation, inventory management, transportation, and import/export policies. Today, it would be difficult to find an organization, large or small, that doesn't understand the importance of supply chain management, and how successful implementation of supply chain management principles can have a positive impact on its overall success.

The Supply Chain Management graduate certificate program has been designed to meet the needs of business professionals who are interested in developing expertise in supply chain operations management. The fifteen credit hour certificate program consists of coursework addressing key aspects of supply chain operations management, including logistics, sourcing, and globalization.

Persons wanting to enroll in a CBA graduate certificate program must already be accepted into a graduate or professional degree program or already possess a graduate or professional degree.

Requirements (12 credits)
- 6500:656 Management of Global Supply Chain 3
- 6500:675 Global Supply Chain Management 3
- 6500:677 Supply Chain Sourcing 3
- 6500:680 Supply Chain Logistics Management 3

Requirements (Choose 3 credits from the following)
- 6500:600 Management and Organization Behavior 3
- 6500:662 Supply Chain Operations and Analysis 3
- 6500:670 Management of Supply Chains and Operations 3
TEACHING AND TRAINING TECHNICAL PROFESSIONALS
(540100GC)
Qetler Jensrud, Ph.D., Coordinator (e-mail: qetler@uakron.edu)

This certificate program is for educators who desire to teach at the postsecondary level or to train in business and industry. Persons eligible for admission to the certificate program need to be fully admitted to The University of Akron as graduate students. This is a graduate certificate. Individuals who hold undergraduate or graduate degrees may pursue this certificate as a non-degree student. The certificate courses can be applied to a master’s degree in the future if they are taken within a specific time limit. All coursework must be completed within six years. All courses are online.

Requirements
Minimum: 18 Credits
5400:500 Postsecondary Learner 3
5400:515 Training in Business and Industry 3
or
5400:600 The Two-Year College 3
5400:520 Postsecondary Instructional Technology 3
5400:530 Systematic Curriculum Design for Postsecondary Instruction 3
5400:535 Systematic Curriculum Design in Postsecondary Education 3
5400:675 Instructional Applications Seminar 3

The Instructional Applications Seminar is the last course taken.

TEACHING ARABIC
(550003GC)

Program
The 12 month intensive certificate program with 27 credit hours of graduate-level coursework blends with our current program in foreign language education. These candidates will be able to take classes offered to our current M.S. with licensure program candidates. The standards-based coursework outlined will provide candidates the content and pedagogical knowledge necessary to obtain an alternative license through the Ohio Board of Regents, and thereafter teach Arabic.

Admission
In addition to the graduate application the following must be submitted for admission to the certificate program in Teaching Arabic:
• Completed teacher education program application
• Competency in reading comprehension, writing, and mathematics as evidenced by an earned bachelor’s degree from an accredited college or university
• Speech and hearing test
• Evidence of basic computer literacy
• Two letters of recommendation
• BCI (Bureau of Criminal Investigation) and FBI clearance

Applications should be made simultaneously. See the Office of Student Services, Zook Hall 207, call (330) 972-7750.

Required Courses (27 credits):
5100:620 Psychology of Instruction for Teaching and Learning 3
5500:621 Advanced Instructional Techniques: Modern Languages P-8 3
5100:604 Cultural Foundations of Education 3
5500:619 Instructional and Management Practices 3
5500:620 Advanced Instructional Techniques: Modern Language-Secondary 3
5500:694 Field Experience: Classroom Instruction 3
5100:642 Topical Seminar in Measurement and Evaluation 3
5500:575 Instructional Technology Applications 3
5500:555 Literacy for Multi-age Licensure 3

TEACHING CHINESE
(550002GC)

Program
The 12 month intensive certificate program with 27 credit hours of graduate-level coursework blends with our current program in foreign language education. These candidates will be able to take classes offered to our current M.S. with licensure program candidates. The standards-based coursework outlined will provide candidates the content and pedagogical knowledge necessary to obtain an alternative license through the Ohio Board of Regents, and thereafter teach Chinese.

Admission
In addition to the graduate application the following must be submitted for admission to the certificate program in Teaching Chinese:
• Completed teacher education program application
• Competency in reading comprehension, writing, and mathematics as evidenced by an earned bachelor’s degree from an accredited college or university
• Speech and hearing test
• Evidence of basic computer literacy
• Two letters of recommendation
• BCI (Bureau of Criminal Investigation) and FBI clearance

Applications should be made simultaneously. See the Office of Student Services, Zook Hall 207, call (330) 972-7750.

Required Courses (27 credits):
5100:562 Psycholgy of Instruction for Teaching and Learning 3
5500:621 Advanced Instructional Techniques: Modern Languages P-8 3
5100:604 Cultural Foundations of Education 3
5500:619 Instructional and Management Practices 3
5500:620 Advanced Instructional Techniques: Modern Language-Secondary 3
5500:694 Field Experience: Classroom Instruction 3
5100:642 Topical Seminar in Measurement and Evaluation 3
5500:575 Instructional Technology Applications 3
5500:555 Literacy for Multi-age Licensure 3

TEACHING ENGLISH AS A SECOND LANGUAGE
(330003GC)

Wei Zhang, Ph.D., Director

Requirements
This program is intended for both native and non-native speakers of English who seek training in the teaching of English as a second language (ESL) and wish to obtain an initial qualification to teach ESL/EFL (English as a foreign language) in educational settings other than public schools in Ohio or in countries outside the United States. For Ohio qualification in teaching ESL in the Ohio public school system, see the TESOL endorsement requirements in this bulletin under the College of Education.

The program is designed to introduce the student to the central issues in the theory and practice of teaching English to non-native speakers through courses in modern and applied linguistics, in second language pedagogy and in related disciplines.

Students who do not have English as a native language must demonstrate adequate proficiency in English with a valid TOEFL score of at least 550 (paper-based), 213 (computer-based), or 79 (internet-based) or a valid IELTS score of 6.5 or higher.

The awarding of this certificate is not contingent upon completion of a degree program. A minimum grade point average of 3.0 is required. Graduate students must apply for the certificate program through the Grad School.

All students who wish to pursue the TESL certificate should meet with the program director to discuss the program and availability of courses.

The certificate requires the completion of a minimum of 18 credit hours of course work, including five core courses and one elective course.

Core Requirements (15 credits)
3300:566 Linguistics and Language Arts 3
3300:573 Theoretical Foundations and Principles of ESL 3
3300:578 Grammatical Structures of English 3
5500:543 Techniques of Teaching English as a Second Language 4
3300:577 Sociolinguistics 3
or
3300:586 Learner English 3

Electives (3 credits)**
Choose one of the following courses:
3300:570 History of English Language 3
3300:572 Syntax 3
3300:577 Sociolinguistics 3
3300:587 Field Experience: Teaching Second Language Learners 3
3600:505 Spanish Linguistics: Phonology 4
5500:541 Teaching Language Literacy to Second Language Learners 4
7700:530 Aspects of Normal Language Development 3

Students should have successfully completed 3300:371 or 3300:566 prior to taking 3300:573.

**Choice to be decided in consultation with the program director.

TRANSPORTATION ENGINEERING
(430007GC)

This certificate program provides practicing professionals an opportunity to expand their knowledge base in the design and operation of transportation systems. It is designed for people who cannot make the full time commitment to the graduate degree program but would like to receive recognition of their continued effort in the area of study or would like to cumulate credit hours toward their ultimate graduate degree goal.

Admission Criteria
This certificate is designed primarily for students with a B.S. degree in Civil Engineering or a closely related field.
Program of Study

Civil Engineering students may earn a Transportation Engineering Certificate by completing the following three courses:

- 4300:564 Highway Design 3
- 4300:565 Pavement Engineering 3
- 4300:566 Traffic Engineering 3

and two of the following courses:

- 4300:663 Advanced Transportation Engineering I 3
- 4300:664 Advanced Transportation Engineering II 3
- 4300:665 Traffic Detection and Data Analysis 3

Total 15

WOMEN'S STUDIES

(300110GC)

For information, contact Women’s Studies, located in Olin Hall 247, (330) 972-7481.

Interdisciplinary and specialized, the Women’s Studies graduate program fosters a critical approach to knowledge about women. By focusing on cultural practices that have largely excluded and devalued differences in gender, sexual orientation, ethnicity, race, and class, Women’s Studies prepares students to appreciate and act in a pluralistic world. The Women’s Studies graduate certificate integrates scholarship and research on women and gender from literature, psychology, history, sociology, and communication. Students are challenged to explore diverse viewpoints and discover the partial and often self-interested emphases of our society’s most powerful institutions – family, church, academia, business, and government.

Admission

Hold a Bachelor’s Degree with a minimum 2.75 grade point average.

Requirements (required 5-7)

- 3001:580 Feminist Theory 3
- 3001:589 Internship in Women’s Studies 1-4
- 3001:590 Workshop: Women’s Studies Lecture Series 3

Electives

Three classes selected from the Women’s Studies Coordinating Council-approved list of graduate level courses.

- 3001:585 Special Topics in Women's Studies: Women, Poverty and Welfare 3
- 3001:585 Special Topics in Women's Studies: Women as Survivors 3
- 3001:585 Special Topics in Women's Studies: Worlds of Women 3
- 3001:589 Internship in Women's Studies 1-4
- 3001:593 Individual Studies on Women 1-3
- 3230:516 The Anthropology of Sex and Gender 3
- 3300:553 American Women Poets 3
- 3300:589 Seminar in English 2-3
- 3400:500 Gender and Culture in China 3
- 3400:599 Women and Gender in Middle Eastern Societies 3
- 3700:522 Understanding Racial and Gender Conflict 3
- 3850:555 Family Violence 3
- 3850:639 Sociology of Gender 3
- 7600:508 Women, Minorities, and News 3
- 7750:511 Women's Issues in Social Work Practice 3

or other classes as approved by Women's Studies Graduate Coordinator for the certificate.
An explanation of that numbering system follows: 

**SECTION 5. Graduate Courses**

**Course Numbering Index**

**Interdisciplinary Programs**

1800 Divorce Mediation 3001 Women's Studies

1820 Home-Based Intervention Therapy 3006 Institute for Lifespan Development and Gerontology

3000 Cooperative Education

**Buchtel College of Arts and Sciences**

3100 Biology 3530 German

3110 Biology/NEOMED 3550 Italian

3150 Chemistry 3580 Spanish

3200 Classics 3600 Philosophy

3220 Anthropology 3650 Physics

3240 Archaeology 3700 Political Science

3250 Economics 3750 Psychology

3300 English 3850 Sociology

3350 Geography and Planning 3980 Public Administration and Urban Studies

3370 Geology 7100 Art

3400 History 7100 Art

3450 Mathematics 7400 Family and Consumer Sciences

3460 Computer Science 7500 Music

3470 Statistics 7510 Musical Organizations

3490 Engineering Applied Mathematics 7520 Applied Music

3500 Modern Languages 7600 Communication

3501 Arabic 7800 Theatre

3502 Chinese 7810 Theatre Organizations

3510 Latin 7920 Dance Performance

3520 French

**College of Engineering**

4100 General Engineering 4450 Computer Engineering

4200 Chemical Engineering 4600 Mechanical Engineering

4300 Civil Engineering 4800 Biomedical Engineering

4400 Electrical Engineering

**College of Education**

5100 Educational Foundations and Leadership 5550 Physical Education

5150 Instructional Technology 5560 Outdoor Education

5170 General Administration 5570 Health Education

5190 Higher Education Administration and Counseling

5400 Teaching and Training 5610 Special Education

5490 Technical Professionals 5620 School Psychology

5500 Curricular and Instructional Studies 5800 Special Educational Programs

**College of Business Administration**

6200 Accountancy 6600 Marketing

6300 Entrepreneurship 6700 Professional

6400 Finance 6800 International Business

6500 Management

**College of Health Professions**

7700 Speech Language Pathology and Audiology 8200 Nursing

8300 Public Health

7750 Social Work

7760 Nutrition and Dietetics

**College of Polymer Science and Polymer Engineering**

9841 Polymer Engineering 9871 Polymer Science

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*Each course at the University has two numbers. One designates the college and department of which it is a part; one specifies the subject matter of the particular course. For instance:

3000 507 Middle English Literature

In the above example, the first four digits of the number (3300) indicate the college and department. In the case, 3000 represents the Buchtel College of Arts and Sciences; 300 refers to the Department of English. The second set of digits (507) following the colon, indicates exactly which course in the Department of English is being specified. The course number also indicates the level at which the course is being taught and the point at which the student is ready to take the course. A student must apply for and be admitted to the Graduate School before registering for graduate credit.

An explanation of that numbering system follows:

500-699 Master's-level courses (also, 600-799 J.D.-level courses)

700-899 Doctoral-level courses
Arts and Sciences

**BIOLOGY 3100:**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>506</td>
<td>PRINCIPLES OF SYSTEMATICS</td>
<td>3 credits</td>
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<tr>
<td>512</td>
<td>ADVANCED ECOLOGY</td>
<td>3 credits</td>
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<tr>
<td>518</td>
<td>FIELD ECOLOGY</td>
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<tr>
<td>521</td>
<td>TROPICAL FIELD BIOLOGY</td>
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<td>522</td>
<td>CONSERVATION BIOLOGY</td>
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<td>LIMNOLOGY</td>
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<td>BIOLOGY OF BEHAVIOR</td>
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<td>BIOLOGY OF BEHAVIOR LABORATORY</td>
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<td>COMMUNITY/ECOLOGY SYSTEM</td>
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<td>531</td>
<td>PATHOGENIC BACTERIOLOGY</td>
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<td>551</td>
<td>GENERAL ENTOMOLOGY</td>
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<td>PARASITOLOGY</td>
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<td>ORNITHOLOGY</td>
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<td>HERPETOLOGY</td>
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<td>566</td>
<td>CONSERVATION BIOLOGY</td>
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<tr>
<td>567</td>
<td>COMPARATIVE VERTEBRATE MORPHOLOGY</td>
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**BIOLOGY 4000:**

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<tr>
<td>568</td>
<td>THE PHYSIOLOGY OF REPRODUCTION</td>
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<td>569</td>
<td>RESPIRATORY PHYSIOLOGY</td>
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<td>570</td>
<td>LAB ANIMAL REGULATIONS</td>
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<td>571</td>
<td>PHYSIOLOGICAL GENETICS</td>
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<td>572</td>
<td>MECHANISMS OF STRESS</td>
<td>3 credits</td>
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<td>573</td>
<td>COMPARATIVE VERTEBRATE MORPHOLOGY</td>
<td>1 credit</td>
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<td>574</td>
<td>MOLLECOULAR BIOLOGY</td>
<td>3 credits</td>
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<tr>
<td>575</td>
<td>ADVANCED GENETICS</td>
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<tr>
<td>576</td>
<td>NEUROBIOLOGY</td>
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<td>577</td>
<td>CELL PHYSIOLOGY</td>
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<td>579</td>
<td>EVOLUTIONARY ECOLOGY</td>
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<td>580</td>
<td>TOPICS IN INTEGRATIVE BIOLOGY</td>
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<td>581</td>
<td>MOLECULAR BIOLOGY</td>
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<td>582</td>
<td>BIOLOGICAL PROBLEMS</td>
<td>1-2 credits</td>
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<td>591</td>
<td>GRADUATE EVOLUTIONARY BIOLOGY</td>
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<td>592</td>
<td>EVOLUTIONARY ECOLOGY</td>
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<td>593</td>
<td>EXPERIMENTAL APPROACHES IN FIELD ECOLOGY</td>
<td>4 credits</td>
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<td>594</td>
<td>ADVANCED AQUATIC ECOLOGY</td>
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<td>595</td>
<td>BASIC DNA TECHNIQUES</td>
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<td>596</td>
<td>TECHNIQUES IN MOLECULAR BIOLOGY</td>
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These courses provide a comprehensive study of various aspects of biology, from molecular and cellular levels to the ecological and physiological impacts of stress on organisms.
674 INTEGRATED CARDIOVASCULAR PHYSIOLOGY 3 credits
Prerequisite: B.S. in Biology or equivalent. Integration of epidemiological, behavioral, physiological, molecular, and genetic mechanisms of cardiovascular function in health and disease. Emphasis on critical thinking and class discussions.

675 INTEGRATIVE PHYSIOLOGICAL GENOMICS 4 credits
Prerequisite: B.S. in science discipline. This course uses methodologies from genetics and physiology to construct an integrative approach to studying whole body systems.

676 INTEGRATIVE PHYSIOLOGY 3 credits
Exploration of the integrative nature of physiology through lecture, reading, and critical analysis of current literature.

677 SYSTEMS PHYSIOLOGY 3 credits
Study of the complex nature of specific physiological systems both as separate entities and interacting units.

681 CYTOLOGY 4 credits
The study of how a cell's structure, biochemistry, metabolism, and molecular biology integrate to produce cell function. Laboratory.

683 SELECTED TOPICS IN MICROBIOLOGY 3 credits
A study of the evolution and development of the vertebrate nervous system.

685 ADVANCED CELL PHYSIOLOGY 3 credits
Structure and functional organization of cells at ultrastructural level. Three lecture hours a week.

688 PRINCIPLES OF TRANSMISSION ELECTRON MICROSCOPY 3 credits
Modern cytological methods using transmission electron microscope. Portfolio required to demonstrate proficiency in fixation techniques, use of ultramicrotome, light and electron microscopes and darkroom techniques.

689 PRINCIPLES OF SCANNING ELECTRON MICROSCOPY 3 credits
An introduction of modern cytological methods using the scanning electron microscope. A portfolio is required to demonstrate proficiency in fixation techniques, the use of supplemental equipment such as the critical point drying apparatus and the sputter-coating apparatus and the efficient use of the scanning electron microscope.

695 SPECIAL TOPICS: BIOLOGY 1-3 credits
(May be repeated) Prerequisite: permission. Special courses offered once or only occasionally in areas where no formal course exists.

697 BIOLOGY COLLOQUIUM 1 credit
(May be repeated) Prerequisite: permission. Attendance at all departmental seminars and presentation of seminar based on original research. Required of all thesis option students who shall present their thesis research.

699 MASTER’S THESIS 1-6 credits
(May be repeated) A minimum of six credits is required for thesis option student.

701 RESEARCH TECHNIQUES IN INTEGRATED BIOBIOLOGY 4 credits
Students will learn standard, common techniques that are applicable across broad areas of research in integrated biology.

702 COMMUNICATING IN INTEGRATED BIOGEOLOGY 3 credits
Communication of basic science topics to professionals of a broad audience. Students present topics in their area of expertise to other (non-discipline) students in the course.

703 PROBLEM SOLVING IN INTEGRATED BIOGEOLOGY 3 credits
Prerequisite: 702. Students will learn to study complex systems and get hands-on experience working in interdisciplinary teams.

707 INTEGRATED BIOGEOLOGY COLLOQUIUM 1 credit
Prerequisite: Permission. Seminars of original research from a broad range of bioscience-related disciplines.

899 DOCTORAL DISSERTATION 1-12 credits
Original research by the doctoral student.

BIOLOGY/NEOMED 3110:

630 HUMAN GROSS ANATOMY I 3 credits
Prerequisites: graduate standing and permission. An intensive survey of human macromolecules.

631 HUMAN GROSS ANATOMY II 3 credits
Prerequisites: graduate standing and permission. An intensive survey of human macromolecules.

695 SPECIAL TOPICS: BIOLOGY/NEOMED 1-6 credits
(May be repeated) Prerequisite: permission. Advanced topics in medical education covering areas not otherwise available. May be repeated with a change in topic.

CHEMISTRY 3150:

501 BIOCHEMISTRY LECTURE I 3 credits
Prerequisite: Graduate status or permission of department. Biochemistry of amino acids, carbohydrates, lipids, and nucleic acids: structure/function relations. Enzymes as catalysts: kinetics and regulation. Coenzymes.

502 BIOCHEMISTRY LECTURE II 3 credits
Prerequisite: 501, graduate status or permission of department. Overview of metabolism: thermodynamics; carbohydrate, fatty acid, amino acid, and nucleoside anabolism and catabolism; hormonal control of metabolism. Photosynthesis.

572 ADVANCED INORGANIC CHEMISTRY 3 credits
Prerequisite: Graduate status or permission of department. Concepts of atomic structure integrated in systematic classification of elements. Periodic table. Chemistry of the representative elements. Transition elements including coordination compounds, organometallics and metal carbonyls.

590 WORKSHOP IN CHEMISTRY 1-3 credits
(May be repeated) Group studies of special topics in chemistry. May not be used to meet undergraduate or graduate major requirements in chemistry.

592 SPECIAL TOPICS: CHEMICAL EDUCATION 1-3 credits
(May be repeated up to 6 credits) Consideration of topics in chemical education.

603 BIOCHEMISTRY LECTURE III 3 credits
Prerequisite: 501 and 502, graduate status or permission of department. DNA, RNA and protein metabolism. Translation and transcription. Gene function and expression.

610 BASIC QUANTUM CHEMISTRY 3 credits
Prerequisite: Graduate status or permission of department. Quantum mechanics with applications to atomic and molecular properties, quantum mechanics, variation and perturbation methods and molecular orbital theories.

611 SPECTROSCOPY 3 credits
Prerequisite: 610, graduate status or permission of department. Interaction of light with matter: linear and nonlinear spectroscopies. Rotational, vibrational and electronic spectroscopy. Radiolatent transitions and photochemistry.

619 TRANSITION–METAL ORGANOMETALLICS 3 credits
Prerequisite: Graduate status or permission of department. The organometallic chemistry of the transition metal elements. Topics covered include synthesis, characterization methods, structure, bonding, reactivity, and application.

620 MAIN GROUP ORGANOMETALLICS 3 credits
Prerequisite: Graduate status or permission of department. The organometallic chemistry of main group elements. Topics covered include synthesis, characterization methods, structure, bonding, reactivity, and applications.

625 CHEMISTRY SEMINAR 1 credit
Prerequisites: Graduate status or permission of department. Lectures on current research topics in chemistry by invited speakers.

629 PHYSICAL INORGANIC CHEMISTRY 3 credits
Prerequisites: Graduate status or permission of department. Detailed treatment of chemistry of transition elements. Group theoretical applications, ligand field theory, kinetics and mechanism, magnetism, electronic spectra, molecular orbital theory.

630 THEORETICAL INORGANIC CHEMISTRY 2 credits
Prerequisites: 629, graduate status or permission of department. Detailed treatment of chemistry of transition elements. Group theoretical applications, ligand field theory, kinetics and mechanism, electronic spectra, molecular orbital theory.

631 METALS IN MEDICINE 3 credits
Prerequisites: 572, graduate status or permission of department. This course will cover the synthesis and development of metals such as the tumor drug cisplatin, technetium 99m based imaging agents, and silver antimicrobials.

635 THERMODYNAMICS AND STATISTICAL THERMODYNAMICS 3 credits
Prerequisites: Graduate status or permission of department. Rigorous treatment of thermodynamics and their applications to selected chemical systems. Fundamentals of statistical thermodynamics and applications to systems in chemical equilibrium.

636 NUCLEAR KINETICS 3 credits
Prerequisite: 635, graduate status or permission of department. Phenomenological kinetics, experimental methods of investigation and analysis of reaction systems. Theoretical treatments of reaction rates.

640 CHEMICAL SEPARATIONS 3 credits
Prerequisites: Graduate status or permission of department. General theory, instrumentation and application of methods of separation. Emphasis on modern chromatographic techniques and recent advances.

641 SPECTRAL METHODS 3 credits
Prerequisites: Graduate status or permission of department. Theory and application of instrumental measurements. Interpretation of data.

645 X-RAY CRYSTALLOGRAPHY 3 credits
Prerequisite: Graduate status or permission of department. The theoretical and practical aspects of single crystal x-ray crystallography are discussed. Topics covered include diffraction, space groups, structure solution and refinement.

670 SPECTROSCOPIC IDENTIFICATION OF ORGANIC COMPOUNDS 3 credits
Prerequisites: Graduate status or permission of department. Determination of the structures of organic compounds by spectroscopic analysis: ORD/CD, UV-VIS spectroscopy, IR spectroscopy, mass spectrometry, FT-NMR spectroscopy, 2D-NMR.

679 INORGANIC POLYMERS 3 credits
Prerequisites: 572 or permission of instructor. Synthesis, structure, bonding, characterization, and applications of polysiloxanes, polyporphosphazenes, polysilanes, polycarboanilines, polypyrrolic (polypyrroles), and metal-organic frameworks, coordination polymers, and related materials.

683 MECHANISTIC AND SYNTHETIC ORGANIC CHEMISTRY I 3 credits
Prerequisites: Graduate status or permission of department. Introduction to the structural and mechanistic aspects of HAM/CC calculations. Aids and bases, excited states, kinetics, linear free energy relationships, reactive intermediates, reaction mechanisms.

684 MECHANISTIC AND SYNTHETIC ORGANIC CHEMISTRY II 3 credits
Prerequisites: 683, graduate status or permission of department. Synthetic organic chemistry from a mechanistic perspective: nucleophilic and electrophilic substitution and addition reactions, carboxyl chemistry, functional group manipulations, oxidations, reductions, cyclization reactions.

699 MASTER’S THESIS 1-6 credits
(May be repeated) Prerequisite: Graduate status or permission of department. Supervised original research in analytical, inorganic, organic, physical or biochemistry.

710 SPECIAL TOPICS: ANALYTICAL CHEMISTRY 1-3 credits
(May be repeated) Prerequisite: Graduate status or permission of department. Topics in advanced analytical chemistry. Electroanalysis, activation analysis, atomic absorption spectrometry, mass spectrometry, liquid-liquid, liquid-solid and gas chromatography, ion exchange, thermodynamical methods, separations, standards, sampling, recent developments.

711 SPECIAL TOPICS: INORGANIC CHEMISTRY 1-3 credits
(May be repeated) Prerequisite: Graduate status or permission of department. Consideration of topics in modern inorganic chemistry such as coordination compounds, chemistry of the early transition and representative elements, nonaqueous solvents, organometallic compounds, homogeneous catalysis.

712 SPECIAL TOPICS: ORGANIC CHEMISTRY 1-3 credits
(May be repeated) Prerequisite: Graduate status or permission of department. Topics in advanced organic chemistry such as natural products, heterocyclic compounds, photochemistry.

713 SPECIAL TOPICS: PHYSICAL CHEMISTRY 1-3 credits
(May be repeated) Prerequisite: Graduate status or permission of department. Subject from modern physical chemistry.

715 SPECIAL TOPICS: BIOCHEMISTRY 1-3 credits
(May be repeated) Prerequisite: Graduate status or permission of department. Recent developments in areas of biochemistry.

720 ADVANCED BIOCHEMICAL TECHNIQUES 3 credits
Prerequisite: 502, graduate status or permission of department. An advanced lecture course on physical techniques in biochemistry. Includes optical and atomic spectroscopic and calorimetric methods, radiological and photometric techniques, scattering and magnetic resonance spectroscopy.

722 ENZYMATIC REACTIONS 3 credits
Prerequisites: 501 and 502, graduate status or permission of department. Mechanisms of enzyme catalyzed reactions, general aspects and specific examples for phosphoryl, acyl, glycosyl transfers, eliminations, oxidation/reduction, isomerization and rearrangements. Chemistry of cofactors.

724 BIOINORGANIC CHEMISTRY 3 credits
Prerequisites: 501 and 502, graduate status or permission of department. The structure and properties of metal ions and metal complexes; metal ion metabolism; metals in medicine.

726 ADVANCED METABOLISM 3 credits
Prerequisites: 501 and 502, graduate status or permission of department. Study of advanced pathways in carbohydrate, lipid and protein metabolism with emphasis placed on metabolic dysfunction.

Graduate Courses
506 STATE AND LOCAL PUBLIC FINANCE 3 credits
Prerequisite: Admission to the master’s program in Economics or permission. Examines economic rationale and problems for provision of goods and services by different governmental units. Considers alternative revenue sources and special topics.

515 COST-Benefit ANALYSIS 3 credits
Prerequisite: Admission to the master’s program in Economics or permission. Introduction to tool of cost-benefit analysis for public project evaluation. Development of analytical framework and methods of determining benefits and costs over time. Stresses application of techniques.

523 APPLIED GAME THEORY 3 credits
Prerequisite: Admission to the master’s program in Economics or permission. Application of the basic concepts of game analysis of strategic behavior to relevant economic issues including bargaining, cartels, voting, conflict resolution, and non-competitive pricing.

527 ECONOMIC FORECASTING 3 credits
Prerequisite: Admission to the master’s program in Economics or permission. Study of methods for building, identifying, fitting, and checking dynamic economic models and the use of these models for forecasting. Emphasis on the application of available computer software systems.

530 LABOR MARKET and SOCIAL POLICY 3 credits
Prerequisite: Admission to the master’s program in Economics or permission. Intensive study of current labor and social policy issues (e.g. discrimination, poverty, migration, education, demographic and labor market changes, impact of international trade on employment).

538 ECONOMICS OF SPORTS 3 credits
Prerequisite: permission of instructor. Sports franchises as profit maximizing firms: costs and benefits of a franchise to a city: labor markets in professional sports; the economics of college sports.

540 SPECIAL TOPICS: ECONOMICS 3 credits
May be repeated for credit with another cuneiform language) Prerequisite: permission of instructor.

563 SOCIAL ANTHROPOLOGY 3 credits
Prerequisite: Permission. Field-based course teaching basic archaeological techniques: mapping, data collection, basic excavation, and report writing. Includes laboratory analysis of artifacts and materials collected. Emphasis on the development of archaeological techniques and research methods appropriate to the study of human societies.

572 SPECIAL TOPICS in ARCHAEOLOGY 1-3 credits
Prerequisite: Permission. Admission to the seminar in archaeology, or permission of the instructor.

587 URBAN ECONOMICS: THEORY AND POLICY 3 credits
Prerequisite: Admission to the master’s program in Economics or permission. Analysis of urban issues from an economic perspective. Emphasis on urban growth, land-use patterns, housing, income distribution, poverty and urban fiscal policy.

591 WORKSHOP in ECONOMICS 1-3 credits
May be repeated for credit with another cuneiform language) Prerequisite: permission of instructor.

600 FOUNDATIONS of ECONOMIC ANALYSIS 3 credits
Prerequisite: graduate standing. Determination of national income, employment and price levels; aggregate consumption, investment and asset holding; decision problems faced by household and firm. Partial equilibrium analysis of competition and monopoly and general equilibrium analysis. May not be substituted for 602, 603, 611, or applied toward the M.A. degree. May be repeated for credit with another cuneiform language) Prerequisite: permission of instructor.

602 MICROECONOMIC THEORY 3 credits
Prerequisites: Admission to the master’s program in Economics or permission. Evolution of microeconomic theory, relation of ideas of economists contemporary to conditions.

604 APPLICATIONS TO MATHEMATICAL MODELS TO ECONOMICS 3 credits
Prerequisites: Admission to the master’s program in economics or permission of the department. Review of selected topics of differential and integral calculus and their application to economic analysis. Theory of optimization and decision, static and dynamic competitive models. Emphasis on analysis of growth and stability.

606 MACROECONOMIC THEORY 3 credits
Prerequisites: Admission to the master’s program in Economics or permission. International trade, environment.

610 FRAMEWORK of ECONOMIC ANALYSIS 3 credits
Prerequisites: graduate standing. Development of theoretical and analytical framework for decision making. Discussion of applications of the framework to situations concerning demand, cost, supply, production, price, employment and wage.

619 INTERNATIONAL TRADE 3 credits
Prerequisites: Admission to the master’s program in Economics or permission of the department. Modern theory of consumer behavior and of the firm. Determination of market prices. Optimization models, establishment of criteria for productive, allocative and distributive efficiency.

620 APPLICATIONS TO LINEAR MODELS IN ECONOMIC ANALYSIS 3 credits
Prerequisites: Admission to the master’s program in economics or permission of the department. Review of selected topics of linear algebra application to economic theory. Static open and closed input-output tables, dynamic models, consumption technology and theory of demand, linear programming, general equilibrium analysis.

626 STATISTICS FOR ECONOMETERS 3 credits
Prerequisites: Admission to the master’s program in economics or permission of the department. A review of statistical theory and its application to research in economics. Emphasis is on estimation and hypothesis testing as a prelude to econometrics.

740 PHYSICAL ORGANIC CHEMISTRY 3 credits
Prerequisites: 683, 684, graduate status or permission of department. An advanced treatment of the theory and methodology of organic chemistry; MO theory, molecular mechanics, main group elements, kinetics, thermodynamics, reaction kinetics, free energy relationships.

750 ADVANCED SYNTHETIC ORGANIC CHEMISTRY 3 credits
Prerequisites: 683, 684, graduate status or permission of department. An advanced treatment of organic functional group manipulations in the context of the total synthesis of natural products.

899 DOCTORAL DISSERTATION 1-16 credits
Prerequisite: Permission of the appropriate committee. Open to qualified student accepted as a candidate for Doctor of Philosophy in Chemistry. Supervised original research undertaken in organic, inorganic, physical, analytical or biochemistry.
627 ECONOMETRICS
Prerequisite: 628 or equivalent. Formulation of functional relations among economic variables such as a statistical estimation from observational data and construction of multivariate econometric models and methods of estimation. 3 credits

628 SEMINAR IN RESEARCH METHODS
Prerequisite: Admission to the master's program in economics or permission of the department. Opportunity to study special topics and current issues in economics at an advanced level. Permission with the instructor. (May be repeated for credit. Maximum of three credits.) 3 credits

633 THEORY OF WAGES AND EMPLOYMENT
Prerequisite: Admission to the master's program in economics or permission of the department. Emphasis is on individual development of a theoretical proposition or research statement, its empirical examination and possible applications. 3 credits

640 SPECIAL TOPICS IN ECONOMICS
Prerequisite: Admission to the master's program in economics or permission of the department. Opportunity to study special topics and current issues in economics at an advanced level. Permission with the instructor. (May be repeated for credit. Maximum of three credits.) 3 credits

664 SEMINAR ON ECONOMIC GROWTH AND DEVELOPMENT
Prerequisite: Admission to the master's program in economics or permission of the department. Emphasis is on problems of economic growth and development in different regions. Discussion of macroeconomic aggregates of capital formation, investment, technology and external trade. 3 credits

665 SEMINAR ON READING ECONOMIC ANALYSIS AND DEVELOPMENT
Prerequisite: Admission to the master's program in economics or permission of the department. Study of a particular national or international regional development. Any one or a combination of following regions may be considered: Middle East, North Africa, areas within Latin America, Southern Europe, Southeast Asia or Eastern Europe. 3 credits

670 INTERNATIONAL MONETARY ECONOMICS
Prerequisite: Admission to the master's program in economics or permission of the department. Emphasis is on international financial relations. Foreign exchange market and exchange rate adjustment. Balance of payments adjustment policies. International monetary system. 3 credits

671 INTERNATIONAL TRADE
Prerequisite: Admission to the master's program in economics or permission of the department. Traditional trade theory. Recent developments in trade theory, policy implications in trade relations among developed and developing economies. 3 credits

683 MONETARY ECONOMICS
Prerequisite: Admission to the master's program in economics or permission of the department. Emphasis is on integration of money and value theory among other, and special, important issues. 3 credits

695 GRADUATE INTERNSHIP IN ECONOMICS
1-3 credits

697 READING IN ADVANCED ECONOMICS
1-4 credits each
Prerequisite: Admission to the master's program in economics or permission of the department. (A maximum of six credits may be applied toward the master's degree in economics.) Permission with the instructor. Prerequisites: Eighteen credit hours of economics graduate courses. Career application of student's graduate coursework. Supervisor reports and assignments required. May be repeated for a maximum of three credits.

500 ANGLO SAXON
Studies in Old English language and Old English prose and poetry, including Beowulf, Chaucer, and Paradise Lost. 3 credits

503 DEVELOPMENT OF THE ARTHURIAN LEGEND
Traces evolution of Arthurian materials from 540 to 1500 and beyond, with emphasis on characteristics, themes, events and treatments. 3 credits

505 CHAUCER
Close study of Chaucer's major works – The Canterbury Tales and Troilus and Criseyde in Middle English. 3 credits

507 MIDDLE ENGLISH LITERATURE
Study of genres, topics, styles and writers of the Middle English literary works from 12th to 15th centuries. Readings in Middle English. 3 credits

521 SWIFT AND POPE
An intensive study of the major satirists of Swift and Pope. Concentration on the rhetorical strategies of each author within the context of the shifting intellectual and cultural milieu at the end of the 17th and beginning of the 18th Centuries. 3 credits

524 EARLY ENGLISH FICTION
Development of English novel before 1830. Focus on works of Defoe, Richardson, Fielding, Smollett, Sterne, Austen, and other. 3 credits

530 VICTORIAN POETRY AND PROSE
Poetry, prose of the late 19th Century, excluding fiction, with attention to Tennyson, Browning, Arnold, Carlyle, Ruskin and other major writers. 3 credits

531 VICTORIAN FICTION
Reading major novels of Victorian era, of varying length, by Emily Bronte, Dickens, Eliot, Thackeray, and Hardy. Characterization, theme, and attitude toward life emphasized. 3 credits

300: 3 credits

535 20TH CENTURY BRITISH POETRY
Concentrated study of major British poets Yeats, Eliot, and Auden with attention also to Hopkins, Houseman, Spender, C. Day Lewis, Dylan Thomas and others. 3 credits

536 BRITISH FICTION: 1900-1925
Studies in the major period, Joyce, D.H. Lawrence, and Virginia Woolf with attention to their innovations in narrative style, their psychological realism and symbolism. 3 credits

537 BRITISH FICTION SINCE 1925
Studies in the major British novelists since 1925, including Lawrence, Joyce, and Woolf. Attention to development of British short story from 1925 to present. 3 credits

548 AMERICAN ROMANTIC FICTION
Examination of early American fiction, tracing its genesis, romantic period and germinal movement toward realism. Writers discussed include Cooper, Poe, Hawthorne, and Melville. 3 credits

549 AMERICAN FICTION: REALISM AND NATURALISM
Examination of American writers of realistic and naturalistic fiction (e.g. Hawells, James, Crane, Dreiser). Tracing developments in American fiction against background of culture and historical change. 3 credits

550 MODERN AMERICAN FICTION
Study of significant American short and long fiction from World War I to the present. 3 credits

553 AMERICAN WOMEN POETS
Study of modern poets' uses and revisions of tradition, women's relationships, conceptions of self, and the ambition of the artist-as-woman. Focus on the interplay between "public" and "private" poetry. 3 credits

556 THOREAU, EMERSON, AND THEIR CIRCLE
A study of work and life of Henry David Thoreau, Ralph Waldo Emerson, and other key figures of The American Renaissance. 3 credits

557 WRITERS ON WRITING
A close look at what established writers have to say about the process of writing. Students write response essays and take exams on readings. 3 credits

560 FILM AND LITERATURE
Analysis of literary texts and their film adaptations. Emphasis on genre, structure, and visual elements as counterparts to written texts. 3 credits

561 LINGUISTICS AND LANGUAGE ARTS
Focus on course in linguistic and typological implications for second language learners. Fundamental topics (morphology, syntax, semantics, phonetics, pragmatics) and related topics (sociolinguistics, cross-cultural analysis) covered. 3 credits

562 MODERN EUROPEAN FICTION
Representative European writers from about 1850 to present. In translation. Focus on fiction of such writers as Zola, Tolstoy, Dostoevsky, Mann, Proust, Kafka and Solzhenitsyn. 3 credits

563 NINETEENTH-CENTURY POETRY
This survey of world poetry focuses on the stylistic concerns and social consequences of literature from Latin America, Africa, Asia, Europe, and beyond. 3 credits

565 EROS AND LOVE IN EARLY WESTERN LITERATURE
An analysis of sex and love in the western tradition from Greco-Roman times to 1800. Emphasizes allegorical, satiric, fantastic or realistic uses of sexuality and "romantic" love. 3 credits

570 HISTORY OF ENGLISH LANGUAGE
Development of English language, from its beginnings: sources of its vocabulary, its sounds, its rules; semantic change; political and social influences on changes; dialect origins; correctness. 3 credits

571 U.S. DICTIONARIES: BLACK AND WHITE
Study of differences in pronunciation, vocabulary and grammar among U.S. language varieties. Origins, regional and social dimensions are explored. Correctness, focusing on black English and Appalachian speech, explored. 3 credits

572 SYNTAX
Principles of syntactic description. Sentence structures are investigated from a variety of languages, with emphasis on English. 3 credits

573 THEORETICAL FOUNDATIONS AND PRINCIPLES OF ESL
Theoretical issues in linguistic description and language acquisition as relevant to learning of a second language. Elaboration of principles of the teaching of English as a second language based on research in linguistics, psycholinguistics and second language pedagogy. 3 credits

574 AFRICAN AMERICAN ENGLISH
Africa-American English grammatical structure, pronunciations, origins and cultural role. Comparisons with academic English. Discussion of language correctness, legal status and role in education. 3 credits

575 THEORY OF RHETORIC
Ancient and modern theories of rhetoric, with attention to classical oration, "topics" of rhetoric and their application to teaching of English. 3 credits

576 SOCIOLINGUISTICS
Major sociolinguistic concepts and methodology examined, as well as relationships between language, sociocultural factors, and education. Issues of Standard English, power, and gender also examined. 3 credits

577 GRAMMATICAL STRUCTURES OF MODERN ENGLISH
Contemporary understanding of Modern English sentence structure: parts of speech, sentence types, phrase types, modification, coordination and subordination, parentheticals. Traditional grammar and sentence rhetoric discussed. 3 credits

578 MANAGEMENT REPORTS
Study of principles and writing practice in effective business style, specialized structure, and purpose for business reports. 3 credits

579 SCIENCE FICTION
Study of a twentieth-century British and American science fiction, featuring primary forms of the science fiction story and the work of major authors. 3 credits

580 LEARNER ENGLISH
Introduction to tools for and practice in analyzing second language learners' production of English. Theory and practice of teaching oral and written English also covered. 3 credits

581 FIELD EXPERIENCE: TEACHING SECOND LANGUAGE LEARNERS
Permission of the instructor is required to enroll. Practical experience in which second language teachers-in-training observe, participate in, and practice teaching under the supervision of the instructor and/or an experienced, certified teacher. 3 credits

589 SEMINAR IN ENGLISH
May be repeated with different topics. Special studies, and methods of literary research, in selected areas of English and American literature and language. 2-3 credits

590 WORKSHOP IN ENGLISH
(May be repeated with different topics.) Group studies of special topics in English. Cannot be used to meet undergraduate or graduate major requirements; for elective credit only. 1-3 credits

591 INTERNSHIP IN ENGLISH
Prerequisite: permission of instructor. Graduate internship, including analytical reading and writing focused on liberal arts and career applications of the study of English. May count up to three credits. 1-3 credits

592 TEACHING COLLEGE COMPOSITION PRACTICUM
Prerequisite: teaching assistantship. Orientation and weekly analysis of teaching rationale and practice, limited to teaching assistants in the Department of English. (Credits may not be used to meet M.A. in English degree requirements.) 3 credits

595 SHAKESPEAREAN DRAMA
Concentrated study of selected Shakespearean plays with emphasis on historical, critical and dramatic documents pertinent to development of Shakespeare's art. 3 credits

596 SHAKESPEARE'S CONTEMPORARIES IN ENGLISH DRAMA
Reactions to Shakespeare's plays, plays by Greene, Marlowe, Jonson, Beaumont, Fletcher, Webster, Middleton and Ford and in contemporary writings relevant to theory and practice of drama. 3 credits

597 MILTON
Emphasis on Milton's major poems and prose works: Paradise Lost, Paradise Regained, Areopagitica. Student becomes acquainted with Milton the man and Milton the artist. 3 credits

598 SEVENTEENTH-CENTURY ENGLISH LITERATURE
An examination of seventeenth-century British authors, including Donne, Jonson, Marvell, Milton, Bacon and Bunyan, and their canonical positions, their craft and their literary criticism. 3 credits

620 AUTOBIOGRAPHY AS LITERATURE
This course examines the genre of autobiography and memoir. A wide representation of autobiographies will be the focus of discussion and analysis. 3 credits
625 Autobiographical writing 3 credits
Using a workshop format, this course examines autobiographical essays written by class members. Attention will also be given to the art and craft of writing autobiography.

627 Keats and his contemporaries 3 credits
Readings of John Keats, studied against background of romantic poetic theory and poetry of Keats' contemporaries.

630 Literature of the 1930s 3 credits
A study of 1930s American literature in its social context, using recent critical theory to examine relationships between history and literature.

633 Seminar in James 3 credits
A study of Henry James' life and works. Primary emphasis will be on James' fiction, both long and short, early and late; but some attention will also be given to his literary criticism, travel pieces and plays.

641 Poe and Hawthorne 3 credits
Substantial readings from each author: tales, novels, essays, letters, poetry. Also, representative critical discussion about each author.

642 Whitman and Dickinson 3 credits
Students study the work of Walt Whitman, Emily Dickinson, and the appropriate recent scholarship. Students conduct, write about, and present their own scholarly research.

650 The new rhetorics 3 credits
This seminar examines the impact of rhetorical theory on the study and teaching of writing. We will study works from classical, modern, and postmodern rhetoricians.

651 The pragmatists 3 credits
This seminar examines the pragmatic roots of composition studies - the "fact tradition," including classical expressivism, and criticisms of that movement.

660 Cultural studies: theory and practice 3 credits
This course explores the relationship between Cultural Studies and English Studies, examining the impact of Cultural Studies on the practice of textual analysis.

665 Literary criticism 3 credits
Inquiry into nature and value of literature and problems of critical practice as represented in major statements of ancient and modern critics.

670 Modern linguistics 3 credits
Introduction to modern examination of methods and results of modern grammatical research in English, semantics, phonology and dialects. Goals include understanding of language variation and background preparation for linguistic studies of literature.

675 Theories of composition 3 credits
Study of composition theories and research, with attention to their implications for writing and writing instruction. Particular focus on such topics as composing processes, invention, form, style, modes of writing, language varieties and evaluation of writing. Class sessions include discussion of readings and presentations.

678 Research methodologies in composition 3 credits
Research methodologies in composition and their application. Students will define research areas, summarize and evaluate work already done, and propose and complete semester research projects.

679 WRITING FOR MBAs 3 credits
Emphasis in managerial writing. Writing tasks are presented as decision-making tools, and students develop strategies for messages to subordinates, analytical reports and messages to outsiders.

674 Theory and teaching of basic composition 3 credits
Review of current research and exploration of specific instructional methods for teaching basic composition.

676 SCIENCE WRITING 3 credits
Study of principles and writing practice for effective communication in the physical or social sciences, including purpose, audience, specialized document structure, and oral presentations.

680 School writing 3 credits
Study of composing, analyzing and evaluating academic arguments. Practice in specific forms of academic writing such as reviews of research, articles and book reviews.

683 Seminar in satire 3 credits
A study of satire from the middle ages through the late 20th Century, with particular attention to techniques of satiric attack, modes of comedy and irony and literary criticism.

685 Seminar in English 3 credits
May be repeated with change of topics) Special topics within the general field of literature and language, usually focusing on major figures or themes.

691 Individual reading in English 3 credits
Individual study under guidance of professor who directs and coordinates student's reading and research.

692 MASTER'S THESIS 6 credits
Original work in the field of literature and language and completion of graduate student's required thesis.

699 PhD THESIS 6 credits
Original work in the field of geography and planning and completion of graduate student's required thesis.

GEOGRAPHY AND PLANNING 3350:

505 Geographic information systems 3 credits
Introduction to the principles and concepts underlying geographic information systems (GIS) and their application in professional practice and academic research. Laboratory.

507 Advanced geographic information systems 3 credits
Prerequisite: 505 or permission. Advanced instruction in the theory and application of geographic information systems (GIS) including hands-on experience with both raster and vector GIS. Laboratory.

509 Archaeogeophysical survey 3 credits
Prerequisite: Permission. Advanced instruction in subsurface geophysical survey techniques in archaeology. Emphasis on magnetic gradiometry and electrical resistivity techniques, image processing and geological and archaeological interpretation.

515 environmental planning 3 credits
Scientific and technical principles for decision-making in planning, with emphasis on soils, land use, and water quality issues. Data sources and methods of site evaluation.

520 urban geography 3 credits
Spatial structure of urban systems; interaction between cities; internal structure of cities. Perspectives on urban change; contemporary urban geographic problems; urban and regional planning issues.

522 Transportation systems planning 3 credits
Study and analysis of transportation systems from a geographic perspective. Emphasis on transportation planning problems and issues, elements of transportation planning.

524 military geography 3 credits
Influence of physical and human geography on military operations and military history. Role played by geography in international conflicts.

532 LAND USE PLANNING LAW 3 credits
Acquaint student with past and present approaches to land use control in the United States and examine the political, economic, social and legal forces which have shaped existing land-use legislation.

533 PRACTICAL APPROACHES TO PLANNING 3 credits
Role of geographic investigation in city, regional and resource planning.

537 Planning analysis and projection methods 3 credits
Introduction to the primary analytic techniques for small-area demographic and economic analysis and projection.

538 LAND USE PLANNING METHODS 3 credits
Application of GIS and other computer-based tools to the preparation, implementation and evaluation of comprehensive land use plans.

539 HISTORY OF URBAN DESIGN AND PLANNING 3 credits
Dynamics of urban settlements and planning from the perspective of urban design and related societal trends. Comparison of world regional and historic urban forms. Experience in "reading" environments as visual landscapes.

540 Cartography 3 credits
Theoretical and practical applications of cartographic principles used to design and produce maps for research reports, public presentations, publication, and other professional uses.

541 Global positioning systems (gps) 1 credit
Fundamentals of Global Positioning Systems (GPS), with emphasis on geographic and planning activities. Includes hands-on exercises.

542 Cartographic theory and design 3 credits
Prerequisites: 540 or permission. Principles and techniques of thematic mapping. Stresses maps as communication tools. Examines principal thematic mapping techniques and means of presenting quantitative and qualitative data. Laboratory.

543 Urban applications in GIS 3 credits
Prerequisites: 505 or permission. Applications of GIS in the urban context, including methods used for analysis of population density gradients, migration, and accessibility.

544 Applications in cartography and geographic information systems 3 credits
Prerequisite: 540, 541, or permission. Application of analytic and presentation techniques from cartographic and geographic information systems to practical problems in geographic and planning laboratory.

545 GIS database design 3 credits
Prerequisite: 540 or permission. Introduction to theory and concepts of geographic database modeling, geodatabase design, and topology. Emphasis on current practices and methodologies in geographic and planning.

546 GIS Programming and customization 3 credits
Prerequisites: 540 or permission. Introduction to use of scripting languages for customizing the interface and extending the functionality of desktop GIS software.

547 remote sensing 3 credits
Prerequisites: 540 or permission. Principles and techniques of remote sensing. Stresses concepts, systems, and methods of applying aerial photography, satellite imagery, and other remote-sensing data for analyzing geographic, geological, and other earth phenomena. Laboratory.

548 Remote sensing 3 credits
Prerequisite: 547 or permission. Current research in remote sensing. Applications in study of human cultural and biophysical environment. Practice in planning, design, execution and interpretation of remote sensing studies. Laboratory.

550 DEVELOPMENT PLANNING 3 credits
A study of planning concepts and techniques for developing countries, including growth and development agencies, regional inequities and alternative approaches.

560 Political geography 3 credits
Principles and theory in contemporary domestic and international political geographies. Emphasis on the changing local and global patterns of electoral politics, security, and diplomacy.

581 Research methods in geography and planning 3 credits
Investigation of library and archive resources. Emphasis on development of professional writing skills.

583 Spatial analysis 3 credits
Analysis of mapped statistical surfaces. Principles for use of map as model for statistical evidence, prediction, hypothesis testing.

589 SPECIAL TOPICS IN GEOGRAPHY (May be repeated) Selected topics of interest in geography.

590 WORKSHOP IN GEOGRAPHY 1-3 credits
(May be repeated for a maximum of six credits each) Group studies special topics in geography.

595 soil and water field studies 3 credits
Properties, origins and uses of major soil and water regime landscapes. Stresses relationships between soil and the hydrological cycle, urbanization, suburbanization and agriculture. Field trips required.

596 Field research methods 3 credits
Field work enabling student to become competent in collecting, organizing and analyzing data while carrying out field research projects. Field trips required.

597 Regional field studies 1-3 credits
On-campus intensive study of geographic features of a region or regions through direct observation and travel using appropriate field study methods. (Repeatable up to six credits)

600, SEMINAR 3 credits each
(May be repeated for a maximum of six credits each) Prerequisite: permission. Investigation and analysis of selected topics in particular fields of geography. Specialization indicated by second portion of title.

630 Planning theory 3 credits
Introduction to the political, institutional and ethical foundations and procedural theories of urban and regional planning.

631 Facilities Planning 3 credits
Study of need, process and limitation of urban facilities planning.

633 Comparative planning 3 credits
A survey of national, regional and local planning implementation measures in use in the developed world. Particular attention will be given to the planning experiences of European nations and their impact on American planning theory and practice.

680 Advanced spatial analysis 3 credits
Prerequisite: 583 or permission. Advanced concepts and methodologies in geographic research. Emphasis on quantitative revolution in geographic analysis including multivariate analysis as factor, discriminant and economical analysis, and multidimensional scaling.

685 Planning internship 3 credits
Prerequisite: permission. Individual experience in selected planning agencies for supervised performance in professional planning work. (May be repeated but only 3 credits may be applied to total credit hours needed for degree requirements.) Credit/Non-Credit.
GEOLOGY 3370:

505 ARCHAEOLOGICAL GEOLOGY 3 credits (includes lab)
   Prerequisite: Admission to the Geology master's program or permission. Provides background in fundamental principles and techniques relevant to archaeologists. Topics include absolute dating, location, excavation and interpretation of archaeological artifacts, and remote sensing techniques.实验室.

507 ARCHAEOGEOLOGICAL PHYSICAL SURVEY 3 credits
   Prerequisites: Admission to the Geology master's program or permission. Advanced instruction in subsurface geophysical survey techniques in archaeology. Emphasis on magnetic gradiometry and electrical resistivity techniques, image processing and geological and archaeological interpretation.

510 REGIONAL GEOLOGY OF NORTH AMERICA 3 credits
   Prerequisites: Admission to the Geology master's program or permission. Examination of physiographic provinces of North America emphasizing structure, tectonic setting, stratigraphy, and processes responsible for landforms in each province. Laboratory. Field trips.

511 GLACIAL GEOLOGY 3 credits
   Prerequisite: Admission to the Geology master's program or permission. Study of the origins and effects of continental and coastal glaciers with particular attention paid to the interaction of waves and currents with sediment, and the development of associated sedimentary features. Field trips.

525 PRINCIPLES OF SEDIMENTARY BASIN ANALYSIS 3 credits
   Prerequisite: Admission to the Geology master's program or permission. Primarily the study of different systems, regional and global stratigraphic cycles, and sedimentation and plate tectonics.

532 OPTICAL MINERALOGY—INTRODUCTORY PETROGRAPHY 3 credits
   Prerequisites: Admission to the Geology master's program or permission. Optical techniques for identification, characterization, and classification of minerals and rocks using the petrographic microscope. Laboratory.

533 ADVANCED PETROGRAPHY 3 credits
   Prerequisites: GEO 332. Principles of igneous, metamorphic and sedimentary rocks as exemplified by microscopic studies of textures and mineral assemblages using thin section. Laboratory.

535 PETROLEUM GEOLOGY 3 credits
   Prerequisite: Admission to the Geology master's program or permission. Natural occurrence of petroleum. Characteristics, origin, entrapment and exploration methods. Laboratory. Field trips.

536 COAL GEOLOGY 3 credits
   Prerequisites: Admission to the Geology master's program or permission. Origin, composition and occurrence of coal with emphasis on depositional environments, coalification processes, and processes of evaluation and exploitation. Laboratory. Field trips.

538 ECONOMIC GEOLOGY 3 credits
   Prerequisites: Admission to the Geology master's program or permission. Study of metallic and nonmetallic mineral deposits emphasizing paragenesis and exploration. Laboratory. Field trips.

541 FUNDAMENTALS OF GEOPHYSICS 3 credits
   Prerequisite: Admission to the Geology master's program or permission. Fundamental concepts in solid earth geophysics, planetary physics, geodesy, and geomagnetism. Contributions of geophysics to recent major developments in geoscience.

544 ENVIRONMENTAL MAGNETISM 3 credits
   Prerequisites: Admission to the Geology master's program or permission. Introduction to the theory and methods of environmental magnetism and the application of environmental magnetic techniques to interpreting sedimentary deposits.

545 ENVIRONMENTAL AND ENGINEERING GEOCHEMISTRY 3 credits
   Advanced subsurface exploration using ground penetrating radar and multi-channel electrical resistivity. Applications in environmental assessment, civil engineering, and geological engineering. Field trips.

546 EXPLORATION GEOPHYSICS 3 credits
   Prerequisite: Admission to the Geology master's program or permission. Basic principles and techniques of geophysical exploration with emphasis on gravimetric, magnetic, seismic and electrical methods and application to geological problems. Laboratory. Field trips.

547 ADVANCED STRUCTURAL GEOLOGY 3 credits
   Prerequisites: Admission to the Geology master's program or permission. Fundamental and advanced concepts of structural geology with emphasis on current and developing concepts. Laboratory. Field trips.

551 FIELD/LAB STUDIES IN ENVIRONMENTAL SCIENCE 3 credits
   Prerequisite: Permission. A Field/Laboratory course emphasizing selected environmental topics. Field types.

552 GEOLOGY AND ENVIRONMENTAL SCIENCE SERVICE LEARNING 1-3 credits (May be repeated for a total of six credits)
   Prerequisite: Permission of instructor. Students will complete a research project involving collecting, analyzing, and interpreting real world data. May be repeated for a maximum of six credit hours.

553 GEOLOGY FIELD CAMP I 3 credits
   Prerequisites: Admission to the Geology master's program or permission. Introduction to geological field work. Laboratory. Field trips.

554 GEOLOGY FIELD CAMP II 3 credits
   Prerequisites: Admission to the Geology master's program or permission. Advanced techniques in geological field work. Laboratory. Field trips.

555 FIELD STUDIES IN GEOLOGY 1-3 credits
   Prerequisites: Permission of instructor. Field trip course emphasizing aspects of geology not readily studied in Ohio. Includes pre-trip preparation and post-trip examination. Student will bear trip expenses. (May be repeated for up to four credits)

562 MACROEVOLUTION 3 credits
   Prerequisite: Admission to the Geology master's program or permission. Provides a comprehensive treatment of macroevolutionary processes focusing on evidence from the fossil record. Topics include genetics, speciation, development, and fossil lineages. Laboratory.

563 ENVIRONMENTAL MICROPALeONTOLOGY 3 credits
   Prerequisite: Admission to the Geology master's program or permission. Introduction to techniques of micropaleontology as proxy indicators for environmental and climate change. Laboratory.

567 GEOMICROBIOLOGY 3 credits
   Prerequisite: Graduate standing. A course addressing the physiology, ecology, and activities of microorganisms that mediate important biochemical processes, and the interdisciplinary approaches to studying them.

568 GEOCHEMISTRY 3 credits
   Prerequisite: Admission to the Geology master's program or permission. Application of chemical principles to the study of geologic processes. Laboratory. Field trips.

572 STABLE ISOTOPE GEOCHEMISTRY 3 credits
   Prerequisites: Admission to the Geology master's program or permission. Application of stable isotope geochemistry to the study of the hydrologic and carbon cycles, modern sedimentary environments, and the interpretation of sedimentary rocks. Laboratory.

574 GROUNDWATER HYDROLOGY 3 credits
   Prerequisite: Admission to the Geology master's program or permission. Origin, occurrence, regimen and utilization of groundwater. Qualitative and quantitative presentation of geological and geochronological aspects of groundwater hydrology. Laboratory. Field trips.

580 SEMINAR IN ENVIRONMENTAL STUDIES 2 credits
   (May be repeated for a maximum of six credits) Prerequisite: Graduate status. Discussion of specific environmental topic(s) from an interdisciplinary viewpoint; resource persons are drawn from the University and surrounding community.

581 ANALYTICAL METHODS IN GEOLOGY 2 credits
   Prerequisites: Admission to the Geology master's program or permission. A Survey of analytical methods used to solve geologic problems with emphasis on method selection, proper sample collection, analysis, data quality and data presentation.

584 GEOSCIENCE INFORMATION ACQUISITION AND MANAGEMENT 2 credits
   Prerequisite: must be a Geology Department graduate student or senior major in geology, or have permission of instructor. Methodology for finding, gathering, managing, and evaluating geoscience information. Emphasis on finding data sources (including electronic), creating valid data sets, visualizing data.

585 INDIVIDUAL READINGS IN GEOLOGY 1-6 credits
   Prerequisite: permission of graduate advisor required. (May be repeated for a total of 8 credits; credits may not be used to meet degree requirements.) Directed reading to fit individual student programs. Credit/Noncredit.

590 WORKSHOP IN GEOLOGY AND ENVIRONMENTAL SCIENCE 1-3 credits
   (May be repeated) Group studies of special topics in geology and environmental science. May not be used to meet graduate degree requirements in the department. May be used for elective credit only.

591 GRADUATE INTERNSHIP IN GEOLOGY AND ENVIRONMENTAL SCIENCE 1-3 credits
   (May be repeated for a maximum of six credits) Prerequisite: Permission of department chair. Internship. Supervised professional experience in geology or geophysics. May only apply three credits toward minimum graduate requirements in Geology and Environmental Science.

631 ROCKS AND MINERALS 4 credits
   Prerequisites: Admission to the Geology master's program or permission. Intensive course integrating crystallography, mineralogy and petrology for the science teacher and graduate student from disciplines other than geology. Laboratory.

639 NUCLEAR GEOLOGY 3 credits
   (Two hour lecture, three hour laboratory) Prerequisites: minimum of seven credits in chemistry, eight credits in physics, eight credits in calculus and eight credits in geology or permission. Discourses nature of radioactive and stable isotopes, their applications in geology, radioactive minerals, radioactive background and disposal of radioactive wastes. Nuclear analytical techniques will also be discussed; lecture, laboratory and field study.

643 GEOSTATISTICS 3 credits
   Prerequisites: Admission to the Geology master's program or permission. Application of statistical methods to geology and geophysics including tests of hypotheses, trend surface analysis, analysis of variance, nonparametric statistics and time series analysis.

655 ADVANCED FIELD STUDIES 1-3 credits
   (May be repeated for a maximum of four credits) Prerequisite: permission of instructor. Field trip course studying aspects of geology not seen in Ohio. Includes pre- and post-trip academic activities. Students will bear costs.

662 GLOBAL TECTONICS 3 credits
   Prerequisites: Admission to the Geology master's program or permission. Theoretical study of the physical forces involved in formation and deformation of earth’s crust with emphasis on plate tectonics and associated diastrophic features.

663 GEOLoGIC RECORD OF PAST GLOBAL CHANGE 3 credits
   Prerequisite: equivalent of baccalaureate degree in geology or permission of instructor. Study of the geologic record of past global climate and environmental change from geochronological, palaeontological, sedimentological and other geological evidence.

664 ADVANCED GROUNDWATER HYDROLOGY 3 credits
   Prerequisites: Admission to the Geology master's program or permission. Study of the hydrologic and water table and artesian aquifers under steady and nonsteady state conditions. Collection and evaluation of data field with regard to theory. Water well and well field design. Laboratory and field work.

668 ADVANCED CONVENIENCE GEOLOGY 2 credits
   (May be repeated for a total of six credits) Selected topics with reference material from original sources.

674 SELECTED TOPICS IN GEOLOGY 1-3 credits
   (May be repeated for a total of eight credits) Prerequisite: permission. Topics not regularly offered as formal courses, generally of classic current importance. Entails readings, lectures, discussions and/or guided laboratory work.

675 ADVANCED INDIVIDUAL READINGS IN GEOLOGY 1-4 credits
   Prerequisite: Permission of graduate advisor. Directed readings to fit individual student programs. (May be repeated for a maximum of nine credits)

688 GEOLOGY TEACHING PRACTICUM 2 credits
   Corequisite: graduate assistantship. Training and experience in college teaching of geology under supervision of experienced faculty. May be repeated for a maximum of 6 credits. Credits may not be used to meet degree requirements. Credit/Noncredit.

696 GEOLOGY COLLOQUIUM 1 credit
   Lecture on current topics in geology and sciences and thesis proposals and defenses by graduate students. May be repeated; does not satisfy degree requirements.

698 GRADUATE RESEARCH PROBLEMS 1-3 credits
   (May be repeated for a maximum of six credits) Prerequisite: permission. Directed reading and research in an aspect of geology chosen by student in consultation with an instructor.
HISTORY

3400:

500 GENDER AND CULTURE IN CHINA
Prequisite: Graduate standing. This course examines the dynamic between gender and culture from late imperial to post-socialist China, with connections drawn to public policies in different eras.

501 JAPAN AND THE PACIFIC WAR, 1895-1945
The rise of Japanese militarism, Japan's drive to create an empire in East and Southeast Asia, Japan’s role in the Pacific War, 1937-1945.

504 STUDIES IN ROMAN HISTORY
Prequisite: completion of 6 hours of History courses at the 200 or 300 level. Concentrated investigation of selected topics such as imperialism in middle and late Republic, the age of Augustus, or the fall of western Empire.

509 IMPERIAL SPAIN, 1469-1700
Prequisite: For M.A. and Ph.D. students only. This course examines the rise of a new power in Spain as the first world power. It covers Spanish political, cultural, and social history, 1469-1700.

510 POLITICAL AND FILM
Examines films as historical experiences, historical events, and artifacts of history. Themes and foci will vary. Repeatable once with permission.

516 MODERN INDIA
History of the Indian subcontinent from c.1500 with emphasis on Indian society and culture, British imperialism, and the emergence of Indian nationalism.

517 LATIN AMERICA AND THE UNITED STATES

518 HISTORY OF BRAZIL SINCE 1500
Survey of the economic, political, social, and cultural history of Brazil since 1500 to the present; the course also examines historiographical debates in Brazilian history.

524 THE RENAISSANCE
The age of transition from the Middle Ages to modern times (1350-1600). Special emphasis on intellectual trends, the development of humanism, and the fine arts.

525 THE REFORMATION
Europe in 16th Century; its religious, cultural, political and diplomatic development, with special emphasis on Protestant, Anglican and Catholic reforms.

538 NAZI GERMANY
This course covers the social, economic, and political history of Germany from World War I to 1945 with emphasis on the Third Reich.

540 TUDOR AND STUART BRITAIN, 1485-1714
An examination of the development of, and increasing links between the British kingdoms in the early modern period, with emphasis on culture, politics, and religion.

543 CHURCHILL’S ENGLAND
An examination of the changes that Britain experienced during the life of Winston Churchill, 1874-1965. Emphasis is on cultural, social, and political developments.

554 THE CIVIL WAR AND RECONSTRUCTION, 1850-1877
Sectionalism, slavery and the causes of the Civil War; wartime activities of the Union and Confederacy; reconstruction and the new Union.

569 AMERICAN VOCABULARY
This course covers the history of colonial America from the first European contact in the Americas in 1492 to the onset of the American Revolution.

572 THE AMERICAN REVOLUTIONARY ERA: POLITICAL, MILITARY, AND INSTITUTIONAL ASPECTS
The struggle for the rights of Englishmen and independence; the impact of war on American society; the creation of republican institutions.

573 THE EARLY AMERICAN REPUBLIC
Prequisite: Graduate student status. The evolution of the American republic from its early beginnings through the American Revolution to the antebellum era. Emphasis upon political, social, and cultural developments.

574 THE CIVIL WAR AND RECONSTRUCTION, 1850-1877
Sectionalism, slavery and the causes of the Civil War: wartime activities of the Union and Confederacy; reconstruction and the new Union.

575 THE ORIGINS OF MODERN AMERICA, 1877-1917
Prequisite: Graduate student status. Special studies in the history of the United States from 1877-1920; emphasis on political developments.

576 AMERICA IN WORLD WARS AND DEPRESSION, 1917-1945
World War I and Versailles; the 1920s, the Great Depression and the New Deal; World War II.

577 THE UNITED STATES SINCE 1945
Nuclear war, cold war, foreign policy and domestic affairs to present. Social, political, constitutional, diplomatic, cultural and economic changes since 1945.

581 THE UNITED STATES AS A WORLD POWER
This course analyses the emergence and functioning of the United States as a world power, with particular emphasis on the twentieth century.

587 U.S. CONSTITUTIONAL HISTORY SINCE 1787
This course will examine the evolution of constitutional government as well as civil liberties and individual rights from the Civil War to the present.

589 AMERICAN ECONOMY SINCE 1900
Survey of economic developments since 1900; topics include agriculture, business and labor. Special emphasis on role of big business and evolution of monetary and fiscal policy.

590 HISTORY OF AMERICAN POP CULTURE
Historical analysis of mass cultural phenomena and the social experiences associated with mass media, as well as the evolution of American life in the Pacific modern American life in the twentieth and twentieth centuries.

591 AFRICAN-AMERICAN SOCIOLOGY AND INTELLECTUAL HISTORY
Examines key events and issues within African-American culture, conditions facing black people within America and efforts toward coordinated black activity.

592 AFRICAN-AMERICAN WOMEN’S HISTORY
Study of African-American women's historical experience from colonial times to the present featuring autobiography, fictional, and secondary works authored by black women.

593 OHIO HISTORY
Political, social, economic and intellectual history of Ohio, with special emphasis on Ohio's relationship to Old Northwest and to the nation.

597 AMERICAN ENVIRONMENTAL HISTORY
Utilization, conservation of natural resources from beginnings of American society to present; combination of economic, technological history of extensive treatment of public policy, environmental issues.

598 MEXICO
History of Mexico from Indian civilizations to present with emphasis on relations with United States; social and political ramifications of the 20th Century Mexican revolution.

599 CENTRAL AMERICA AND THE CARIBBEAN
Selected aspects of the histories of Central American and Caribbean countries with emphasis on popular and peasant movements, political reform, social revolution, economic and under-development, and relations with the United States.

600 WAR AND WESTERN CIVILIZATION
War and society in Europe, America and beyond from the ancient world to present with special emphasis on period since 1740.

601 HISTORY MUSEUMS AND ARCHIVES
This course will focus on the work of history museums, historical societies and historic house museums, and archives.

602 HISTORY, COMMUNITIES, AND MEMORY
Course examines the interactions between the work of academic historians and the public in terms such as local history, monuments, oral history, film, and the internet.

607 SCIENCE AND TECHNOLOGY IN WORLD HISTORY
Prequisite: Six credits of 3400 courses or permission of instructor. This course examines the development and diffusion of science and technology in human history, its impact on society, culture, and daily life.

608 OTTOMAN STATE AND SOCIETY
Explores political, economic, and social dynamics of one of the world’s most enduring and expansive multiethnic empires.

609 SPECIAL STUDIES: NORTH AMERICAN HISTORY
Prequisite: Graduate student status. Special studies in the history of North America (Rio Grande to the Arctic). See departmental office for information on particular offerings.

610 WORKSHOP IN HISTORY
(May be repeated) Group studies of special subjects pertaining to history. May be used for elective credit only. May not be used to meet undergraduate or graduate major requirements in history.

611 SPECIAL STUDIES: EUROPEAN HISTORY
Prequisite: Graduate student status. Special studies in European history (from the fall of the Roman Empire to the present). See department office for information on particular offerings.

612 SPECIAL STUDIES IN HISTORY: OTHER
Prequisite: Graduate student status. Special studies in history of Latin America, Asia, Africa, or the Pacific. See department office for information on particular offerings.

613 RACE, NATION, AND CLASS IN THE MIDDLE EAST
This course analyzes identity politics and the development of the ideas of race, nation, and class in the Middle East from a historical perspective.

614 WOMEN AND GENDER IN EASTERN EUROPE
This course explores the multi-layered processes and dimensions, including texts, cultural values and practices, institutions and events, which have shaped and continue to shape women’s experiences in the Middle East.

615 GRADUATE RESEARCH SEMINAR
Prequisite: Eight 3400 credits or permission of instructor. Research seminar designed to train students in the skills of researching and writing history, with a particular emphasis on article length.

616 MA OPTION PAPER COMPLETION
Prequisite: Permission of instructor. This course is for students completing the MA research paper option. Students should enroll in this course during the semester the option paper is completed.

617 GRADUATE RESEARCH SEMINAR--COMPARATIVE STUDIES IN WORLD CIVILIZATION
Prequisite: Graduate assistantship. Comparative historiography on world civilizations: East Asia, South Asia, Middle East, Africa, and the Americas. Emphasis on key themes: kingship, empire colonization, nationalism.

618 READING SEMINAR: THE MIDDLE EAST
Study of historical literature, sources of materials, and major interpretations of Middle Eastern history.

619 READING SEMINAR IN ANCIENT HISTORY
Study of historical literature, sources of materials and major interpretations of ancient history, especially Greek and Roman periods.

620 READING SEMINAR IN MEDIEVAL HISTORY
Study of historical literature, sources of materials and major interpretations of medieval European history.

621 READING SEMINAR IN MODERN EUROPEAN HISTORY TO 1815
Study of historical literature, sources of materials, major interpretations of early modern European history to Napoleonic era.

622 READING SEMINAR IN MODERN EUROPEAN HISTORY SINCE 1815
Study of historical literature, sources of materials and major interpretations of modern European history since early 19th Century.

623 READING SEMINAR: THE MODERN BRITISH EMPIRE
Prequisite: Graduate student status. Study of the historical literature on the modern British Empire, from the end of the American Revolution through decolonization in the 20th century.

624 READING SEMINAR IN AMERICAN HISTORY TO 1877
Study of historical literature, sources of materials and major interpretations of American colonial and United States history to Civil War.

625 READING SEMINAR IN AMERICAN HISTORY SINCE 1877
Study of historical literature, sources of materials and major interpretations of United States history since Civil War.

626 READING SEMINAR IN LATIN AMERICAN HISTORY
Study of historical literature, primary texts, and major interpretations and debates on selected topics in Latin American history.

627 READING SEMINAR: CHINA
Study of Chinese texts, secondary literature, and major interpretations of the history of China.

628 HISTORIOGRAPHY
Study of contemporary historical writing and interpretations through the ages. Required for master's degree if candidate has not had equivalent undergraduate or graduate course elsewhere.

629 HISTORY TEACHING PRACTICUM
Prequisite: Graduate assistantship. Required of all graduate assistants each fall semester. Training and experience in college teaching of history under the supervision of an experienced faculty member. Credits may not be used to meet degree requirements.

630 THESIS RESEARCH
Research for Master of Arts degree thesis. 1-6 credits
Graduate Courses

697.SPECIAL TOPICS IN APPLIED MATHEMATICS I
Prerequisite: Departmental permission. May not be used to meet master's degree requirements for applied mathematics.
3 credits (May be repeated for a total of six credits)

501 HISTORY OF MATHEMATICS
Prerequisite: Departmental permission. Origin and development of mathematical ideas. Course does not meet degree requirements in the department.
3 credits

3 credits

510 ADVANCED LINEAR ALGEBRA
Prerequisite: Departmental permission. Study of vector spaces, linear transformation, canonical and quadratic forms, inner product spaces.
3 credits

511 ABSTRACT ALGEBRA I
Prerequisite: Departmental permission. Study of groups, rings, fields, integral domains, vector spaces, field extensions. Galois theory. May not be used to meet master's degree requirements in mathematics.
3 credits

512 ABSTRACT ALGEBRA II
Prerequisite: S21 or departmental permission. Study of groups, rings, fields, integral domains, vector spaces, field extensions. Galois theory.
3 credits

513 THEORY OF NUMBERS
Prerequisite: Departmental permission. Euclidean algorithm, unique factorization in integral domains, congruences, primitive roots, indices, quadratic residues, number-theoretic functions, Gaussian integers and continued fractions.
3 credits

515 COMBINATORICS AND GRAPH THEORY
Prerequisite: Departmental permission. Introduction to basic ideas and techniques of mathematical counting; properties of structure of systems.
3 credits

520 MATHEMATICAL TECHNOLOGY AND COMMUNICATION
Prerequisite: Departmental permission. Graphical, numerical, and algebraic computation with applications using a variety of mathematical hardware and software: symbolic manipulators, dynamic geometry software, programs, scripts and web browsers.
3 credits

521 ADVANCED CALCULUS I AND II
Prerequisite: Departmental permission. Real number system, sequences, series, set theory, continuity, differentiation, integration, partial derivatives, multiple integration, maximum and minimum, convergence and uniform convergence, power series, improper integrals, transformations, line and surface integrals. 340/521 may not be used to meet master's degree requirements for mathematics or applied mathematics.
3 credits each

525 COMPLEX VARIABLES
Prerequisite: Departmental permission. Complex variables; elementary functions, conformal representation and analytic functions; integration and Cauchy's theorem; power series and Laurent series; residue theorem; applications such as conformal mappings, inversion of integral transform.
3 credits

527 APPLIED NUMERICAL METHODS I
Prerequisite: Departmental permission. Numerical methods in polynomial interpolation, root finding, numerical integration, and numerical linear algebra. May not be used to meet master's degree requirements for applied mathematics.
3 credits

528 APPLIED NUMERICAL METHODS II
Prerequisite: Departmental permission. Numerical methods in the solution of ordinary and partial differential equations. Numerical differentiation, Runge-Kutta methods, and iterative methods for ODEs, finite difference for PDEs.
3 credits

532 PARTIAL DIFFERENTIAL EQUATIONS
Prerequisite: Departmental permission. The classical initial value and boundary value problems of mathematical physics developed and solved using Fourier series and integral transform.
4 credits

535 SYSTEMS OF ORDINARY DIFFERENTIAL EQUATIONS
Prerequisite: Departmental permission. Analysis, solution of systems of equations, linear, nonlinear. Topics: stability theory, perturbation methods, asymptotic methods, applications from physical, social sciences.
3 credits

536 MATHEMATICAL MODELS
Prerequisite: Departmental permission. Formulation and analysis of mathematical models in social and physical sciences. Analysis of deterministic and stochastic models. Topics may include stochastic processes, linear programming, graph theory, theory of measurement.
3 credits

538 ADVANCED ENGINEERING MATHEMATICS I
Prerequisite: Departmental permission. Matrices, eigenvalue problems, systems of ODEs, vector analysis, complex variables. May not be used to meet master’s degree requirements for applied mathematics.
3 credits

539 ADVANCED ENGINEERING MATHEMATICS II
Prerequisite: Departmental permission. Special functions, Fourier series and transformations, PDEs.
3 credits

541 CONCEPTS IN GEOMETRY
Prerequisite: Departmental permission. Axiomatic treatment of both Euclidean and non-Euclidean geometries. Other concepts included are finite geometry, transformations, constructions and inversions.
4 credits

545 INTRODUCTION TO TOPOLOGY
Prerequisite: Departmental permission. Introduction to topological spaces and topologies, mapping, cardinality, homeomorphisms, connected spaces, metric spaces.
3 credits

589 TOPICS IN MATHEMATICS
(May be repeated) Group studies of special topics in mathematics and applied mathematics. May not be used to meet undergraduate or graduate credit requirements in mathematics and statistics. May be used for elective credit only.
3-4 credits

611 TOPICS IN ALGEBRA
Prerequisite: S12 or departmental permission. Advanced study of selected topics in some of the following areas: semigroups, groups, rings, modules and fields.
3 credits

621 REAL ANALYSIS
Prerequisite: S22 or departmental permission. In-depth study of real analysis – metric spaces, normed vector spaces, integration theory, Hilbert spaces.
3 credits

625 ANALYTIC FUNCTION THEORY
Prerequisite: S22 or departmental permission. Complex number system, holomorphic functions, series, continuity, differentiability, power series, complex integration, residue theory, singularities, analytic continuation, asymptotic expansion.
3 credits

627 ADVANCED NUMERICAL ANALYSIS I
Prerequisite: S22 and knowledge of C++, FORTRAN, or MATLAB or departmental permission. Error propagation; theoretical analysis of numerical methods in interpolation, integration, and ordinary differential equations.
3 credits

628 ADVANCED NUMERICAL ANALYSIS II
Prerequisite: S22 and knowledge of C++, FORTRAN, or MATLAB or departmental permission. Theoretical analysis of numerical methods in linear algebra.
3 credits

631 CALCULUS OF VARIATIONS
Prerequisite: S22 or departmental permission. Problems with fixed and movable endpoints, problems with constraints, generalization to several variables, the maximality principle, linear time-optimal problems, the connection between classical theory and the variational principle.
3 credits

632 ADVANCED PARTIAL DIFFERENTIAL EQUATIONS
Prerequisite: S52 or departmental permission. Existence, uniqueness and stability of solutions to general classes of partial differential equations. Methods for solving these classes introduced, emphasizing both analytical and numerical techniques.
3 credits

633,4 METHODS OF APPLIED MATHEMATICS I AND II
3 credits each

528 APPLIED NUMERICAL METHODS II
Prerequisite: Departmental permission. Methods of applied mathematics concentrating on techniques for analysis of differential and integral equations – applied complex analysis, integral transforms, partial differential equations, and integral equations.
3 credits

635 OPTIMIZATION
Prerequisite: S22 or departmental permission. Unconstrained and constrained optimization theory and methods in applied problems.
3 credits

636 ADVANCED COMBINATORICS AND GRAPH THEORY
Prerequisite: Departmental permission. Theory and techniques of combinatorics as applied to network problems and graph theoretic problems.
3 credits

638 THEORY AND APPLICATION OF WAVELETS
Prerequisite: permission of instructor. Theory of wavelets and applications to signal and image analysis. Topics include basic theoretical foundations, filter bands, discrete and continuous wavelet transforms, wavelet packets, and applications.
3 credits

639 ADVANCED TOPICS IN MATHEMATICS
(May be repeated for a total of six credits) Prerequisite: permission of advisor. Seminar-type discussion on topics in mathematics leading to supervised research project. No more than 2 credits apply to major requirements.
1-3 credits

697 INDIVIDUAL READING
(May be repeated for a total of four credits) Prerequisite: standing and permission. Directed studies in mathematics at graduate level under guidance of selected faculty member.
1-3 credits

698 PRACTICUM IN MATHEMATICS
(May be repeated) Prerequisite: graduate teaching assistant or permission. Training and experience in college teaching of mathematical sciences. May not be used to meet degree requirements.
1-3 credits

699 MASTER'S RESEARCH
(May be repeated) Prerequisite: permission of advisor. Research in suitable topics in mathematics or applied mathematics culminating in a research paper. May not be used to meet master's degree requirements for mathematics or applied mathematics.
1-6 credits

699 MASTER'S THESIS
Prerequisite: permission. Properly qualified candidate for master's degree may obtain three credits for research that culminates in a public oral presentation of the faculty-supervised thesis.
3 credits

721,2 FUNCTIONAL ANALYSIS I AND II
3 credits each

530 OR 630
(May be repeated) Prerequisite: S30 and 630 or departmental permission. These courses are sequenced, study of normed linear spaces and transformations between them with an emphasis on the formulation and analysis of differential and integral equations as operator equations on these spaces.
3 credits

728 MATRIX ITERATIVE ANALYSIS
3 credits

730 ADVANCED NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS
Prerequisite: S52 and 528, or 628, or departmental permission. Derivation, analysis, and implementation of difference and integral-based methods for the solution of partial differential equations and systems of differential equations.
3 credits

732 ADVANCED PARTIAL DIFFERENTIAL EQUATIONS II
3 credits

532 Prerequisite: S52 and 532, or departmental permission. Well-posedness of elliptic, hyperbolic- and parabolic problems. Variational Methods for Elliptic problems, Conservation Laws and numerical methods, potential theory and integral equations.
3 credits

733,4ASYMPTOTIC METHODS AND NONLINEAR ANALYSIS I AND II
3 credits each

533,633 Prerequisite: 633/634 or equivalent. Survey of asymptotic and perturbation methods as applied to integrals and differential equations. Topics: bifurcation and stability with applications from the physical sciences and engineering.
3 credits

735 DYNAMICAL SYSTEMS
Prerequisite: S52 or departmental permission. The study of mathematical models of systems which evolve over time. An introduction to maps and applications to ordinary differential equations.
3 credits

501 FUNDAMENTALS OF DATA STRUCTURES
3 credits

3 credits

522 Prerequisite: Programming experience in C. Basic data structures and algorithms, stacks, queues, linked lists, trees, hash tables, and graphic sorting and search algorithms. Introduction to data abstraction and algorithm analysis. (May not be used to meet computer science requirements.)
3 credits

506 INTRODUCTION TO C AND UNIX
Prerequisite: Programming experience. C language programming. UNIX shell programming, file structure, system calls, and interprocess communication. (May not be used to meet computer science requirements.)
3 credits

508 WINDOWS PROGRAMMING
Prerequisite: Programming experience. Windows operating systems, integrated development environment, event-driven programming, graphical user interface design, use of object libraries, component object model, object linking and embedding, client-server objects.
3 credits

546 SYSTEM DESIGN
Prerequisite: 545 or departmental permission. Graphical user interface design, using object libraries, component object model, object linking and embedding, client-server objects.
3 credits
651 INTRODUCTION TO DISCRETE STRUCTURES 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. Introduction to algebraic structures of importance to computer science. Topics include graph theory, formal logic, set theory, automata theory, formal languages, and the lambda calculus.

521 OBJECT-ORIENTED PROGRAMMING 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. Object-oriented programming design and analysis, in-depth study of different development models. Comparison with other programming paradigms.

628 OPERATING SYSTEMS 3 credits
Prerequisites: Admission to Computer Science master’s program or permission. Introduction to operating system design, analysis, and functioning of different development models. Comparison with other programming paradigms.

580 SOFTWARE ENGINEERING 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. An overview of the UNIX operating system. System programming, process management, processor management, storage management, scheduling algorithms, resource protection, and system programming.

303 THEORY OF PROGRAMMING LANGUAGES 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. Theoretical foundations of programming languages and their applications, formal definitions of programming languages, Backus Normal Form, semantics. Alternative programming paradigms including functional programming. (May not be used to meet computer science master’s degree requirements)

535 ALGORITHMS 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. Analysis and design of efficient algorithms for random access machines; derivation of pattern classification algorithms.

540 COMPILER DESIGN 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. Techniques used in constructing compilers, including lexical and syntactic analysis, parsing techniques, object code generation and optimization. Course requires a compiler implementation project.

545 INTRODUCTION TO BIOINFORMATICS 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. Introduction to the origins of bioinformatics. Topics include concepts of molecular genetics, biological databases, database searching, sequence alignments, phylogenetic trees, structure prediction, and multiple sequence data analysis.

553 COMPUTER SECURITY 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. Principles of computer security; cryptography, authentication, secure network protocols, intrusion detection and countermeasures.

555 DATA COMMUNICATIONS AND COMPUTER NETWORKS 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. ISO-OSI, TCP/IP, data switching, protocols, error control and flow, routing, topology, Network protocol stacks, network taxonomies, and socket-based programming.

565 COMPUTER GRAPHICS 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. Topics include 3D graphics, interactive graphics languages, visualization, ray data analysis, biological networks, and molecular dynamics simulation as well as Monte Carlo simulation.

569 ADVANCED TOPICS IN COMPUTER SCIENCE 1-3 credits
(May be repeated) Prerequisite: permission of instructor. At most, six credits may be applied to degree requirements. Selected topics in computer science at an advanced level. (Department consent required for application to computer science master’s degree requirements)

695 PRACTICUM COMPUTER SCIENCE 1-3 credits
Prerequisite: graduate teaching assistant or permission. Training and experience in college teaching. 3 credits maximum. Prerequisite: permission of an experienced faculty member. May not be used to meet degree requirements. Credit/Non-credit.

697 INDIVIDUAL STUDY IN COMPUTER SCIENCE 1-3 credits
(May be repeated). Can apply to degree (with departmental approval) Prerequisite: permission of instructor. Directed studies designed as introduction to research problems under guidance of designated faculty member.

699 MASTER’S RESEARCH 1-6 credits
(May be repeated) Prerequisite: permission of advisor. Research in computer science topic culminating in a research paper. No more than three credits may be applied to the minimum degree requirements.

503 ADVANCED THEORIES OF PROGRAMMING LANGUAGES 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. In-depth study of various issues in the design and implementation of programming languages, such as formal type systems, operational and other semantics, and verification.

635 ADVANCED ALGORITHMS 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. Advanced graph algorithms, matrix multiplication, fast Fourier transforms, lower bound theory, complexity hierarchy, NP-complete and intractable problems, approximation techniques.

641 OPTIMIZATION FOR PARALLEL COMPILERS 3 credits
Prerequisites: Graduate standing and permission of instructor. Advanced analysis and transformation strategies to support automatic vectorization and parallelization of code, emphasizing restructuring to improve instruction scheduling.

645 COMPUTATIONAL BIOLOGY 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. Topics include sequence analysis, hidden Markov model, RNA structure prediction, microarray data analysis, biological networks, and molecular dynamics simulation as well as Monte Carlo simulation.

653 SOFTWARE SECURITY 3 credits
Prerequisites: Admission to Computer Science master’s program or permission. Issues in software security; common software security errors, steganography, spam, cryptography, malware, internet hacking.

655 PROBABILITY 3 credits
Prerequisites: Admission to Computer Science master’s program or permission. Elementary combinatorial probability theory, probability distributions, mathematical expectation, functions of random variables, sampling distributions, point and interval estimation, tests of hypotheses, regression and correlation, and decision to experimental designs. May not be used to meet graduate major requirements in statistics.

669 ADVANCED TOPICS IN COMPUTER SCIENCE 1-3 credits
(May be repeated) Prerequisite: permission of instructor. At most, six credits may be applied to degree requirements. Selected topics in computer science at an advanced level. (Department consent required for application to computer science master’s degree requirements)

677 PARALLEL PROCESSING 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. Advanced computer architectures, theories of parallel computing, system resources optimization, efficient programming languages and application requirements of cost-effective computer systems. Classical results and practical insights into implementing parallel algorithms on actual parallel machines.

680 SOFTWARE ENGINEERING METHODOLOGIES 3 credits
Prerequisite: Admission to Computer Science master’s program or permission. Introduction to current techniques and methodologies used in software design, development, validation, and maintenance.

699 MASTER’S THESIS 1-6 credits
Prerequisite: permission. (May be repeated for a total of 15 credits.) A properly qualified candidate for a master’s degree may enroll for research experience which culminates in preparation of a faculty-supervised thesis.

505 PROBABILITY 3 credits
Prerequisite: Appropriate background is one semester of calculus or equivalent. Introduction to probability, random variables and probability distributions, expected value, sums of random variables, Markov processes. May not be used to meet graduate major requirements in statistics.

505,1 THEORETICAL STATISTICS I and II 3 credits each
Sequential. Prerequisite: Appropriate background is three semesters of calculus or equivalent. Elementary combinatorial probability theory, probability distributions, mathematical expectation, functions of random variables, sampling distributions, point and interval estimation, tests of hypotheses, regression and correlation, and decision to experimental designs. May not be used to meet graduate major requirements in statistics.

561 APPLIED STATISTICS 4 credits
Prerequisite: Appropriate background is two semesters of calculus or equivalent. Applications of statistics to natural and physical sciences and engineering, including probability distributions, interval estimation, hypothesis testing (parametric and nonparametric), and simple linear regression. May be used to meet graduate major requirements in statistics.

562 APPLIED REGRESSION AND ANOVA 4 credits
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Application of techniques of regression and analysis of variance. May not be used to meet graduate major requirements in statistics.

565 DESIGN OF SAMPLE SURVEYS 3 credits
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Design and analysis of frequently used sample survey techniques.
659 RELIABILITY MODELS
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Students learn in reliability modeling including parametric and nonparametric models, competing modes of failure, censored data and accelerated life models.
3 credits

757 ACTUARIAL SCIENCE I
Prerequisite: Appropriate background is one semester of theoretical statistics or one semester of applied statistics or equivalent. Study of various statistical, financial, and mathematical calculations used to determine insurance premiums related to contingent risks based on individual risk frameworks.
3 credits

757 ACTUARIAL SCIENCE II
Prerequisite: 571. Continuation of Actuarial Science I. Study of multiple life functions, multiple decrement models, valuation theory for pension plans, insurance models including expenses, nonforfeiture benefits and dividends.
3 credits

573 SURVIVAL ANALYSIS
Prerequisite: Applied Statistics or equivalent. Basic concepts in survival analysis, censoring and data truncation, estimation of survival models, nonparametric hazard and survival function estimation, comparing survival times between groups.
3 credits

575 FOUNDATIONS OF STATISTICAL QUALITY CONTROL
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Course provides a solid foundation in the theory and applications of statistical techniques widely used in industry.
3 credits

580STATISTICAL DATA MANAGEMENT
Prerequisites: Appropriate background is one semester of applied statistics or equivalent. Students learn data organization and structures, design of statistical databases, statistical software analysis, importing and exporting of data between software, and missing data analysis.
3 credits

593 TOPICS IN STATISTICS
(May be repeated for a total of six credits) Prerequisite: permission. Selected topics in advanced statistics, including quality control, reliability, sampling techniques, decision theory, advanced inference, stochastic processes and others.
1-3 credits

595 WORKSHOP IN STATISTICS
(May be repeated with change of topic) Group studies of special topics in statistics. May not be used to meet undergraduate or graduate major requirements in mathematics and statistics. May be used for elective credit only.
1-3 credits

595 STATISTICAL CONSULTING
Prerequisite: 580 or permission. Students will be assigned to work with an instructor on current projects in the Center for Statistical Consulting. May be repeated for a total of 4 credits; however, only 2 credits will count toward major requirements. Does not count for elective credit for math science department majors.
3 credits

596 ADVANCED PROBABILITY AND STOCHASTIC PROCESSES
Prerequisite: 560. Random walk, distributions, unlimited sequence of trials, laws of large numbers, convolutions, branching processes, renewal theory, Markov chains, time-dependent stochastic processes.
3 credits

595 PROBABILITY AND STATISTICS
Prerequisite: Appropriate background is three semesters of calculus or equivalent. Probability, random variables, moments and generating functions, random vectors, special distributions, limit theorems, sampling, point estimation, hypothesis testing, confidence estimation.
4 credits

597 ADVANCED MATHEMATICAL STATISTICS
Prerequisite: 560. Convergence of random variables, the Central Limit Theorem; theory of estimation; hypothesis testing; the multivariate normal density; introduction to linear models; Bayesian statistics.
3 credits

569 LINEAR MODELS
Prerequisite: Appropriate background is linear algebra or 651 or equivalent. General linear model in matrix notation, general linear hypothesis, regression models, experimental design models, analysis of variance and covariance, variance components.
3 credits

661 STATISTICS FOR THE LIFE SCIENCES
Prerequisite: college level algebra or equivalent. Data description and presentation, probability applications in the life sciences (including sensitivity, specificity, relative risk), principles and applications of statistical inference, ANOVA, correlation and regression. May not be used to meet graduate major requirements in statistics.
3 credits

655 EXPERIMENTAL DESIGN
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Selected topics in experimental design including random and fixed effects, nested designs, split designs, confounding, fractional factors, Latin squares, and analysis of covariance.
3 credits

655 REGRESSION
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Correlation and linear regression: least squares, matrix notation, line fitting and checking estimation, hypothesis testing, outliers, influence, multicollinearity, transformations, categorical regressors; logistic regression.
3 credits

666 NONPARAMETRIC STATISTICS-METHODS
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Theory and practice using techniques requiring less restrictive assumptions. Nonparametric analyses to 1 and F-tests, ANOVA, regression and correlation. Computer applications.
3 credits

673 FACTOR ANALYSIS
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Theory and techniques for identifying variables through use of principal components and factor analysis. Identification of groups using cluster analysis. Computer applications.
3 credits

676 MULTIVARIATE STATISTICAL METHODS
Prerequisite: Appropriate background is two semesters of applied statistics or equivalent. Multivariate techniques including distance concept, Hotelling T2, multivariate ANOVA, general linear correlation and correlation, linear contrasts, factorial experiments, nested and repeat measure designs, Bayesian analysis, ANOVA, tests, linear discrimination analysis, canonical correlations, applications.
3 credits

676 ADVANCED BIOSTATISTICS
Prerequisite: 570. Statistical issues and methods for biological, medical and health sciences, including: clinical trials, equivalence studies, genomics, comparative effectiveness studies, survival analysis, and bioassy. Computer applications.
3 credits

676 RESPONSE SURFACE METHODOLOGY
Prerequisite: Appropriate background is two semesters of applied statistics or equivalent. First and second order response designs, efficient experimental plans, methods for the analysis, and optimization of response functions.
3 credits

689 ADVANCED TOPICS IN STATISTICS
(May be repeated a total of 6 credits) Prerequisite: 651. Selected topics in statistics including concepts in order, statistics, advanced inference, sequential analysis, stochastic processes, reliability theory, Bayesian statistics and regression.
1-3 credits

692 STATISTICS MASTERS PAPER
(May be repeated) Prerequisite: permission of advisor. Supervised writing of paper for Masters of Science in Statistics Nonthesis Option. No more than two credits apply to major requirements.
1-3 credits

693 PRACTICUM IN STATISTICS AND MATHEMATICS
Prerequisite: graduate teaching assistant or permission. Training and experience in college teaching of statistics. May not be used to meet degree requirements. Credit/No credit.
1-3 credits

697 INDIVIDUAL READING
(May be repeated for a total of four credits) Prerequisites: graduate standing and permission. Study of topics not covered in regular course offerings in statistics under guidance of selected faculty member.
1-2 credits

698 MASTER’S RESEARCH
(May be repeated) Prerequisite: permission of advisor. Research in suitable topics in statistics culminating in a research paper. No more than 2 credits applicable to major requirements.
1-6 credits

699 MASTER’S THESIS
(May be repeated for a total of 4 credits) Prerequisite: Permission. Properly qualified candidates for master’s degree may obtain 2-4 credits for research experiment which culminates in presentation of faculty-supervised thesis.
2 credits

ENGINEERING AND APPLIED MATHEMATICS

790 ADVANCED SEMINAR IN APPLIED MATHEMATICS
Prerequisite: Permission. (May be repeated for a total of 12 credits.) For students seeking graduate degrees in Applied Mathematics. Advanced projects and studies in various areas of applied mathematics.
1-4 credits

898 PRELIMINARY RESEARCH
Prerequisite: (May be repeated.) Completion of qualifying examination and approval of Student Advisory Committee. Preliminary investigation of Ph.D. dissertation topic.
1-15 credits

899 DOCTORAL DISSERTATION
Prerequisite: Permission. (May be repeated.) Completion of Candidacy examination and approval of Student Advisory Committee. Original research by a Ph.D. candidate.
1-15 credits

MODERN LANGUAGES

597 THE GENERAL DESIGNATION OF 3500 IS USED FOR LANGUAGES THAT DO NOT HAVE A SPECIFIC DEPARTMENT NUMBER

598 WORKSHOP
Prerequisite: Graduate status or permission of department. (May be repeated for a maximum of eight credits) Group studies of special topics in modern languages.
1-4 credits

599 INDIVIDUAL READINGS IN MODERN LANGUAGES
Prerequisite: Graduate status or permission of instructor and department chair. MAY NOT BE REPEATED WITH DEPARTMENTAL PERMISSION Individual study under the guidance of professor who directs and coordinates student’s work and reading research.
1-4 credits

ARABIC

522 SPECIAL TOPICS IN ARABIC
Prerequisite: Graduate status, permission of instructor and department chair. Development of specialized language skills or reading of significant works of literature or culture not studied in other courses. Conducted in Arabic. May be repeated once with different topic for a total of eight credits.
1-4 credits

597 INDIVIDUAL READING IN ARABIC
Prerequisite: Graduate status, permission of instructor and department chair. Individual study under the guidance of a professor. May be repeated with departmental permission for a total of four credits.
1-4 credits

CHINESE

532 SPECIAL TOPICS IN LANGUAGE, SKILLS, OR CULTURE OR LITERATURE
Prerequisite: Graduate status, permission of instructor and department chair. Development of specialized language skills or reading of significant works of literature or culture not studied in other courses. May be repeated with different topic for a total of eight credits.
1-4 credits

597 INDIVIDUAL READING IN CHINESE
Prerequisite: Graduate status, permission of instructor and department chair. Individual study under the guidance of a professor who directs and coordinates student’s work and reading research. May be repeated with departmental permission for a total of eight credits.
1-4 credits

LATIN

578, 78 INDIVIDUAL READING AND RESEARCH
Prerequisite: Graduate status, permission of department. General Latin epigraphy, prose composition or philology; muniments or certain other archaeological topics may be offered. May be repeated for credit with change of subject.
3 credits

FRENCH

524 ADVANCED FRENCH GRAMMAR
Prerequisite: Graduate status or permission of department. Advanced study of normative French grammar with emphasis on syntax, morphology, grammatical structure and phonetic principles.
3 credits

513 FRENCH CINEMA
Prerequisite: Graduate status or permission of department. Study and discussion of various aspects of French culture and civilization as characterized in movies.
3 credits

522 SPECIAL TOPICS IN ADVANCED LANGUAGE SKILLS OR CULTURE OR LITERATURE
Prerequisite: Graduate status or permission of department. May not be repeated. Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.
1-4 credits

527 20TH CENTURY FRENCH LITERATURE
Prerequisite: Graduate status or permission of department. Reading and discussion of the most representative works of period. Conducted in French.
4 credits

530 CONTEMPORARY QUEBEC
Prerequisites: Appropriate background is one semester of French. Historical, political, sociological, and cultural overview of Quebec, offering an in-depth examination of questions of identity through the study of literature and popular culture.
3 credits

531 FRANCOPHONE LITERATURE
Prerequisite: Graduate status or permission of department. Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.
3 credits

560 SELECTED THEMES IN FRENCH LITERATURE
Prerequisite: Graduate status or permission of department. Reading and discussion of literary works selected according to an important theme.
3 credits

597 INDIVIDUAL READING IN FRENCH
Prerequisites: Graduate status or permission of department. Individual reading in French, offered at the graduate level. (May be repeated for a total of eight credits.)
1-4 credits
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 credits</td>
<td>The Spanish Civil War and Its Cultural Impact</td>
<td></td>
<td></td>
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<tr>
<td>4 credits</td>
<td>Individual Reading in Spanish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 credits</td>
<td>Individual Reading in German</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Individual reading in German, offered at the graduate level. (May be repeated for a total of eight credits.)</td>
</tr>
<tr>
<td>4 credits</td>
<td>Individual Reading in Italian</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Individual study under guidance of professor who directs and coordinates student’s reading and research.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Individually Directed Research in Spanish</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Descriptive study of Spanish phonetics and morphology, comparison of Spanish and English sounds, historical aspects, regional accents and sociolinguistic variation. Conducted in Spanish.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Introduction to Spanish Linguistics</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. This course provides a detailed overview of the structure of Spanish and areas of inquiry within linguistics: phonetics, phonology, morphology, syntax, semantics, and applied fields.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Spanish Linguistics: Phonology</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Advanced study of Spanish syntax and grammatical analysis. Does not count toward the M.A. in Spanish. Conducted in Spanish.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Spanish Linguistics: Syntax</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Descriptive study of Spanish syntax; introduction to theories of grammar, overview of Spanish semantics and pragmatics. Conducted in Spanish.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Survey of Hispanic Literature: Spain</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Historical overview of representative works and literary movements in Spain. Does not count toward M.A. in Spanish. Conducted in Spanish.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Survey of Hispanic Literature: Spanish America</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Historical overview of representative works and literary movements in Spanish America. Does not count toward M.A. in Spanish. Conducted in Spanish.</td>
</tr>
<tr>
<td>3 credits</td>
<td>Cultural Manifestation in Medieval and Renaissance Spain</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Comparative study of representative artistic and literary works of the Medieval and Renaissance periods. Conducted in Spanish.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Spanish Applied Linguistics</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Course discusses current theories of second language acquisition and their implications for the learning of problematic Spanish structures.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Spain during the Baroque Period</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Comparative study of the different periods of modern Spain during the 17th century. Conducted in Spanish.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Cervantes: Don Quijote</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Reading and analysis of Don Quijote by Miguel de Cervantes, the modern novel in the historical context of Renaissance and Baroque esthetics. Conducted in Spanish.</td>
</tr>
<tr>
<td>4 credits</td>
<td>The Don Juan Myth in Spanish Culture</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Study of the evolution of the Don Juan myth from its origins to its latest versions in the 20th century.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Cultural Politics in the River Plate</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. This course will examine the major political, cultural, and artistic movements in Spain from Realism to Modernism. Conducted in Spanish.</td>
</tr>
<tr>
<td>4 credits</td>
<td>20th Century Spain: The Avant-Garde in Literature and Art</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. A comparative study of the major literary and artistic movements in Spain which illustrate the primary cultural changes of the 20th century. Conducted in Spanish.</td>
</tr>
<tr>
<td>4 credits</td>
<td>The Spanish Civil War and Its Cultural Impact</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Study of the impact of the Civil War on Spanish culture.</td>
</tr>
<tr>
<td>3 credits</td>
<td>Special Topics in Specialized Language Skills or Culture or Literature</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. (May be repeated as topics vary.) Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.</td>
</tr>
<tr>
<td>3 credits</td>
<td>20th Century Spanish-American Novel</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Reading and discussion of representative contemporary Latin American novels. Conducted in Spanish.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Latino Cultures in the USA</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Inquiry into the Latino experience of displacement and marginality through the analysis of cultural manifestations in the USA. Conducted in Spanish.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Women in 20th Century Hispanic Literature</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Reading and analysis of selected works from the 20th Century that depict women in Hispanic countries. Methodologies of feminist criticism will be studied. Conducted in Spanish.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Hispanic Culture: Spain</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Study of society, customs, history, art, music, etc. of Spain, from a Hispanic perspective. Does not count toward the MA in Spanish. Conducted in Spanish.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Hispanic Culture: Spanish America</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Overview and historical survey of Spanish American civilization and culture. Does not count toward the M.A. in Spanish. Conducted in Spanish.</td>
</tr>
<tr>
<td>2 credits</td>
<td>Spanish Teaching Practicum</td>
<td></td>
<td>Prerequisites: Graduate status or permission of department. Orientation and practice of particular aspects of teaching Spanish language and culture. Student teaching experiences are periodically reviewed and evaluated. These credits may not be applied toward degree requirements.</td>
</tr>
<tr>
<td>4 credits</td>
<td>Individual Readings in Spanish</td>
<td></td>
<td>Content of given individual reading program taken from course contests approved for graduate work in Spanish.</td>
</tr>
</tbody>
</table>
Graduate Courses

541 QUANTUM PHYSICS I 3 credits
Prerequisites: Admission to the physics master's program or permission. Introduction to quantum mechanics. Schrödinger equation, observables, angular momentum, orthogonality, variational principle, bound states, scattering theory, radiative interactions, spin and the Pauli Principle.

542 QUANTUM PHYSICS II 3 credits
Prerequisite: Admission to the physics master's program or permission. Applications of quantum mechanics to atomic, nuclear and solid state physics. Tunnelling and alpha decay, periodic potential, Hydrogen and Helium atoms, interatomic forces, quantum statistics.

545 ADVANCED LABORATORY I 3 credits
Prerequisite: Admission to the physics master's program or permission. Experimental techniques applicable to research-type projects in contemporary physics. FL-TR spectroscopy, optical spectroscopy, lasers, XPOS, and thin-film growth and characterization.

546 ADVANCED LABORATORY II 3 credits
Prerequisite: Admission to the physics master's program or permission. Experimental projects applicable to contemporary physics. Diode and dye lasers, laser feedback, chaos, NMR, electron microscopy, and fiber optics.

556 TECHNIQUES OF PHYSICS INSTRUCTION 1 credit
Prerequisite: Admission to the physics master's program or permission. Teaching assistantships in teaching in physics, shown applications for their labroom, and trained in skills needed as a laboratory teaching assistant.

570 INTRODUCTION TO SOLID-STATE PHYSICS 3 credits
Prerequisites: Admission to the physics master's program or permission. Account of basic physical processes occurring in solids, with emphasis on fundamental relation between these processes and properties of crystalline lattice.

581 METHODS OF MATHEMATICAL PHYSICS I AND II 3 credits each
Prerequisites: Admission to the physics master's program or permission. Vectors, generalized coordinates, tensors, calculus of variations, vector spaces, linear transformations, matrices, eigenvalues, Hilbert space, boundary value problems, transcendental functions, complex variables, analytic functions, Green's functions, integral equations.

586 SELECTED TOPICS: PHYSICS I, II 1-4 credits
(May be repeated) Prerequisite: Admission to the physics master's program or permission. Consideration of selected topics, procedures, techniques, materials or apparatus of current interest in physics.

590 WORKSHOP 1-4 credits
(May be repeated.) Prerequisite: Admission to the physics master's program or permission. Further investigations of various selected topics in physics, under guidance of faculty member.

597 INDEPENDENT STUDY 1-15 credits
(May be repeated.) Prerequisite: Admission to the physics master's program or permission. Further investigations of various selected topics in physics, under guidance of faculty member.

598 PHYSICS COLOQUIUM 1 credit
Prerequisite: Admission to the physics master's program or permission. Lectures on current research topics in physics by invited speakers. May be repeated, but only one credit counts toward M.S. degree. Credit/No Credit.

605 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS I, II 3 credits
Prerequisite: Admission to the physics master's program or permission. Review of FORTRAN and other programming languages in computer science. Numerical solutions to physics problems including Newton's and Schrödinger's equations. Treatment and reduction of experimental data, plotting, simulation.

606 COMPUTER PHYSICS: NUMERICAL SOLUTIONS TO PHYSICS PROBLEMS II 3 credits
Prerequisite: Admission to the physics master's program or permission. Data reduction, Calculus plotting, comparison of theoretical models with data, linear and non-linear least squares curve-fitting. May accommodate scientific problems of individual interest.

610 SURFACE PHYSICS 3 credits
Prerequisite: Admission to the physics master's program or permission. An interdisciplinary course stressing the fundamentals and applications of physics at surfaces, including corrosion, catalysis, adhesion, and tribology.

615 ELECTROMAGNETIC THEORY I 3 credits
Prerequisite: Admission to the physics master's program or permission. Electromagnetic theory I: fields and potentials, Maxwell's equations, magnetostatics at advanced level for graduate students, boundary value problems, dielectrics, multipole expansions, time-varying fields, Maxwell's equations and electromagnetic waves, reflection, refraction, wave guides and cavities.

616 ELECTROMAGNETIC THEORY II 3 credits
Prerequisite: Admission to the physics master's program or permission. Scattering and diffraction of electromagnetic fields, angular and polar scattering, reflection, refraction, interference, dielectric and magnetic properties, propagation in a partially absorbing medium.

625 QUANTUM MECHANICS 3 credits
Prerequisites: Admission to the physics master's program or permission. Basic concepts of quantum mechanics, representation theory, particle in a central field, addition of angular momenta and spins, Clebsch-Gordan coefficients, perturbation theory, scattering, transition probabilities.

626 QUANTUM MECHANICS I 3 credits
Prerequisite: Admission to the physics master's program or permission. Foundation of relativistic quantum mechanics, Klein-Gordon and Dirac equations, spin-zero and spin-1/2 particles in the electromagnetic field, second quantization of bosons and fermions, superfluidity and superconductivity.

641 LAGRANGIAN MECHANICS 3 credits
Prerequisite: Admission to the physics master's program or permission. Principle of least action and Lagrangian equations of motion, conservation laws, integration of motion, collisions, small oscillations, Hamilton's equations, canonical transformations.

651 STATISTICAL MECHANICS 3 credits
Prerequisite: Admission to the physics master's program or permission. Fundamentals of statistical mechanics. Gibbs, Fermi and Bose Statistics, solids, liquids, gases, phase transitions, chemical reactions.

669 CRITICAL PHENOMENA AND PHASE TRANSITIONS 3 credits

685 SOLID-STATE PHYSICS I 3 credits
Prerequisite: Admission to the physics master's program or permission. Theory of solids and crystalline solids. Properties of reciprocal lattice and Bloch's theorem. Lattice dynamics and specific heat. Fermi surface; electronic structure; band structure; tight-binding method; Green's function method.

686 SOLID-STATE PHYSICS II 3 credits
Prerequisite: Admission to the physics master's program or permission. Orthogonalized plane and pseudo potentials. Electron-electron interaction, screening by impurities. Frenkel sum rule and plasma oscillations. Dynamics of electrons, transport properties and Fermi surface.

689 SPECIAL PROBLEMS IN THEORETICAL PHYSICS 1-3 credits
May be repeated.) Prerequisite: Admission to the physics master's program or permission. Intensive study of topics in areas of interest in theoretical physics, by consultation with faculty member and independent study beyond available course work.

691 SEMINAR IN THEORETICAL PHYSICS 1-3 credits
(May be repeated.) Prerequisite: Admission to the physics master's program or permission.

697 GRADUATE RESEARCH 1-5 credits
Prerequisite: Admission to the physics master's program or permission. Candidates for M.S. degree may obtain up to five credits for faculty supervised research projects. Grades and credit-able topics at completion of such projects.

698 SPECIAL TOPICS: PHYSICS 1-4 credits
Prerequisite: Admission to the physics master's program or permission. Enables student who needs information in special areas, in which no formal course is offered, to acquire knowledge in these areas.

699 MASTER'S THESIS 1 credit
Prerequisite: Admission to the physics master's program or permission. With approval of department, one credit may be earned by candidate for M.S. degree upon satisfactory completion of a master's thesis.

707 DOCTORAL RESEARCH 1-5 credits
(May be repeated.) Prerequisite: approval of the Student Advisory Committee for Ph.D. research in physics, physical chemistry, polymer science, applied mathematics or electrical engineering. Original research by a Ph.D. candidate in various disciplines under the guidance of physics faculty.

500 POLITICAL EXTREMISM AND VIOLENCE 3 credits
This course examines the causes and consequences of political extremism and political violence in democracies and failed democracies.

502 POLITICS AND THE MEDIA 3 credits
Examination of relationships between the press, the news media and political decision makers.

503 MEDIA, CRIME, AND PUBLIC OPINION 3 credits
Examines the social construction of crime in mass media and how it impacts public opinion, including fear of crime, beliefs about crime causation, and crime policy.

510 INTERNATIONAL SECURITY POLICY 3 credits
Introduction to political uses of military forces. Major focus on methodological, conceptual, and ethical dilemmas confronting national and international defense and implementing defense policy.

513 GLOBAL PUBLIC HEALTH TERRORISM 3 credits
An introduction to comparative global biological and public health security policy. Topics include: infectious disease outbreaks, bioterrorism, and potential "nano-terrorism.

514 WEALTH AND POWER AMONG NATIONS 3 credits
Studies relationship between politics and economy; mesh theoretical perspectives with exploitation of the key empirical issues. Topics include: trade, relations, unions, finance, development, aid, sanctions.

522 UNDERSTANDING RACIAL AND GENDER CONFLICT 3 credits
This is the core course for the Certificates in Racial and Gender Conflict, providing students with an opportunity to intensively examine racial and gender conflict.

527 GOVERNMENT VERSUS ORGANIZED CRIME 3 credits
The course gives a history of organized crime and the government's responses to it. Newly emerging international crime groups are also discussed.

540 SURVEY RESEARCH METHODS 3 credits
Study of the survey research methods as applied to the analysis of public opinion, political behavior, and public policy formation.

541 THE POLICY PROCESS 3 credits
Intensive study of policy-making process, emphasizing roles of various participants in executive, legislative and judicial branches as well as private individuals and groups.

542 METHODS OF POLICY ANALYSIS 3 credits
Examines variety of methods available for analyzing public policies. Techniques of cost benefit analysis, evaluation research quasi-experimental and observational are considered as well as qualitative policy analysis and causal modeling for policy analysis.

543 POLITICAL SCANDALS AND CORRUPTION 3 credits
This course will provide information on major political scandals, including media coverage, public opinion, the role of special prosecutors, and the impacts of scandals.

545 AL QAEDA 3 credits
This course explores the causes and consequences of Al Qaeda's terrorism. Students will weigh different explanations for why individuals join and participate in terrorist groups.

546 INTELLIGENCE AND COUNTERTERRORISM 3 credits
The aim of this class is to familiarize students with intelligence and counterterrorism. It examines the politics of intelligence in the United States and other countries.

550 ADMINISTERING PRISONS, PROBATION, AND PAROLE 3 credits
This course examines the political dynamics of correctional institutions' governance and internal power relations, electoral politics and correctional policies, and political imprisonment.

551 THE SUPREME COURT AND CONSTITUTIONAL LAW 3 credits
Interpretation of the Constitution by the Supreme Court with emphasis on federal judicial, legislative and executive power; separation of powers; and federalism.

552 THE SUPREME COURT AND CIVIL LIBERTIES 3 credits
Interpretation of the Constitution by the Supreme Court with emphasis on freedom of speech and press, freedom of religion, criminal rights and rights to privacy.

563 HUMAN RIGHTS IN WORLD POLITICS 3 credits

564 HUMAN RIGHTS IN WORLD POLITICS 3 credits
Introduction to political uses of military forces. Major focus on the underpinnings of modern national and international defense and implementing defense policy.

570 CAMPAIGN FINANCE 3 credits
Reading and research in campaign finance.

573 VOTER CONTACT AND ELECTIONS 3 credits
Theoretical and practical approaches to gaining votes in all types of political campaigns.

574 POLITICAL OPINION, BEHAVIOR AND ELECTORAL POLITICS 3 credits
Advanced analysis of psychological, cultural and group processes and opinion formation and change. Attention given to the effect of opinion change on electoral outcomes.
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<tbody>
<tr>
<td>520</td>
<td>ABNORMAL PSYCHOLOGY</td>
<td>4</td>
<td></td>
<td>Reading and research on the development, structure and function of interest groups in the United States.</td>
</tr>
<tr>
<td>510</td>
<td>PSYCHOLOGICAL TESTS AND MEASUREMENTS</td>
<td>3</td>
<td></td>
<td>Procedure: six credits of political science or permission. Reading and research on the development, structure and function of parties in the United States.</td>
</tr>
<tr>
<td>580</td>
<td>THE CHALLENGES OF POLICE WORK</td>
<td>3</td>
<td></td>
<td>Procedure: six credits of political science or permission. Reading and research on the development, structure and function of parties in the United States.</td>
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<td>580</td>
<td>PSYCHOPATHOLOGY</td>
<td>3</td>
<td></td>
<td>Procedure: six credits of political science or permission. Reading and research on the development, structure and function of parties in the United States.</td>
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<tr>
<td>360</td>
<td>WORKSHOP IN PSYCHOLOGY</td>
<td>3-5</td>
<td></td>
<td>(May be repeated for a total of nine credits). Timely workshops on varying subjects to meet the changing needs of our students in response to new and emerging political issues and controversies.</td>
</tr>
<tr>
<td>600</td>
<td>SCOPE AND THEORIES OF POLITICAL SCIENCE</td>
<td>3</td>
<td></td>
<td>Procedure: Admission to a Political Science graduate program or permission. Emphasis on the nature, scope and content of political theory; theory construction and validation in political science.</td>
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<tr>
<td>600</td>
<td>RESEARCH METHODS IN POLITICAL SCIENCE</td>
<td>3</td>
<td></td>
<td>Procedure: 600 or permission. Techniques of quantitative research methodology in political science; utility and limitations of quantitative analysis.</td>
</tr>
<tr>
<td>500</td>
<td>PERSONALITY</td>
<td>2-6</td>
<td></td>
<td>Procedure: Admission to a Political Science graduate program or permission. Course will assist in the development of Essay/Capstone projects: organization, format presentation, editing, and review.</td>
</tr>
<tr>
<td>697</td>
<td>INDEPENDENT RESEARCH AND READINGS</td>
<td>3</td>
<td></td>
<td>Procedure: Introduction of policy-making regarding problems of criminal justice, crime scene investigation, search and seizure, self-incrimination, right to counsel, jury selection, and post-assault prisoner rights.</td>
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<td>695</td>
<td>INTERNSHIP IN GOVERNMENT AND POLITICS</td>
<td>3</td>
<td></td>
<td>Procedure: Admission to the Graduate School. The application of psychological theory to macro-level processes in organizations including leadership, motivation, task performance, organizational theories and development.</td>
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<td>690</td>
<td>SPECIAL TOPICS IN POLITICAL SCIENCE</td>
<td>3</td>
<td></td>
<td>Procedure: Admission to the Graduate School. The application of psychological theory to macro-level processes in organizations including leadership, motivation, task performance, organizational theories and development.</td>
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<td>672</td>
<td>SEMINAR: POLITICAL INFLUENCE AND ORGANIZATIONS</td>
<td>3</td>
<td></td>
<td>Procedure: Admission to the Graduate School. Survey of syndromes, etiologies and treatments of major psychological conditions ranging from transient maladjustments to psychoses.</td>
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<tr>
<td>668</td>
<td>SEMINAR IN COMPARATIVE POLITICS</td>
<td>3</td>
<td></td>
<td>Procedure: Admission to a Political Science graduate program or permission. Analysis of current problems in theory and practice of politics and organization.</td>
</tr>
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<td>699</td>
<td>MASTER'S THESIS</td>
<td>3</td>
<td></td>
<td>Procedure: Admission to a Political Science graduate program or permission. Research selected topics in comparative politics. Comparative method.</td>
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<td>699</td>
<td>COUNSELING PRACTICUM</td>
<td>3</td>
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<td>Procedure: Admission to a Political Science graduate program or permission. Research selected topics in comparative politics. Comparative method.</td>
</tr>
<tr>
<td>699</td>
<td>EXTERNAL SPECIAL TOPICS</td>
<td>1-4</td>
<td></td>
<td>(May be repeated for a total of 8 credits) Credit/noncredit.</td>
</tr>
<tr>
<td>660</td>
<td>PSYCHOLOGICAL DISORDERS OF CHILDREN</td>
<td>4</td>
<td></td>
<td>Procedure: Admission to the Graduate School. Survey of syndromes, etiologies and treatments of major psychological conditions ranging from transient maladjustments to psychoses.</td>
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**PSYCHOLOGY**

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<td>500</td>
<td>PERSONALITY</td>
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<td>Procedure: Admission to the Graduate School. Consideration of current conceptualizations of personality with emphasis on methods of measurement, experimental findings and research techniques.</td>
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**PSYCHOLOGICAL TESTS AND MEASUREMENTS**

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<td>510</td>
<td>PSYCHOLOGICAL TESTS AND MEASUREMENTS</td>
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<td>Procedure: Admission to the Graduate School. Consideration of the nature, construction, and use of tests and measurements in industry, government and education. Includes attitude and achievement tests, rating scales, attitude and opinion analysis.</td>
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**ABNORMAL PSYCHOLOGY**

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**HUMAN RESOURCE MANAGEMENT**

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**PSYCHOLOGY OF SMALL GROUP BEHAVIOR**

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**COGNITIVE DEVELOPMENT**

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**HISTORY OF PSYCHOLOGY**

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</table>
INTRODUCTION TO COUNSELING PSYCHOLOGY
Prerequisite: standing in the Collaborative Program in Counseling Psychology. Intro- duction to historical foundations of and recent developments in counseling psychology, with an emphasis on contemporary research literature in the field.

THEORIES OF COUNSELING AND PSYCHOTHERAPY
Prerequisite: 630 or permission of the instructor. Major systems of individual psychotherapy explored within a philosophy of science framework. Freudian, behavioral, Rogerian, cognitive, and other. Includes research, contemporary problems and ethics.

VOCATIONAL BEHAVIOR
Prerequisite: 630 or permission of instructor. Theories and research on vocational behavior and counseling. Topics include major theories of vocational behavior, empirical research on these theories in vocational counseling and applied research.

PRINCIPLES AND PRACTICE OF INDIVIDUAL INTELLIGENCE TESTING
Prerequisites: 630 or graduate standing in school psychology, and instructor’s permission. History, principles and methodology of intelligence testing, supervised practice in administration, scoring and interpretation of individual intelligence tests for children and adults.

PROFESSIONAL, ETHICAL AND LEGAL ISSUES IN COUNSELING PSYCHOLOGY
Prerequisite: Doctoral standing or permission of the instructor. Examination of major issues in the field such as the counselor as a professional and as a person, and issues, problems and trends in counseling psychology.

OBJECTIVE PERSONALITY EVALUATION
Prerequisites: completion of 630 or 400/505, and 420/520, and 5600/5645. Study of the development, administration, and interpretation of objective instruments for personality assessment (MMPI, CPI, MBTI, RAPI and selected additional inventories).

RESEARCH DESIGN IN COUNSELING I
Prerequisite: doctoral standing or permission of the instructor. Study of research designs, evaluation procedures, and review of current research.

ISSUES OF DIVERSITY IN COUNSELING PSYCHOLOGY
Prerequisite: 630, one semester of practicum work. Critical examination and application of research on diversity and theory in counseling diverse populations, focusing on race/ethnicity, gender, sexual orientation, age, disability, and spirituality.

HISTORY AND SYSTEMS IN PSYCHOLOGY
Prerequisite: 630. Philosophical and scientific antecedents of psychology and details of the development of systematic viewpoints in the 19th and 20th centuries.

PSYCHOLOGY OF ADULTHOOD AND AGING
Prerequisite: graduate standing in psychology or the collaborative program in industrial/organizational psychology or permission of the instructor. Aspects of development, aging with emphasis on life-span methodology and research design. Analytical studies of intelligence, personality, social behavior, stress, self-concept and socialization and intervention approaches to aging.

PERCEPTION, ATTENTION, AND AGING
Prerequisite: graduate standing in adult development and aging program or permission of instructor. Overview of theory, methods, and data on attention and perception and how aging affects these phenomena.

COGNITION AND AGING
Prerequisite: graduate standing in psychology or permission of instructor. Survey of selected topics in cognitive aging including memory, problem-solving, decision-making, and expertise.

APPLIED COGNITIVE AGING PSYCHOLOGY: COGNITIVE NEUROPSYCHOLOGY
Prerequisite: 640 or instructor’s permission. An advanced course that acquaints graduate students with the most recent literature in cognitive neuropsychology within the context of aging and life-span development.

PSYCHOPHARMACOLOGY AND ADULTHOOD
Prerequisite: 640. Pharmacology addresses a diverse range of drugs that act in the brain. Drug mechanisms are discussed in the context of emotion, cognitive, and behavioral effects.

APPLIED DEVELOPMENTAL PSYCHOLOGY
Prerequisites: 727, graduate standing in psychology, or permission of instructor. Examination of normative states, evaluation of child abuse, early intervention, day care, kibbutzim, social networks, subcultural variations, and hospice/dying.

INDUSTRIAL GERONTOLOGY
Prerequisite: 660, graduate standing in psychology, or permission of instructor. Study of age-related work in work involving adult and older adult workers. Topics include personnel selection, training, motivating and appraising older employees; health and safety: job design, retention, and productivity; and retirement.

ADVANCED PSYCHOMETRIC TESTS AND MEASUREMENTS
Prerequisite: graduate standing in psychology or in the collaborative program in counseling psychology or permission of the instructor. Advanced study of theoretical and methodological aspects of assessment.

ORGANIZATIONAL PSYCHOLOGY
Prerequisite: 640, graduate standing in psychology, or permission of the instructor. Deals with the general systems theory framework to the study of the relationships between organization and human behavior, the internal processes of organizations, and the relationships between organizations and their environment.

PERSONNEL SELECTION AND ADVANCED APPLIED TESTING ISSUES
Prerequisites: 660, graduate standing in psychology, or permission of the instructor. Reviews recent developments in methods and programs in various theoretical orientations, as well as the development of techniques to evaluate these programs.

TRAINING
Prerequisites: 660, graduate standing in psychology, or permission of the instructor. Reviews current computer techniques and programs for personnel selection and promotion. Includes discussion of advanced testing issues.

RESEARCH METHODS IN PSYCHOLOGY
Prerequisite: 640, graduate standing in psychology or permission of instructor. Scientific method and its specific application to psychology. Topics include data collection, validity, reliability, statistical models, and its alternative model-building and power analysis.

COMPUTER APPLICATIONS IN PSYCHOLOGICAL RESEARCH
Prerequisite: graduate standing in psychology or permission of instructor. Practicum in applica- tion of computers to psychological research including data collection, analysis and interpreta- tion. Also covers computer simulation of decision making including use of different models.

ROLE OF ATTITUDES AND VALUES IN INDUSTRIAL/ ORGANIZATIONAL PSYCHOLOGY
Prerequisite: 660, graduate standing in psychology, or permission of the instructor. Consideration of the role of attitudes and values in the prediction of behavior including consumer psychology, explaining attitude changes, measurement of attitudes and the use of survey methodology.

ORGANIZATIONAL MOTIVATION AND LEADERSHIP
Prerequisites: 660, graduate standing in psychology, or permission of instructor. Survey of theories of motivation and leadership. The leadership process and its relationship to motivation, group performance and attributions is also analyzed.

JOB EVALUATION AND EQUAL PAY
Prerequisite: 660. Major job evaluation systems will be reviewed and critiqued. Issues such as minimum qualifications for a job will be reviewed. Advantages and disadvantages of various job evaluation systems will be compared. Issues concerning federal regulation including the Equal Pay Act, comparable worth and other issues will be discussed. Regression approach- es to job evaluation and applicable court cases will be reviewed.

ORGANIZATIONAL CHANGE AND TRANSFORMATION
Prerequisites: 660 or permission of instructor. Survey of theories and introduction to practical methods of organizational change and transformation used to increase organizational effectiveness and improve employee mobility of work life.

INFORMATION PROCESSING AND INDUSTRIAL/ ORGANIZATIONAL PSYCHOLOGY
Prerequisite: 660. Covers human-computer interface, advanced theories in cognitive psychology is applied to traditional concerns of industrial/organizational psychology such as performance appraisal or motivation.

PERSONNEL PSYCHOLOGY AND THE LAW
Prerequisite: 660. Issues in personnel psychology which have legal implications are reviewed. The impact of recent court decisions are evaluated in staffing and compensation.

PERFORMANCE FEEDBACK AND EVALUATION
Prerequisite: 660, graduate standing in psychology, or permission of instructor. Examines current practices in the area of performance appraisal. Topics will include: criterion development, raters training, appraisal effectiveness, feedback processes, and performance measurement.

COGNITIVE ASSESSMENT
Prerequisite: 750 and enrollment in the Collaborative Program in Counseling Psychology or instructor permission. History, principles, and methodology of cognitive assessment, supervision in administration, scoring, and interpretation of individual intelligence and achievement tests for children and adults.

OBJECTIVE PERSONALITY ASSESSMENT
Prerequisite: 750. Study of the development, administration, and interpretation of objective personality assessments. Issues such as MMPI, PAI, and selected additional inventories.

APPLICATIONS OF ASSESSMENT

GRADUATE SEMINAR IN PSYCHOLOGY
1-4 credits
(Many may be repeated.) Prerequisite: graduate standing in psychology and permission of the instructor. Special topics in psychology.

ADVANCED COUNSELING PRACTICUM
1-4 credits
(Many may be repeated.) Prerequisites: 671, 672, 673 and permission of instructor. Course provides graduate students in counseling with actual client contacts and supervised experiences under faculty supervision. Credit/noncredit.

COUNSELING PSYCHOLOGY PRACTICUM
4 credits
(Many may be repeated.) Prerequisite: 759 (eight hours) or 5600/5675 (five hours). Advanced counseling psychology students will have supervised training with clients in a variety of settings and will focus on supervised development of specialized theoretical applications. Credit/noncredit.

INDEPENDENT READING AND/OR RESEARCH
1-3 credits
(Many may be repeated.) Prerequisite: permission of the instructor. Individual readings and/or research on a topic under supervision of faculty member with whom specific arrangements have been made.

DOCTORAL DISSERTATION
1-2 credits
Prerequisite: open to properly qualified students. Required minimum 12 credits; maximum sub- ject to departmental approval. Supervised research on topic deemed suitable by the disserta- tion committee.
547 SOCIOLOGY OF SEX AND GENDER 3 credits
Review of research and theories of sex and gender. Examination of gender as structure, process, and experience in society.

550 SOCIOLOGY OF MENTAL ILLNESS 3 credits
The social history of the mental hospital, theories and epidemiology of mental illness, community-based treatment models, the organization of mental health services, the role of personal social networks and mutual support groups.

555 FAMILY VIOLENCE 3 credits
Family violence with a focus on child abuse, courtship violence, spouse/partner abuse, and elder abuse. Theories, methodologies, and strategies to end family violence are examined.

560 SOCIOLOGICAL THEORY 4 credits
An overview and examination of theoretical issues in sociology, through the study of both classical and contemporary theories.

601 PROSEMINAR IN SOCIOLOGY 1 credit
Prerequisite: teaching/research assistant in sociology or permission of instructor. Introduction to professional issues in sociology and major areas of research in the field. Seminar. Credit/Noncredit.

602 FAMILY AND SOCIETY 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Examination of the interplay of family and society; family as both independent/dependent variable, at micro/macro levels. Development and impact of family policies is discussed.

604 QUANTITATIVE METHODS IN SOCIOLOGY 4 credits
Prerequisites in various standing in Sociology or permission of instructor. Introduction to the use of quantitative methods for analyzing sociological issues. Instruction in the process of empirically verifying a theoretical question, from conceptualization to analysis. (Same as KSU 672211) Lecture.

615 EPIDEMIOLOGIC METHODS IN HEALTH RESEARCH 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Designed to introduce the student to methods of developing and understanding information concerning the distribution of illness and injury in society and evaluations of interventions to reduce the burden.

625 SOCIOLOGY OF SENTIMENTS AND EMOTIONS 3 credits
Prerequisites: Graduate standing in Sociology or permission of instructor. A sociological perspective is employed to analyze the production, distribution and utilization of social sentiments and emotions. (Same as KSU 672237) Seminar.

628 PROFESSIONAL AND ETHICAL ISSUES IN SOCIOLOGY 3 credits
Prerequisite: Graduate standing in Sociology. Introduction to professional and ethical issues including the role of sociology in developing effective applied sociology. Independent learning and research, the research certification process and plagiarism. Lecture.

631 SOCIAL PSYCHOLOGY 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Intensive examination of social psychological theory and research, both classic and contemporary. Provides student with background and working knowledge of social psychological aspects of social behavior. (Same as KSU 72430) Seminar.

634 PERSONALITY AND SOCIAL SYSTEMS 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Examination of contemporary theory and research on linkages between personality and society. Some applications in studies of modernization, social class and occupations and sex roles. (Same as KSU 72433) Seminar.

639 SOCIOLOGY OF GENDER 3 credits
Prerequisite: permission. Examination of theories and research on gender origins, characteristics and changes. Emphasizes recent empirical research on gender role patterns and processes in various industrial societies. (Same as KSU 672366) Seminar.

646 SOCIAL INEQUALITIES 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Seminar dedicating to social class and casts with special reference to American social structure. (Same as KSU 72546) Seminar.

648 COMPLEX ORGANIZATIONS 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Organizations as social systems; their effect on individuals. Problems of professionals in bureaucracies. (Same as KSU 72545) Seminar.

649 SOCIOLOGY OF WORK 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Examination of work as behavioral phenomenon in human societies; contrasts with non-work and leisure; significance of occupations, professional and work types in organization of work. (Same as KSU 72542) Seminar.

651 SEMINAR IN RACE RELATIONS 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Analysis of the structure and dynamics of race and ethnic relations with attention given to both historical and contemporary issues. (Same as KSU 72670) Seminar.

656 SOCIOLOGY OF HEALTH CARE 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. A general study of the field of medical sociology with special emphasis on analysis of health and health care in the temporary urban United States. (Same as KSU 72673) Seminar.

660 SOCIOLOGY OF CRIMINAL BEHAVIOR 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Examination of the relationship between law and punishment. Emphasis on the role of sociological factors in the etiology and control of criminal behavior. (Same as KSU 72672) Seminar.

662 FAMILY ANALYSIS 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Analysis of correctional institutions as social systems: its formal structure and informal dynamics. Analysis of present state of corrections research. Seminar.

677 POLITICAL SOCIOLOGY 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Description, analysis and interpretation of political behavior through application of sociological concepts. (Same as KSU 72544) Seminar.

686 POPULATION 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Analysis of basic population theory and methods. Trends and differentials in fertility, mortality, migration and selected social demographic variables also considered. (Same as KSU 72656) Seminar.

687 SOCIAL CHANGE 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Advanced seminar in theories of social change. (Same as KSU 72320) Seminar.

699 MASTER’S RESEARCH PAPER 1-6 credits
Must be repeated for a minimum of six credits. Prerequisite: Graduate standing in Sociology or permission of instructor. Supervised writing of a paper for Master’s Research Paper Option.

709 READING IN CONTEMPORARY SOCIOLOGICAL LITERATURE 1-3 credits (May be repeated) Prerequisite: Graduate standing in Sociology, seven credits of sociology and permission of advisor, instructor, and chair of the department. Intensive reading and interpretation of written material in student’s chosen field of interest. Regular conferences with instructor.

718 DIRECTED RESEARCH 1-3 credits (May be repeated) Prerequisite: Graduate standing in Sociology or permission of instructor. Empirical research to be conducted by the student under graduate faculty supervision.

699 MASTER’S THESIS 1-6 credits (Must be repeated for a minimum of six credits) Prerequisite: Graduate standing in Sociology or permission of instructor. Supervised thesis writing.

700 COLLEGE TEACHING OF SOCIOLOGY 3 credits
Prerequisite: Teaching assistant in sociology or permission of instructor. Training and experience in college teaching of sociology. Approved for credit toward the Ph.D. degree. Not approved as credit toward the degree. (Same as KSU 672884) Seminar.

707 MULTIVARIATE TECHNIQUES IN SOCIOLOGY 4 credits
Prerequisites: 604 or permission; a sociology graduate student only. Methodological problems using advanced multivariate techniques in analysis of sociological data. Topics include experimental causal analysis such as recursive and nonrecursive path analysis. (Same as KSU 72236) Seminar.

711 SURVEY RESEARCH METHODS 3 credits
Prerequisite: 604 or permission. In-depth study of design and administration of social surveys. (Same as KSU 72220) Seminar.

714 QUALITATIVE METHODOLOGY 4 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Study of qualitative methods including interviewing, observation, use of personal documents, archival data, and special problems of recording and analyzing qualitative data. (Same as KSU 72219) Seminar.

722 ENVIRONMENTAL SOCIOLOGICAL THOUGHT 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Two to four major sociological thinkers plus to 1930 examined in depth. Specific persons considered will be chosen by instructor but will be announced well in advance of beginning of class. (Same as KSU 72195) Seminar.

723 CONTEMPORARY SOCIOLOGICAL THOUGHT 3 credits
Prerequisite: 722, graduate standing in Sociology or permission. Intensive, critical analysis of current scholarship in a broad range of contemporary sociological theories. Virtually all required reading will be from primary sources. (Same as KSU 72505) Seminar.

726 STRATIFICATION AND HEALTH 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Race, social class, and gender differences in physical and mental health status, help-seeking behavior, and health care services. (Same as KSU 72668) Seminar.

727 SOCIOLOGY OF OCCUPATIONS, PROFESSIONS AND HEALTH CARE 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Sociological examination of the organization of work, and emphasis on occupations, professions, and health care delivery. (Same as KSU 72327) Seminar.

728 SOCIOLOGY OF MENTAL HEALTH AND MENTAL DISORDERS 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Sociological examination of the social processes that affect mental health, that frame cultural ideas of normality and illness, and that define clinical pathology. (Same as KSU 72326) Seminar.

747 URBAN SOCIOLOGY 3 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. Analysis of theories of urban process and review of major contributions to empirical analysis of urban life. (Same as KSU 72509) Seminar.

753 SPECIAL TOPICS IN SOCIAL ORGANIZATION 1-3 credits (May be repeated) Prerequisite: Graduate standing in Sociology or permission of instructor. Open course to cover content not readily available for other offerings. Content of course to be determined by instructor. (Same as KSU 72596) Seminar.

798 INDIVIDUAL INVESTIGATION 1-3 credits (May be repeated) Prerequisite: one semester of graduate work, permission of instructor, advisor and chair of department. Readings and/or research supervised by member of graduate faculty. (Same as KSU 72896)

899 DOCTORAL DISSERTATION 1-10 credits
Prerequisite: Graduate standing in Sociology or permission of instructor. (Must be repeated for a minimum of 30 credits) Dissertation. (Same as KSU 82299)
THEORETICAL FOUNDATIONS FOR PUBLIC AFFAIRS 3 credits
Prerequisite: permission of instructor. This course critically considers the theoretical foundations for public affairs and scholarship and research. It contrasts traditional social and natural science inquiry and more recent alternative theories to PA theory.

COMPARATIVE PLANNING STRATEGIES 3 credits
Prerequisite: 715 or permission. Review and analysis of alternative planning theories, institutions, and implementation strategies in a variety of national settings.

ETHICS IN GOVERNMENT 3 credits
This course will explore the differences between individual and collective responsibility, private property, and the role of government in economic and moral development.

THEORIES OF PUBLIC BUDGETING AND FINANCE 3 credits
Prerequisite: 711. Examines the theories and perspectives that have shaped how governments finance their operations and implement their own projects.

GOVERNANCE AND ADMINISTRATION 3 credits
Governance and administration are interrelated activities, yet have been taught as distinct ones. This course explores the characteristics and concepts that underlie governance and administration.

THEORIES OF PUBLIC SECTOR HUMAN RESOURCE MANAGEMENT 3 credits
Prerequisite: permission. Examination of the organizational behavior and administrative theories that support modern public personnel systems.

CULTURAL FOUNDATIONS OF PUBLIC ADMINISTRATION 3 credits
Prerequisite: permission. Theoretical examination of how constitutional and administrative law influence public sector decision-making.

COMPARATIVE ADMINISTRATION 3 credits
Prerequisite: permission. Examination of the various political and administrative frameworks within which public administrators function.

LEADING PUBLIC ORGANIZATIONS 3 credits
Prerequisite: permission. Examination of the various theories of organizational leadership and their application in public organizations.

SURVEY/RESEARCH METHODS IN THE PUBLIC SECTOR 3 credits
Prerequisite: permission. Emphasizes the techniques and methods used by public organizations to enhance civic involvement. Critiques of methodologies based upon information needs and citizens surveys.

ECONOMIC ANALYSIS IN PUBLIC ADMINISTRATION 3 credits
Review of analytical methods for urban socio-economic data gathering, modeling, analysis, and reporting.

SEMINAR IN HEALTH POLICY 3 credits
Comprehensive review of health policy using historical, political, and economic perspectives and contexts. Emphasizes frameworks for conducting health policy analyses.

PH.D. COLLOQUIUM 1-credit
This course introduces new doctoral students to the perspectives and practices of doctoral study. This is a non-credit course.

URBAN POLICY STUDIES 1-4 credits
(Prerequisite: for a maximum of 16 credits) Prerequisite: permission of instructor or chair. Selected topics for specialized instruction delivered at Kent, Youngstown, and/or Cleveland State universities to apply toward a UA degree as either a required or an elective course.

PRO-BINAR 3 credits
Prerequisite: successfully pass all comprehensive examinations. Seminar to discuss research approaches to reading and writing the dissertation. Discussion of alternative methodologies, styles and perspectives. Credit/Noncredit.

DIRECTED RESEARCH 3 credits
(Prerequisite: for a maximum of 6 credits) Prerequisite: permission. Under the close supervision of a faculty member, a student will utilize social science methods in applied research.

URBAN TUTORIAL 3 credits
Prerequisite: permission. Intensive study of a particular approved field within urban studies and public affairs under supervision of tutor. (May be repeated once.)

DOCTORAL DISSERTATION 1-15 credits
Prerequisite: Advanced to Candidacy and 795. Open to properly qualified student accepted as candidate for Doctor of Philosophy degree. Student must register for at least one credit each fall semester until dissertation is accepted. Minimum of 12 credits required. (May be repeated.) Credit/Noncredit.

MUSEOLOGY 3 credits
Lecture course dealing with museum science, including museum history, staff structures, art handling, storage and presentation, and exhibition preparation.

ART AND CRITICAL THEORY 3 credits
Prerequisite: Permission of instructor. This course, designed for both studio and art history majors, surveys the major theoretical currents in contemporary criticism and art history.

HISTORY OF ART SYMPOSIUM 1-3 credits
(Prerequisite: for a maximum of 6 credits) Prerequisite: permission of instructor. Lecture, individual research and evaluation, group discussion related to a specific time period up to an artistic problem.

METHODS OF ART HISTORY 3 credits
Prerequisite: Permission of instructor. This course explores the history of the discipline and the permutations A has undergone since its establishment in the early years of the nineteenth century.

METHODS OF TEACHING ELEMENTARY ART 3 credits
Prerequisite: Admission to Teacher Education Program. Art P-12. A lecture course presenting the necessary skills and knowledge to successfully implement, plan, instruct, and assess a diverse, art-based curriculum for the elementary school. No credit as elective courses for art majors.

METHODS OF TEACHING SECONDARY ART 3 credits
Prerequisite: admission to Teacher Education Program. Art P-12. A lecture course providing the necessary skills and knowledge necessary for the implementation of curriculum, instruction and assessment appropriate for application at the high school level. No credit as elective for art majors.

TEACHING TEACHING COLLOQUIUM 1 credit
Prerequisite: Successful completion of field experience and permission. Corequisite: 5500/384. Lecture course providing the skills and knowledge necessary for art education licensure. Student will gain knowledge in resume building, licensure requirements, and practical pedagogical techniques.

SURVEY OF ASIAN ART 3 credits
This course introduces the student to historical, cultural, political, and religious aspects of civilizations that influenced the art of Asian art.

MULTIPLES AND MULTIPLICITY 3 credits
Prerequisites: Permission of instructor. Advanced printmaking class recommended for studio majors working with multiples, variability, and production requiring students to define and complete their own projects.

SPECIAL TOPICS IN PRINT 3 credits
Prerequisite: Permission of instructor. Investigation in specialized printmaking media like Lithography, Intaglio, Digital Printing, Digital Books among others. May be offered in conjunction with University sponsored residency or travel.

BETWEEN CLASSROOM BASED ART EDUCATION 3 credits
A lecture and seminar course for art educators that combines traditional lecture, demonstration and hands-on workshops to introduce students to contemporary practices in community-based settings.

MIDDLE SCHOOL MATERIALS AND TECHNIQUES 3 credits
A lecture course in which students will gain a hands-on approach to developing instructional art materials and lessons for the middle school.

CERAMICS: METHODS, MATERIALS, AND CONCEPTS 3 credits
Ceramics for teachers. Introduces the potter’s wheel, hand-building, firing kilns, history of ceramics and ceramic forms, safety in the studio, and strategies for teaching ceramics. (Lab)

EARLY CHILDHOOD ART EDUCATION 3 credits
A lecture course on art activities as a vehicle for whole child development and learning across the curriculum in P, K-5 school settings.

ART IN THE INCLUSIVE CLASSROOM 3 credits
Prerequisite: 7100:620. Art education course exploring the use of art with diverse populations through lecture, hands on art making and site visitations.

ELEMENTARY FIELD EXPERIENCE: ART LICENSURE 1 credit
Corequisite: 7100:510. Instructional field experience in the 7-12 art classroom to apply theory into practice.

SECONDARY FIELD EXPERIENCE: ART LICENSURE 1 credit
Corequisite: 7100:511. Instructional field experience in the P, K-6 art classroom to apply theory and research into practice.

PROFESSIONAL PRACTICES FOR ART EDUCATORS 1 credit
Prerequisites: 510 and 511. A lecture course providing support and guidance to develop the pre-professional skills and knowledge necessary for employment in the field of Art Education.

ADVANCED CERAMICS 3 credits
Prerequisite: Permission. Studio course with emphasis on advanced ceramic techniques.

GRADUATE STUDIO: 2-D MEDIA 3 credits
Graduate studio in two dimensional design media. Special topics and focus vary.

GRADUATE STUDIO: 3-D MEDIA 3 credits
Graduate studio in three dimensional design media. Special topics and focus vary.

GRADUATE STUDIO: PHOTOGRAPHIC/DIGITAL MEDIA 3 credits
Graduate studio in photographic/digital media. Special topics and focus vary.

SPECIAL TOPICS IN STUDIO ART 3 credits
(Prerequisite: permission. May be repeated for credit when a different subject or level of investigation is indicated.) Prerequisite: varies by course. Group investigation of topics not offered elsewhere in the curriculum.

ARTWORK IN ART 1-4 credits
(Prerequisite: for a maximum of 12 credits) Prerequisite: Permission of instructor or chair. The student gains experience in the studio and the classroom. (May be repeated for a maximum of 12 credits) Prerequisite: Permission of instructor. Group investigation of a particular phase of art not offered by other courses in curriculum.

ADVANCED SEMINAR IN ART EDUCATION 3 credits
Prerequisite: Acceptance to the MS program in Secondary Education with Visual Art Licensure. This lecture course is an advanced seminar in art education introducing students to historical, contemporary, philosophical issues in art education. Contemporary problems, theories and practices in art education are also addressed.

SPECIAL TOPICS: ART EDUCATION 1-3 credits
(Prerequisite: permission. May be repeated for one credit when a different subject or level of investigation is indicated.) Group investigation of topics of interest to the art education student and not covered elsewhere in the curriculum.

INDEPENDENT STUDIES 1-3 credits
(Prerequisite: for a maximum of 9 credits) Prerequisites for art majors: completion of at least one advanced course in the minor with a grade of A or A- and permission of instructor. Prerequisite for non-art majors: permission of instructor. Permission of instructor for art majors working with multiples, variabillity, and production requiring students to define and completely their own projects. No more than 10 credits will be counted toward major.

AMERICAN FAMILIES IN POVERTY 3 credits
Prerequisite: Permission of instructor. An overview of the issues, trends, and social policies affecting American families living in poverty. Online section available.

ADVANCED FIBER ARTS 3 credits
Prerequisite: Permission of instructor. An advanced course that builds on the skills formed in the prerequisite, with the intention of reaching a caliber suitable for one of the many professions in this field, including business aspects such as market analysis and production development.

MIDDLE CHILDHOOD AND ADOLESCENCE 3 credits
Prerequisites: Permission of instructor. The influences of middle childhood and adolescent behavior on the family and the influence of the family environment on middle childhood and adolescent development.

FAMILY FINANCIAL MANAGEMENT 3 credits
Analysis of the family as a financial unit including financial problems and their resolution, decision-making patterns and financial practices behavior. Cases, exercises, problems and computer analysis.

FCS OCCUPATIONAL EMPLOYMENT EXPERIENCE 4 credits
Provides students with knowledge of current business and industrial practices at level minimal commensurate with employment expectations of graduates of vocational job training programs in Family and Consumer Sciences.

HISTORY OF INTERIOR DESIGN 4 credits
The study of furnishings, interiors, and architecture from antiquity through the eighteenth century, with emphasis on the socio-cultural influences shaping their development.
519 HISTORY OF INTERIOR DESIGN II 4 credits
The study of nineteenth and twentieth-century furnishings and interiors, with emphasis on the social-cultural influences shaping their development.

522 TEXTILES FOR INTERIORS 3 credits
Prerequisite: Permission of instructor. Evaluation of physical, aesthetic, comfort, care, and durability properties of textile products and testing procedures to determine suitability for desired end uses and as it relates to interior fabrics.

525 TEXTILES FOR APPAREL 3 credits
Prerequisite: Permission of instructor. Evaluation of physical, aesthetic, comfort, care and durability properties of textile products and testing procedures to determine suitability for desired end uses.

527 GLOBAL ISSUES IN TEXTILES AND APPAREL 3 credits
Prerequisite: Permission of instructor. Examines the global structure and scope of the textile and apparel industries emphasizing an economic perspective.

531 PROFESSIONAL PRESENTATION SKILLS IN FAMILY & CONSUMER SCIENCES 3 credits
Prerequisite: Permission of instructor. Emphasis on development of abilities and strengths in coordination of equipment, materials, motion, speech, and presentation delivery relating to education and industry in Family and Consumer Sciences.

536 TEXTILE CONSERVATION 3 credits
Prerequisite: Permission of instructor. Principles and practices of textile conservation with emphasis on procedures appropriate for collectors and small historical agencies.

537 HISTORIC COSTUME 3 credits
Study of Western costume and textiles from antiquity to 1830, with emphasis on social-cultural influences.

538 HISTORY OF FASHION 3 credits
Prerequisite: Permission of instructor. Study of Western fashion, textiles, and designers from the nineteenth century to present, with emphasis on social-cultural influences.

540 FAMILY CRISIS 3 credits
Study of family stress and crisis, including internal and external variables and their influence on the degree of disorganization, coping, and recovery. Includes theory, research and application dimensions.

541 FAMILY RELATIONSHIPS IN MIDDLE AND LATER YEARS 3 credits
Study of family patterns and problems during middle and later years of life with emphasis on psychological and biological changes and economic and social adequacy. Research and theories in gerontology.

542 HUMAN SEXUALITY 3 credits
Prerequisite: Permission of instructor. Introduction to problems and values. Emphasis is on the role of human sexuality in intimate relationships, the diverse dimensions of sexual responsibility.

546 CULTURE, ETHNICITY AND THE FAMILY 3 credits
Prerequisite: Permission of instructor. Study of the role of culture and ethnicity in adaptation of the family system to environment. Program applications considered. Online section available.

548 BEFORE AND AFTER SCHOOL CHILD CARE 3 credits
Study of the development, implementation and evaluation of school-age child care programs for before and after school and vacation periods.

549 FLAT_PATTERN DESIGN 3 credits
Prerequisite: Permission of instructor. Theory and experience in clothing design using flat pattern techniques.

560 ORGANIZATION AND SUPERVISION OF CHILD-CARE CENTERS 3 credits
Theory, principles and procedures involved in establishing and operating centers for infants, toddlers, preschool and school-age children.

561 CASE MANAGEMENT FOR CHILDREN AND FAMILIES I 3 credits
Provides an overview of Case Management basics in a multi-systems collaborative context. Includes roles, values, principles, state and service systems, and service coordination.

562 CASE MANAGEMENT FOR CHILDREN AND FAMILIES II 3 credits
Prerequisite: 561. Provides in-depth exploration of Case Management principles and practice. Emphasis on process and functions, assessment, cross-system service planning and coordination, advocacy, and cultural diversity.

563 PROFESSIONAL PRESENTATION IN FAMILY AND CONSUMER SCIENCES 1-3 credits
Prerequisite: permission of instructor. Exploration and evaluation of current developments in selected areas.

569 WORKSHOP IN FAMILY AND CONSUMER SCIENCES 1-3 credits
Investigates an current issue or topic in selected areas of family and consumer sciences. May be on-off campus study tour or an on-campus full-time group meeting.

571 CAREER-TECHNICAL FCS INSTRUCTIONAL STRATEGIES 3 credits
Prerequisite: Junior standing or permission. Organization of Career-Tech-Family and Consumer Sciences programs in public schools grades 4-12. Emphasis on strategies, compliance with state career-technical directives, student organizations, and program planning.

581 PRACTICUM IN PARENT AND FAMILY EDUCATION 2 credits
Prerequisite: 596, 605. Provides on-site opportunities to apply parent and family education skills. Includes a review of strategies, ethical considerations, and supervision by the on-site director.

589 PARENT EDUCATION 3 credits
Prerequisite: Permission of instructor. Practical application that reviews and analyzes various parenting techniques with major emphasis on the evaluation of parent education programs. Online course.

598 STUDENT TEACHING SEMINAR 1 credit

602 FAMILY LIFE-SPAN PERSPECTIVE 3 credits
Study of individual and family development across life span. Emphasis on adjustment patterns and interpersonal competence. Implications for education theory research and social policy.

604 ORIENTATION TO GRADUATE STUDIES IN FAMILY AND CONSUMER SCIENCES 1-3 credits
Introduces students to the concepts and processes necessary for graduate study in the interdisciplinary field of family and consumer sciences.

605 DEVELOPMENTAL PARENT-CHILD INTERACTIONS 3 credits
Prerequisite: Permission of instructor. Study of reciprocal interactions between parent and child from birth to adulthood. Consideration of cross-cultural studies, historical and societal influences, and various family characteristics and structures. Online course.

607 FAMILY DYNAMICS 3 credits
Development of techniques in family and consumer sciences programs utilizing role theory, exchange theory and systems theory as understood through the study of the family across the life cycle.

610 CHILD DEVELOPMENT THEORIES 3 credits
Prerequisite: Permission of instructor. A comparative study of developmental theories of the child within the family context. Application of the theories to child rearing in the family will be emphasized.

612 PROBLEMS IN DESIGN 1-3 credits
(May be repeated, but no more than 6 credits will apply to M.A.) Prerequisite: written proposal approved by faculty advisor. Individual solution of a specific design problem within the student’s area of clothing, textiles and interior specialization.

614 MATERIAL CULTURE STUDIES 3 credits
Methods of studying clothing, textiles, and interiors from a cultural and historical perspective.

619 THEORIES OF FASHION 3 credits
In depth analysis of the theories underlying fashion and current evaluation of research related to the study of fashion.

621 PROFESSIONAL PRESENTATION IN FAMILY AND CONSUMER SCIENCES 3 credits
Develops effective family and consumer sciences professional presentations. Emphasis on visuals, display, demonstrations, public relations materials, user manuals, conference management, portfolio development, and learning style.

623 DEVELOPMENT IN INFANCY AND EARLY CHILDHOOD 3 credits
Analysis of research and theoretical frameworks regarding infant and child development from conception through age four. Emphasis on early childhood education.

627 SOCIAL PSYCHOLOGY OF DRESS AND THE NEAR ENVIRONMENT 3 credits
Study of dress and the near environment as they relate to human behavior at the micro and macro level.

630 HISTORICAL AND CONCEPTUAL BASES OF FAMILY AND CONSUMER SCIENCES 3 credits
History of the field of family and consumer sciences. Emphasis on the leaders and the conceptual basis of the field.

635 RESEARCH METHODS IN FAMILY AND CONSUMER SCIENCES 3 credits
A study of family and consumer sciences research methods emphasizing concept and theory development, policy application and ethical considerations.

638 PRACTICUM IN FAMILY AND CONSUMER SCIENCES 3 credits
Prerequisite: permission of instructor. A minimum of 150 hours of supervised experience required. May be repeated once.

639 MASTER’S PROJECT 5 credits
Prerequisite: permission of advisor. The development, implementation and evaluation of a community-based supervised project which makes a significant contribution to the field and may lead to publication.

640 MASTER’S THESIS 3 credits
Prerequisite: permission of advisor. Supervised research in a specialized area of family and consumer sciences which makes a contribution to the field and may lead to publication.

MUSIC

525 MUSIC TEACHING METHODOLOGIES FOR GRADUATE STUDENTS 2 credits
Basic pedagogical techniques related to the teaching of undergraduate music courses, including preparation of syllabi, methods of evaluation, and instruction on class preparation and presentation.

526 GRADUATE MUSIC THEORY REVIEW 2 credits
Prerequisite: Undergraduate music theory equivalent to four semesters. Review of basic music theory concepts. Coverage includes the chromatic harmonic vocabulary of the 18th, 19th, and 20th centuries.

527 GRADUATE MUSIC HISTORY REVIEW 2 credits
Prerequisite: Undergraduate music history equivalent to four semesters of music history or literature study. Review of basic music history for graduate students. Coverage extends from antiquity to the present. Both reading and listening assignments will be required.

528 TEACHING AND LITERATURE: PERCUSSION INSTRUMENTS 2 credits
To be scheduled. Study of percussion instruments in music education. Emphasis on research, literature, performance, and techniques from elementary through secondary levels.

551 INTRODUCTION TO MUSICOLOGY 2 credits
Prerequisite: 352. Comparative musicology; acoustics; psychology and physiology of music; aesthetics; theory of music history; historical musicology.

553 MUSIC SOFTWARE SURVEY AND USE 2 credits
Prerequisite: 122 or permission of instructor. A survey and evaluation of available software in the various forms of musical instruction. Students will design a course suitable for submission to a program.

555 ADVANCED CONDUCTION: INSTRUMENTAL 3 credits (30 clinical hours)
Prerequisites: 361 and 442 or permission. Baton techniques and problems relating to practice, reading and preparation of scores; organization of ensembles; conducting large instrumental ensembles. Conducting with colorless baton.

556 ADVANCED CONDUCTION: CHORAL 2 credits
Prerequisite: 361 or equivalent. Conductive techniques to the choral ensemble, including leadership, error detection, tonal development, stylistic accuracy and analysis. One hour lab required.

630 REPERTOIRE AND PEDAGOGY: STRING INSTRUMENTS 3 credits
Prerequisite: permission of instructor. Study in depth of the four bowed string instruments, their technique and repertoire. Coverage includes contemporary and historical works.

634 MATERIAL CULTURE STUDIES 3 credits
In depth analysis of the theories underlying fashion and current evaluation of research related to the study of fashion.

635 PROFESSIONAL PRESENTATION IN FAMILY AND CONSUMER SCIENCES 3 credits
Develops effective family and consumer sciences professional presentations. Emphasis on visuals, display, demonstrations, public relations materials, user manuals, conference management, portfolio development, and learning style.

636 DEVELOPMENT IN INFANCY AND EARLY CHILDHOOD 3 credits
Analysis of research and theoretical frameworks regarding infant and child development from conception through age four. Emphasis on early childhood education.

637 SOCIAL PSYCHOLOGY OF DRESS AND THE NEAR ENVIRONMENT 3 credits
Study of dress and the near environment as they relate to human behavior at the micro and macro level.

638 PRACTICUM IN FAMILY AND CONSUMER SCIENCES 3 credits
Prerequisite: permission of instructor. A minimum of 150 hours of supervised experience required. May be repeated once.

639 MASTER’S PROJECT 5 credits
Prerequisite: permission of advisor. The development, implementation and evaluation of a community-based supervised project which makes a significant contribution to the field and may lead to publication.

640 MASTER’S THESIS 3 credits
Prerequisite: permission of advisor. Supervised research in a specialized area of family and consumer sciences which makes a contribution to the field and may lead to publication.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>620</td>
<td>ACRON SYMPHONY CHORUS</td>
<td>1</td>
<td></td>
<td>Open to University and community members by audition. Prospective members should contact School of Music two weeks before semester begins. Performs with Akron Symphony Orchestra.</td>
</tr>
<tr>
<td>603</td>
<td>UNIVERSITY SYMPHONY ORCHESTRA</td>
<td>1</td>
<td></td>
<td>Membership by audition. Orchestra devoted to study of orchestral literature. Full-length concerts as well as special University appearances. Major conducted ensemble.</td>
</tr>
<tr>
<td>604</td>
<td>SYMPHONIC BAND</td>
<td>1</td>
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<td>Membership by audition. The University Symphonic Band is the most select band at the University and performs the most demanding and challenging music available.</td>
</tr>
<tr>
<td>605</td>
<td>VOCAL CHAMBER ENSEMBLE</td>
<td>1</td>
<td></td>
<td>Membership open to those enrolled in applied voice study. Coaching and rehearsal of solo and ensemble literature for voices from operatic, oratorio and leader repertoire.</td>
</tr>
<tr>
<td>606</td>
<td>BRASS ENSEMBLE</td>
<td>1</td>
<td></td>
<td>Membership by audition. Study and performance of literature for brass ensemble from all periods of music history. Frequent public concerts. For advanced brass players.</td>
</tr>
<tr>
<td>607</td>
<td>STRING ENSEMBLE</td>
<td>1</td>
<td></td>
<td>Membership by audition. In-depth study and performance of chamber music literature with special emphasis on string quartet and piano trio.</td>
</tr>
<tr>
<td>608</td>
<td>OPERA/LYRIC THEATER WORKSHOP</td>
<td>1</td>
<td></td>
<td>Membership by audition. Musical and dramatic group study of excerpts from operatic repertoire. Includes annual production of standard opera and/or contemporary chamber work with staging, costumes and scenery.</td>
</tr>
<tr>
<td>609</td>
<td>PERSUSSION ENSEMBLE</td>
<td>1</td>
<td></td>
<td>Membership by audition. Study and performance of literature for various percussion groups; develops skill in ensemble performance.</td>
</tr>
<tr>
<td>610</td>
<td>WOODWIND ENSEMBLE</td>
<td>1</td>
<td></td>
<td>Membership by audition. Study and performance of woodwind literature from all periods for various combinations of woodwinds. Develops performance skills and knowledge of woodwind literature.</td>
</tr>
<tr>
<td>611</td>
<td>JAZZ ENSEMBLE</td>
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</tbody>
</table>
COMMUNICATION 7600:

Graduate Courses 121

630 SUMMER CONCERT BAND 1 credit
The University of Akron Summer Concert Band is open to all wind and percussion musicians and performs the finest in band literature.

APPLIED MUSIC 7520:

521-569 APPLIED MUSIC FOR MUSIC MAJORS 2 or 4 credits each
The following courses are intended for a student majoring in one of the programs in the Department of Music. Courses levels correspond approximately to class standing (100 for freshmen, 200 for sophomore, etc.) A student may progress up one level by successfully completing an applied music jury, usually offered in the spring semester. NOTE: No more than eight credits at the 100, 200 or 300 level may apply in music degree programs; no such limit exists for the 400 level.

521 PERCUSSION
522 CLASSICAL GUITAR
523 HARP
524 VOICE
525 PIANO
526 ORGAN
527 VIOLON
528 VIOLA
529 CELLO
530 STRING BASS
531 TRUMPET OR CORNET
532 FRENCH HORN
533 TROMBONE
534 BARITONE
535 TUBA
536 FLUTE OR PICCOLO
537 OBOE OR ENGLISH HORN
538 CLARINET OR BASS CLARINET
539 BASSOON OR CONTRABASSOON
540 SAXOPHONE
541 HARPSICHORD
542 PRIVATE LESSONS IN MUSIC COMPOSITION 2-4 credits each
(May be repeated) Prerequisites: 7500-252 and permission of instructor; 7500-452 recommended. Private instruction in composition. Primarily for student whose major is theory-composition.

621-661 GRADUATE STUDY IN APPLIED MUSIC 2 or 4 credits each
(May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.

621 PERCUSSION
622 CLASSICAL GUITAR
623 HARP
624 VOICE
625 PIANO
626 ORGAN
627 VIOLON
628 VIOLA
629 CELLO
630 STRING BASS
631 TRUMPET OR CORNET
632 FRENCH HORN
633 TROMBONE
634 BARITONE
635 TUBA
636 FLUTE OR PICCOLO
637 OBOE OR ENGLISH HORN
638 CLARINET OR BASS CLARINET
639 BASSOON OR CONTRABASSOON
640 SAXOPHONE
641 HARPSICHORD
642 APPLIED COMPOSITION
661 JAZZ PERCUSSION
662 JAZZ GUITAR (May be repeated) Prerequisite: undergraduate degree with a major in music. Private instruction in composition offered primarily for a student majoring in composition. Another student may be moved by composition faculty.
663 JAZZ ELECTRIC BASS
664 JAZZ PIANO
665 JAZZ TRUMPET
666 JAZZ TROMBONE
667 JAZZ SAXOPHONE
668 JAZZ COMPOSITION
669 JAZZ VOCAL STYLES

COMMUNICATION 7600:

500 HISTORY OF JOURNALISM IN AMERICA 3 credits
A review and analysis of the historical evolution of journalism in America, focusing primarily on newspapers, magazines, radio, television.

506 CONTEMPORARY PUBLIC RELATIONS 3 credits
Study and practical application of communication concepts, theories and skills relevant to public relations programs in businesses and nonprofit organizations.

508 WOMEN, MINORITIES AND NEWS 3 credits
Study of images of women and minorities in U.S. news, along with the power women and minorities have as decision-makers in the news industry.

516 NEW MEDIA WRITING 3 credits
Prerequisite: Permission. This class will look at how today’s professionals practice online publishing. Students will work on writing and reporting skills need in New Media.

517 NEW MEDIA PRODUCTION 3 credits
Prerequisite: 516 or permission. Covers practical application of software to create on-line multimedia documents and explores design ideas for New Media content.

520 MAGAZINE WRITING 3 credits
An advanced writing class designed to develop the specialized reporting, researching, and writing skills needed in consumer and specialized magazines today.

525 COMMERCIAL ELECTRONIC PUBLISHING 3 credits
This advanced class allows an in depth investigation of the business and production principles of electronic publishing of magazines.

535 COMMUNICATION IN ORGANIZATIONS 3 credits
Overview of theories and approaches for understanding communication flow and practices in organizations; including interdepartmental, networks, superior-subordinate, formal and informal communication.

536 ANALYZING ORGANIZATIONAL COMMUNICATION 3 credits
Prerequisite: 535 or permission. Methodology for in-depth analysis and application of communication in organizations; team building, conflict management, communication flow; individual and group projects; simulations.

537 TRAINING METHODS IN COMMUNICATION 3 credits
Principles and concepts in the design and delivery of communication training programs; integration of theory and methodology; presentation skills; matching methods and learner needs.

538 HEALTH COMMUNICATION 3 credits
This course presents an overview of health communication theory and research issues in interpersonal, small group, organizational, public relations, and mass media contexts.

546 WOMEN, MINORITIES, AND MEDIA 3 credits
Examination of the media’s portrayal of white women and people of color and the roles of media decision-makers as powerful counterparts to these images.

554 THEORY OF GROUP PROCESSES 3 credits
Group communication theory and conference leadership as applied to individual projects and seminar reports.

557 PUBLIC SPEAKING IN AMERICA 3 credits
Survey and critical analysis of major speakers, speeches and speech movements in American history. Examines how style and content of American speaking influenced events and reflected their times.

559 LEADERSHIP AND COMMUNICATION 3 credits
Theories of leadership and communication across public, organizational, small group, interpersonal, and political contexts. Assessment tools provided. Guest speakers.

562 ADVANCED MEDIA WRITING 3 credits
Practical applications of script writing principles and techniques, focusing on the skills and discipline required to finish an entire script.

565 THEORIES OF RHETORIC 3 credits
Study of key figures in history of rhetorical theory, stressing interrelationships among theories of rhetoric, intellectual climates and social climates.

571 POLITICAL COMMUNICATION 3 credits
Students explore the relationship between politicians, citizens, and media. Topics include media coverage, campaign technologies, advertising, debates, engagement, rhetoric, and attitudes. Theories and methodologies analyzed.

581 FILM AS ART: AN INTRODUCTION TO THE FILM FORUM 3 credits
A study of the role and function of Cinematography. Editing, Sound, and Mise-en-scene as they shape the meaning of the film within the context of the traditional/non-traditional narratives and the documentary structure.

590 COMMUNICATION WORKSHOP 1-3 credits
(May be repeated for a total of six credits) Group study or group projects investigating a particular phase of media not covered by other courses in curriculum.

600 INTRODUCTION TO GRADUATE STUDY IN COMMUNICATION 3 credits
Introduction to the ideas and scholarship that constitute the various research interests in the department.

602 QUALITATIVE METHODS IN COMMUNICATION 3 credits
Prerequisite: 600. The course covers paradigms underlying qualitative inquiry, major methods of inquiry, and techniques utilized in the communication discipline. The course also provides a context for the student’s ability to use qualitative research through gathering and analyzing data.

603 QUANTITATIVE METHODS IN COMMUNICATION 3 credits
An introduction to research methodologies and techniques utilized in the communication discipline. The course fosters student’s ability to use quantitative research through gathering and analyzing data.

604 QUALITATIVE METHODS IN COMMUNICATION 3 credits
An introduction to methods of empirical and quantitative research and their application in studies of mass media research topics.

606 COMMUNICATION PROBLEMS IN THE BASIC SPEECH COURSE 1 credit
Designed to train a graduate student in methods and materials of introductory speech course. Required of all teaching graduate assistants.

608 COMMUNICATION PEDAGOGY 3 credits
Familiarizes students with aspects of teaching communication and media courses at the college level.

624 SURVEY OF COMMUNICATION THEORY 3 credits
Study of dimensions of field of communication: information analysis, social interaction and semantic analysis.

625 THEORIES OF MASS COMMUNICATION 3 credits
Prerequisite: 600 or permission of instructor. A review of theories of mass media and studies exploring the effect of media.

645 INTERCULTURAL COMMUNICATION THEORY 3 credits
Analysis of the impact on the communication process of cultural differences among communicators; examination of existing literature in intercultural communication.
### ARTS ADMINISTRATION

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<th>Course Title</th>
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<tr>
<td>600</td>
<td>RESEARCH AND WRITING TECHNIQUES</td>
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<td>AUDIENCE DEVELOPMENT</td>
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<td>PRINCIPLES OF ARTS ADMINISTRATION</td>
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<td>ARTS ADMINISTRATION POLICIES AND PRACTICES</td>
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<td>LEGAL ASPECTS OF ARTS ADMINISTRATORS</td>
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### THEATRE

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<td>567</td>
<td>CONTEMPORARY THEATRE STYLES</td>
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<td>METHODS OF TEACHING ELEMENTARY THEATRE ARTS</td>
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<td>METHODS OF TEACHING SECONDARY ARTS ARTS</td>
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<td>ACTING FOR THE MUSICAL THEATRE</td>
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<td>590</td>
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<td>PROBLEMS IN DIRECTING</td>
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<td>SEMINAR IN DRAMATIC LITERATURE</td>
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<td>695</td>
<td>HISTORY OF THEATRE</td>
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<td>697</td>
<td>STAGE LIGHTING DESIGN AND TECHNOLOGY</td>
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### THEATRE ORGANIZATIONS

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### Engineering

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<td>561</td>
<td>SOLIDS PROCESSING</td>
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<td>POLLUTION CONTROL</td>
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<td>DIGITIZED DATA AND SIMULATION</td>
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<td>ELECTROCHEMICAL ENGINEERING</td>
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<td>SEPARATION PROCESSES IN BIOCHEMICAL ENGINEERING</td>
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<td>TRANSPORT PHENOMENA</td>
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#### CHEMICAL ENGINEERING

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#### PERFORMANCE PRACTICUM

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### CIVIL ENGINEERING

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<td>OPTIMUM STRUCTURAL DESIGN</td>
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<td>528</td>
<td>HAZARDOUS AND SOLID WASTES</td>
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<td>527</td>
<td>WATER QUALITY MODELING AND MANAGEMENT</td>
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<td>518</td>
<td>SOIL AND ROCK EXPLORATION</td>
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<td>CHEMISTRY FOR ENVIRONMENT ENGINEERS</td>
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<td>ENVIRONMENTAL ENGINEERING DESIGN</td>
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<td>ADVANCED RESEARCH TECHNIQUES FOR ENGINEERING</td>
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<td>PRELIMINARY RESEARCH</td>
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<td>DOCTORAL DISSERTATION</td>
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### 736 POLYMER ENGINEERING TOPICS
- prerequisite: permission. Selected topics of current interest in polymer engineering, such as morphology of reactors or processes, multiphase materials, multiphase flow, artificial fiber engineering, etc.

### 737 CHEMICAL PROCESSING OF ADVANCED MATERIALS
- prerequisite: 605. Advanced materials such as ceramics, optical materials, sensors, catalysts; application of reaction engineering to sol-gel processing, ceramic processing, modified chemical vapor deposition.

### 742 ADVANCED CATALYST DESIGN

### 750 POLYMER PROCESSING
- prerequisite: Permission. Advanced analytical and graphical methods for solving complex heat transfer problems including models based on transport phenomena principles, population balance methods and systems analysis.

### 763 POLYMER ENGINEERING
- prerequisite: permission of instructor. Colloid science and applications in chemical and bioengineering: disperse systems, interparticle forces, surface tension, interfacial thermodynamics, colloid applications, biotechnologies and characterization techniques.

### 764 APPLIED SURFACANT SCIENCE
- prerequisite: 610. The basics of surfactant science, the chemical engineering application of surfactants including use in polymerization media, separations, emulsion, microemulsion, and a dyes modifier.

### 765 ADVANCED POLYMER ENGINEERING
- prerequisite: 600 or permission. Reactors for polymerization, polymer characterization, polymer processing, polymer technology.

### 640 ADVANCED PLANT DESIGN
- prerequisite: permission. Topical treatment of process and equipment design, scale-up, optimization, process synthesis, process economics, problems.

### 676 RENEWABLE RESOURCES FOR ENVIRONMENTALLY BENIGN CHEMICAL PRODUCTION
- prerequisite: permission of instructor. Focus is on chemical and biochemical processing technology, including the preparation of fuels, polymeric materials, and specialty chemicals from renewable resources.

### 680 HETEROGENEOUS CATALYSIS
- prerequisite: permission of instructor. Kinetics of mechanistic of heterogeneous and homogeneous catalytic reactions; characterization and design of heterogeneous catalysts.

### 691 TOPICS IN CHEMICAL ENGINEERING
- prerequisite: 600. Advanced theory of transport phenomena such as applied tensor analysis, constitutive equations, multiphase reactive transport and multiphase transport. Illustrative practical examples presented.

### 701 ADVANCED TRANSPORT PHENOMENA
- prerequisite: 600. Advanced theory of transport phenomena such as applied tensor analysis, constitutive equations, multiphase reactive transport and multiphase transport. Illustrative practical examples presented.

### 702 MULTIPHASE TRANSPORT PHENOMENA
- prerequisite: 600. General transport theorem, kinematic, Cauchy's lemma and the jump boundary conditions are developed followed by the discussion of volume averaging. The single-phase equations are then volume averaged to obtain the multiphase equations of change. The technique for using these equations and their practical significance is also covered.

### 706 ADVANCED REACTION ENGINEERING
- prerequisite: 605. Kinetics of heterogeneous systems, steady and unsteady state mathematical modeling of chemical reactors, fluidization and additional topics drawn from current literature.

### 711 ADVANCED CHEMICAL ENGINEERING THERMODYNAMICS
- prerequisite: 600. Advanced topics in thermodynamics, including phase and reaction equilibrium, phase equilibria, three-phase systems, reaction equilibrium, thermodynamics of surfaces, thermodynamics of systems under stress, and invariant thermodynamics and current topics from literature.

### 715 MOMENTUM TRANSPORT
- prerequisite: 600. Discussion of potential flow, boundary layer formation and turbulent flow phenomena for Newtonian fluids.

### 716 NON-NEWTONIAN FLUID MECHANICS

### 720 ENERGY TRANSPORT
- prerequisite: 600. Conduction, natural and forced convection, and radiation heat transfer involving equations of continuity, momentum, and energy.

### 721 TOPICS IN ENERGY TRANSPORT
- prerequisite: 600. Advanced analytical and graphical methods for solving complex heat transfer problems in chemical engineering.

### 725 MASS TRANSFER
- prerequisite: 600. Theory of mass transfer with applications to absorption, adsorption, distillation, and heterogeneous catalysis.

### 731 PROCESS CONTROL
- prerequisite: 630. Introduction to modern control theory of chemical processes including cascade control, multivariable control and data sampled control.
3 credits
Prerequisite: Permission. Properties of aggregates, manufacture and properties of Portland cement, properties of hydraulic and pozzolanic materials, design of concrete mixture, mixing and placement, fundamental principles of concrete shrinkage and cracking, shape and size of structural members, element design, and factors affecting the cost of concrete construction.

574 UNDERGROUND CONSTRUCTION
2 credits
Describes and discusses techniques of underground construction. Selection of proper method for individual job. Design of underground openings, support systems and linings.

604 DYNAMICS OF STRUCTURES
3 credits

605 STRUCTURAL STABILITY
3 credits

606 ENERGY METHODS AND ELASTICITY
3 credits

607 PRESTRESSED CONCRETE
3 credits
Basic concepts. Design of double-tension roof girder, shear, design length; column; piles; design of highway bridge girder; pretension, post-tensioned; continuous girders; cores; volume-change forces; connections.

610 MULTISTORY BUILDING DESIGN
3 credits
Floor systems; staggered truss system; framed brace design frame; unbraced frame design; drill indices; monocoque (tube and partial tube) systems; earthquake design; fire protection. Analysis by STRUDL.

611 FUNDAMENTALS OF SOIL BEHAVIOR
2 credits
In-depth examination of structure and fundamental physical-chemical and mechanical properties of engineering soils viewed as particulate matter.

612 ADVANCED SOIL MECHANICS
3 credits
Study of mechanics of behavior of soil as continuum. Principles of strain, stress, deformation, shear, strength, and pore pressure as applied to mechanical behavior of soil masses.

613 ADVANCED GEOTECHNICAL ENGINEERING
3 credits
Prerequisites: 516, 612. Theory and practice of static and dynamic in situ and laboratory soil testing. Testing procedures, applicability, limitations. General evaluation of geotechnical parameter routine and special site conditions. One lecture, two laboratories per week.

614 FOUNDATION ENGINEERING I
3 credits
Prerequisite: Permission. Foundation bearing capacity and settlement analysis. Design of shallow and deep foundation systems. Pile driving and load test procedures and analysis. Analysis and design of earth-retaining structures including retaining walls, tiebacks and bulkheads.

615 FOUNDATION ENGINEERING II
3 credits
Prerequisite: 614 or permission. Soil-struture interaction theory and applications to underground structures including conduits, tunnels and shafts. Advanced foundation construction methods and problems including dewatering, soil stabilization, underpinning and caisson work. Slope stability analysis.

618 ROCK MECHANICS
3 credits

619 NUMERICAL METHODS IN GEOTECHNICAL ENGINEERING
3 credits
Steady-state and transient flow through soils, consolidation, soil-structure interaction, piling, stress deformation analysis of earth structures.

620 SANITARY ENGINEERING PROBLEMS
2 credits
Application of both laboratory methods and theory to solution of sanitary engineering problems involving water pollution, stream regeneration, special industrial wastes, dewatering and oxidation-reduction reactions.

621 ENVIRONMENTAL ENGINEERING PRINCIPLES
4 credits
Corequisites: 513, 516. Provides the basic principles of chemical reaction engineering, microbiology, environmental regulations, and contaminant migration required for the understanding and solving of environmental problems.

622 AQUATIC CHEMISTRY
3 credits
Prerequisites: Permission. Quantitative treatment of variables that govern the chemistry of aquatic systems. Emphasis on carbonate in open-closed systems, metal complexation and solubility, and oxidation-reduction reactions.

623 PHYSICAL/ CHEMICAL TREATMENT PROCESSES
3 credits
Prerequisite or corequisite: 621. Theory, current research associated with physical/chemical processes, the impact of design-exogregation/flocculation, sedimentation, filtration, absorption processes emphasized.

624 BIOLOGICAL WASTEWATER TREATMENT PROCESSES
3 credits
Prerequisite or corequisite: 621. Theory, current research associated with biological processes, related physical/chemical processes, the impact on design-activated sludge, fixed film processes and designing treatment facilities, sludge dewatering processes emphasized.

625 WATER TREATMENT PLANT DESIGN
3 credits
Prerequisite: 623. Design of water treatment plants for potable, industrial and commercial uses. Development of water sources, treatment methods and financing used to design best practical methods in terms of cost-benefit.

626 WASTEWATER TREATMENT PLANT DESIGN
3 credits
Prerequisite: 624. Application of theory and fundamentals to design of wastewater treatment plants. System design methods used for biological and chemical stabilization of wastewater to meet water-quality criteria. Economic analyses made to determine best practical designs to be utilized.
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<td>DIGITAL COMMUNICATION</td>
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<td>545</td>
<td>WIRELESS COMMUNICATIONS</td>
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<td>561</td>
<td>OPTICAL ELECTRONICS AND PHOTONIC DEVICES</td>
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<td>572</td>
<td>CONTROL SYSTEMS II</td>
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<td>583</td>
<td>POWER ELECTRONICS I</td>
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<td>ELECTRIC MOTOR DRIVES</td>
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<td>DESIGN OF ELECTRIC AND HYBRID VEHICLES</td>
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<td>SPECIAL TOPICS: ELECTRICAL ENGINEERING</td>
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<td>655</td>
<td>Advanced ANTENNA THEORY AND DESIGN</td>
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<td>656</td>
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<td>CONTROL OF ELECTRIC MACHINES</td>
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### COMPUTER ENGINEERING

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<td>510</td>
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<td>513</td>
<td>INTRODUCTION TO AERODYNAMICS</td>
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<td>512</td>
<td>FUNDAMENTALS OF FLIGHT</td>
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<td>HEATING AND AIR CONDITIONING</td>
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<td>ENERGY CONVERSION</td>
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<td>SYSTEM DYNAMICS AND CONTROL</td>
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<td>COMPRESSIBLE FLUID MECHANICS</td>
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<td>513</td>
<td>INTRODUCTION TO AEROSPACE PROPULSION</td>
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### 500 THERMAL SYSTEM COMPONENTS
- Performance analysis and design of basic components of thermal energy exchange and conversion systems. Components studied include heat exchangers, pumps, compressors, turbines and expansion engines. Credit depends upon extent of project.

### 505 HEATING AND AIR CONDITIONING
- Thermodynamics of gases, heat and mass transfer.

### 510 COMPRESSIBLE FLUID MECHANICS
- Thermodynamics of gases, heat and mass transfer.

### 511 FUNDAMENTALS OF FLIGHT
- Introduction to basic aerodynamics, airplane performance, stability and control, and flight mechanics. Design considerations are emphasized.

### 512 INTRODUCTION TO AERODYNAMICS
- Introduction to aerodynamic concepts, conformal transformations, theory of thin airfoils, 2-dimensional airfoil theory. Credit depends upon extent of project.
624 FUNDAMENTAL OF FRACTURE MECHANICS
Prerequisite: 622 or permission of instructor. Methods of stress analysis in elastic media con-
taining flaws and cracks. Theorism of fracture. Dynamic crack propagation. Fatigue frac-
tures. Finite element approaches to fracture mechanics.

625 ANALYSIS OF MECHANICAL COMPONENTS
Theories of failure and plastic flow. Fatigue, creep analysis and introduction to fracture mechanics.

626 FATIGUE OF ENGINEERING MATERIALS
Prerequisite: 624 or permission. Quasi-static and cyclic behavior; dislocation networks and their interactions; comparison of dislocation-microstructure interactions; crack initiation; crack propagation; short cracks; crack closure; environmental effects.

627 ADVANCED MATERIALS AND MANUFACTURING PROCESSES
Materials property measurement; mechanical; thermal; electrical; optical; electronic; optical; properties; phase diagrams; stress-strain behavior; and fracture behavior. Composition, structure, properties; and processing of materials.

628 NONLINEAR ENGINEERING PROBLEMS
Prerequisite: 622. Study of nonlinear ordinary and partial differential equations governing the behavior of mechanical, electrical and thermal systems. Application of phase space trajectories, singularities and stability. Development of approximate analytical methods.

630 VIBRATIONS OF DISCRETE SYSTEMS
Prerequisite: 617 or equivalent. Study of vibrations of multidofe system including free and forced vibrations, damping and transient response, normal modes vibrations and matrix iteration techniques. Application to seismic design and shock design.

631 KINEMATIC DESIGN

632 RELIABILITY IN DESIGN
Prerequisite: 3470.051. The reliability determination of mechanical components and systems and their use in design. Distribution, reliability determination, normal and log-normal distributions, Weibull life time analysis, renewal theory and confidence limits.

633 COMPUTERIZED MODAL ANALYSIS OF STRUCTURES
Prerequisites: 530 or equivalent. Modal analysis theory and measurement techniques, computer-aided design.

634 ADVANCED DYNAMICS OF ROTATING MACHINERY
Prerequisites: 530 or equivalent. Dynamic modeling of computer simulation of complex rotordynamic systems. Steady state, transient and stability analysis with inertia, gyroscopic, imbalance, disk skew and impeller interaction effects.

635 STRESS WAVES IN SOLIDS AND FLUIDS

642 SYSTEM ANALYSIS AND CONTROL DESIGN
Unified methods of modal analysis, controllability and observability, stability theory and analysis of linear and nonlinear engineering processes. Design of feedback controllers for optimum performance for multivariable real-time control application.

643 PROCESS IDENTIFICATION AND COMPUTER CONTROL
Prerequisite: Permission by instructor. Obtaining mathematical models of processes from noisy observations. Methods of digital control design. Case studies on computer control of selected processes.

646 EXPERT SYSTEMS IN CONTROLS AND MANUFACTURING
Prerequisite: 540 or equivalent or by permission. Expert system methodologies for process control, computer integrated flexible manufacturing and robotics.

647 MACHINING AND FUZZY CONTROL SYSTEMS
Prerequisite: 540 or permission of instructor. Analysis and design of intelligent control systems. Neural networks and fuzzy sets for process identification and controller design. Applications and case studies in industry.

650 TROBOLOGY
Fundamentals of friction lubrication and wear treated; includes basic theory, advanced topics, applications to bearings, seals, etc. Specific topics include adhesive and abrasive wear, boundary lubrication, fluid film lubrication and bearings, rolling element bearings, tribology of metals.

655 MICRO- AND NANO-FLUID DYNAMICS
Prerequisite: 611 or permission of instructor. This course includes fundamentals of the analytical and numerical solutions of the problems pertinent to fluid mechanics on nano- and micro-
scales. Applications will include micro-engines, MEMS, micro-fluids, and synthesis of nano-
materials.

658 MECHANICAL BEHAVIOR OF NANO-STRUCTURED MATERIALS AND COMPOSITES
An overview of Lattice Dislocation Theory, Nanostructured Materials: Processing and Proper-
ties, and the foundations of Electron Microscopy, Atomic Force Microscopy, Carbon
Nano tubes, Polymer and Bio-MEMS.

660 ENGINEERING ANALYSIS
Prerequisite: 619 or permission of instructor. Study of analysis techniques as applied to specific engineering problems. Applications include beam deformations, acoustics, heat conduction and hydrodynamic stability.

661 FAILURE ANALYSIS OF MECHANICAL SYSTEMS
Prerequisite: 625 or permission. This course emphasizes engineering techniques for predict-
ing, yielding, buckling, fracture and fatigue of mechanical systems. Students will be taught how to approach a problem by examining case studies of structural and mechanical failures and will obtain practical experience in modeling real complex systems in an end-of-term project.

662 MICROSCLAE HEAT AND MASS TRANSFER

663 WEB-BASED SOLID MODELING AND E-MANUFACTURING
Prerequisite: 563 or equivalent or by permission of instructor. Team-based collaborative design with web-based solid modeling library, feature-based manufacturing analysis, and process planning using cross-platform interoperable tools including JAVA, VRML for optimized product realization.

664 FUNDAMENTALS OF CRYSTALIZATION AND SOLIDIFICATION
Prerequisites: 608 or equivalent, or permission. Fundamental theories of crystalline nucleation and growth, interface stability and morphology, microstructure formation, and microsegrega-
tion. Applications in casting, welding, laser processing, and single crystal growth.

666 ANALYSIS OF MANUFACTURING SYSTEMS
This course will examine general problems in the design, planning, and control of manufac-
turing systems.

670 INTEGRATED FLEXIBLE CELLULAR MANUFACTURING SYSTEMS-
ANALYSIS AND DESIGN
Prerequisites: 663 or equivalent or by permission of instructor. The analysis of integrated comput-
er-aided manufacturing systems, design of automated manufacturing components and simula-
tions of flexible cellular manufacturing systems.

671 FUNDAMENTALS AND APPLICATIONS OF MICRO ELECTRO MECHANICAL SYSTEMS
Fundamentals of MEMS based sensors and actuators, MEMS materials, bulk and surface micromachining and MEMS device testing. Application in optics, automotive, and biomedical instrumentation.

672 DESIGN OF MICROSYSTEMS AND NANO DEVICES
Designs of various types of micro and nano sensors and actuators, microfluidic devices, microstructure analysis and simulation, microfabrication process design rules. Applications in MOEMS, lab-on-a-chip devices, BioMEMS and NEMS.

673 MEASUREMENTS METHODS AND EXPERIMENTAL ERROR IN THERMOFLUID SCIENCES
The course will incorporate elements of experimental error analysis, optics, and optical ray tracing, principles of testing with emphasis on low quantization and temperature measurements. Laboratory work with hands-on experience.

674 DEFORMATION AND FAILURE OF POLYMERS AND SOFT MATERIALS
This course covers the introduction to fracture, failure, and analyses of engineering polymers, soft, and biological materials.

696 SPECIAL TOPICS IN MECHANICAL ENGINEERING
1-4 credits
Prerequisite: Permission by instructor. For qualified candidate for graduate degree. Super-
vised research in the student’s major field of training or experience. Credit depends upon nature and extent of project as determined by advisor and department chair.

697 ENGINEERING REPORT
2 credits
Prerequisite: Permission of advisor. A relevant problem in mechanical engineering for students electing the non-thesis option. The final engineering report must be approved by the advisor and the advisory committee.

698 MASTER’S RESEARCH
1-6 credits
Prerequisite: Permission of advisor. (May be repeated.) Research on a subject in the field of mechanical engineering culminating in a master’s thesis.

699 MASTER’S THESIS
1-6 credits
Prerequisite: permission of advisor. (May be repeated) Supervised research in a specific area of mechanical engineering.

704 FINITE ELEMENT ANALYSIS II
3 credits

705 FINITE ELEMENT ANALYSIS III
Prerequisite: 609, 704. Static and dynamic contact problems. Tired mechanics. Fracture mechanics. Plasticity problems involving small and large deformations. Shake down analysis. General con-
stitutive models for composite media, thermoviscoelasticity, fluid turbulence. Fluid-solid inter-
action analysis.

710 DYNAMICS OF VISCOUS FLOW II
3 credits
Prerequisite: 610. Introduction to turbulence. Turbulence modeling and turbulent boundary layer problems. Practical methods of determining boundary layer parameters. Transition process.

711 COMPUTATIONAL FLUID DYNAMICS II
3 credits
Prerequisite: 611 or permission of instructor. Development of advanced computational tech-
niques for convection-dominated flows. Higher order explicit and implicit schemes including nonsolitonic front-catching methods applied to benchmark problems.

715 HYDRODYNAMIC STABILITY
Prerequisites: 680, 620. Permission, Stability concepts, Stability of Benard convection, Rayleigh-Taylor flow, parallel shear layers, boundary layer asymptotic solution of Or-Som-
merfield equation, nonparallel stability.

716 ADVANCED HEAT TRANSFER
3 credits
Prerequisite: 615, 616. Topics include nonhomogeneous or nonlinear boundary value prob-
lems of heat conduction, heat transfer with melting, solidification and ablation, heat transfer in porous systems and hydrodynamically and thermally unsteady convection.

723 APPLIED STRESS ANALYSIS II
3 credits
Prerequisite: 623. Continuation of 623. Development of approximate solution techniques including finite elements, method of weighted residuals (Rayleigh-Ritz, Galerkin, Trefethen, collo-
quadrature, least squares, etc.) and finite differences.

726 NONLINEAR CONTINUUM MECHANICS
3 credits
Prerequisites: 622, 616. Finite element and strain, stress, constitutive equations, strain energy functions. Solution of finite deformation problems in hypoelasticity, coupled thermovisco-
elasticity and plasticity, electroelasticity and micropolar theories.

730 VIBRATIONS OF CONTINUOUS SYSTEMS
3 credits
Prerequisites: 630. Continuation of Analysis of continuous vibrating systems, using separa-
tion of variables, energy, variational, Rayleigh-Ritz and other approximate methods. Con-
ceptual and solutions of integrals are applied to continuous systems.

732 ADVANCED MODAL ANALYSIS OF STRUCTURES
3 credits
Prerequisite: 633 or equivalent. Structural excitation techniques. Modal parameter estimation. System modification; mass-spring, lumped masses substructuring. Prediction and evalua-
tion of structural modified dynamic characteristics.

741 OPTIMIZATION THEORY AND APPLICATIONS
Prerequisite, permission by instructor. Theory of optimization in engineering systems, devel-
opment of optimal method of solutions for physical processes, large systems. Use of dynamic programming, operational research methods of system optimization, control.

743 ADVANCED METHODS IN ENGINEERING ANALYSIS
3 credits
Applications of finite difference and finite elements, variational methods, integral meth-
ods and similarity transforms to engineering problems in heat transfer, fluid mechanics and thermal sciences.

790 ADVANCED SEMINAR IN MECHANICAL ENGINEERING
1-4 credits
(May be repeated for a total of nine credits) Prerequisite: permission of department chair. Advanced projects and studies in various areas of mechanical engineering. Intended for stu-
dent seeking Ph.D in engineering degree.

898 PRELIMINARY RESEARCH
1-15 credits
Prerequisite: approval of dissertation director. Preliminary investigations prior to the submis-
sion of a dissertation proposal to the interdisciplinary Dissertation Committee.

899 DOCTORAL DISSERTATION
1-15 credits
(May be taken more than once.) Prerequisite: acceptance of research proposal by the Inter-
disciplinary Doctoral Committee and approval by the dissertation director. Original research by the doctoral student.

Graduate Courses 127
BIOMEDICAL ENGINEERING 4800:

522 PHYSIOLOGICAL CONTROL SYSTEMS 3 credits
The basic techniques employed in control theory, systems analysis, and model identification as they apply to physiological systems.

530 DESIGN OF MEDICAL IMAGING SYSTEMS 3 credits
Prerequisites: Permission of instructor. Physical principles and engineering design of medical imaging systems, with emphasis on digital radiography, computed tomography, nuclear medicine imaging, magnetic resonance imaging, and medical optics.

560 EXPERIMENTAL TECHNIQUES IN BIOMACHINES 3 credits
Prerequisites: Permission. Principles of testing and measuring devices commonly used for biofluid and biosignal mechanics studies. Laboratories for demonstration and hands-on experience.

570 HUMAN FACTORS ENGINEERING 3 credits
Reliability and human error, human capabilities and limitations, crew protection, display systems, control panel and console design, interface design principles, risk management, safety and accident prevention.

600 BIOMEDICAL ENGINEERING COLLOQUIUM (May be repeated for a maximum of 16 credits) The Biomedical Engineering Colloquium is a seminar series designed to introduce students to current topics in biomedical engineering research, design, and business.

605 FUNDAMENTALS OF BIOMEDICAL ENGINEERING 4 credits
Prerequisite: Graduate standing in College of Engineering or permission of instructor. This course covers the fundamental areas of biomedical engineering including biomechanics, biomaterials, signal/image processing, bioprocess phenomena, controls, and emerging areas.

611 BIOMETRY 3 credits
Statistics and experimental design topics for the biomedical and biomedical engineering disciplines including: distributions, hypothesis testing and estimation, ANOVA, probit analysis and nonparametrics statistics.

612 NEURAL NETWORKS 3 credits
Examination of highly parallel, distributed architectures for computing that are, to varying degrees, derived from structures observed in biological nervous systems. After an overview of how real neurons operate, the course will examine both lassial and modern neural computing architectures. Comparisons will be made with traditional software architectures and applications for which neural networks seem most promising will be examined.

620 ADVANCES IN DRUG AND GENE DELIVERY SYSTEMS 3 credits
This course will examine technological innovations for the discovery of drugs and genetic code of introducing drugs and genes into the body, modeling drug transport, and metabolic responses of cells and organs will be analyzed.

630 BIOMEDICAL COMPUTING 3 credits
Computer applications in health care, clinical laboratories, AMHIT, medical records, direct order entry, A-D, D-A conversion, patient monitoring, peripherals and interfaces, diagnostic algorithms, automated ECG, ECG systems.

631 BIOMEDICAL INSTRUMENTATION I 4 credits
Prerequisite: 605 or permission of instructor. This course covers biomedical equipment, biosignal and processing technologies, biomedical sensors/ transducers, signal conditioning, data acquisition, noise control, device safety, and modern medical imaging systems.

635 BIOMEDICAL OPTICS 3 credits
Application of lightwave principles and optical fibers on the engineering design and analysis of biomedical systems, principles of measurement, instrumentation, techniques, and applications for medical diagnostic imaging, and treatment of disease.

640 SPINE MECHANICS 3 credits

641 HARD CONNECTIVE TISSUE BIOMECHANICS 3 credits
Prerequisites: 3100:351 or equivalent, or permission. Physical properties and functional bio- mechanics of bone. The biology and mechanics of fracture and fracture healing. Mechanics of external and internal fixation and implant designs and reconstruction techniques.

645 MECHANICS IN PHYSIOLOGY AND MEDICINE 3 credits
Blood rheology, mechanics of microcirculation, finite deformation theory, soft tissue mechanics, mechanics of blood and lymph circulation, kinetics and kinematics of orthopedic joints. Clinical applications.

647 KINETICS OF THE HUMAN BODY 3 credits
Prerequisites: Graduate standing in the College of Engineering or by permission. Analytical methods used to model and quantify human body motion. Three-dimensional kinematics, joint coordinate systems, functional anatomy, segment center of mass and joint centers.

650 CARDIOVASCULAR DYNAMICS 3 credits
Analysis of blood pumping action, pressure/flow waveform transmission and blood fluid mechanics factors. Use of modeling and direct measurement techniques. Clinical implications of disease.

653 TRANSPORT PHENOMENA IN BIOLOGY AND MEDICINE 3 credits
Basic transport mechanisms, cardiac mass and momentum transport, compartmentation, mass transfer in physiological systems and artificial kidney and lung devices. Design optimization. Analysis of human thermal system.

655 MICROFLUIDS FOR BIOTECNOLOGY 3 credits
Prerequisite: 615 or permission of instructor. This course integrates principles of fluid mechanics, surface and polymer sciences, and microfabrication to analyze flow of biofluids at the microstructure.

657 REHABILITATION ENGINEERING 3 credits
Prerequisites: graduate standing in engineering, mathematics, or science; or permission of the instructor. Devices for rehabilitation, interfacing the motor neurons, quantitative assessment techniques, prosthesis and orthotics, bedside mechanics, emerging technologies.

660 BIOMATERIALS AND LABORATORY 4 credits
Corequisite: Biomaterials Laboratory. Material uses in biological applications. Effect of physio- logical environment and sterilization on materials. Controlled and uncontrolled degradation. Effect of materials on soft tissue, hard tissue and blood. Laboratory experiments with medical devices designed for biomedical use and demonstrations of biological/materials interactions.

661 ADVANCED BIOMATERIALS 3 credits
Prerequisite: 660 or permission of instructor. The objective of this course is to provide founda- mental understanding of the host responses when exposed to various implantable devices and biomaterials. Methods for testing biocompatibility will be analyzed.

662 TISSUE ENGINEERING AND REGENERATIVE MEDICINE 3 credits
Prerequisite: 661 or permission of instructor. This course will cover topics including basic developmental biology, quantitative description of biological processes, and integration of cells with materials to regenerate tissue.
648 INDIVIDUAL AND FAMILY DEVELOPMENT ACROSS THE LIFESPAN
An exploration of individual and family development. Emphasis will be placed on understanding the relationship between the individual and his/her family.
3 credits

650 IMPLEMENTING ASSESSMENT IN THE CLASSROOM
Prerequisite: 642. Students in this class will develop, implement, and evaluate a comprehensive nine-week assessment plan. Delivered in face-to-face, web-enhanced, and fully online formats.
3 credits

651 DATA-DRIVEN DECISION MAKING FOR EDUCATORS
The purpose of this course is to facilitate the understanding and utilization of data to identify classroom and school improvement needs and make informed decisions in effecting change. Delivered in face-to-face, web-enhanced, and fully online formats.
3 credits

652 INTRODUCTION TO EDUCATIONAL EVALUATION
Prerequisites: Core concepts of educational evaluation including the purpose, process, standards, and modes of evaluation. Students will develop skills in interpreting and critiquing evaluation reports. Delivered in face-to-face, web-enhanced, and fully online formats.
3 credits

653 APPLICATIONS OF EDUCATIONAL EVALUATION
Prerequisite: 652. This course is designed as the second part of educational evaluation with a focus on the application of evaluation concepts and theory to real world situations. Delivered in face-to-face, web-enhanced, and fully online formats.
3 credits

654 MASTER'S PROJECT IN ASSESSMENT AND EVALUATION: PART 1
Prerequisite: permission of advisor. This capstone course is the culminating learning experience for the master's degree in Assessment and Evaluation. Students complete a comprehensive evaluation project of their choice. Delivered in face-to-face, web-enhanced, and fully online formats.
3 credits

655 MASTER'S PROJECT IN ASSESSMENT AND EVALUATION: PART 2
Prerequisite: 654, permission of advisor. This capstone course is the culminating learning experience for the master's degree in Assessment and Evaluation. Students complete a comprehensive evaluation project of their choice. Delivered in face-to-face, web-enhanced, and fully online formats.
3 credits

656 FIELD EXPERIENCE: MASTER'S
Prerequisite: permission of department chair and instructor. Area determined in accordance with student's program and professional goals.
1-3 credits

657 INDEPENDENT STUDY
Prerequisite: 744. Provides more advanced experience with theory and methods of qualitative research. Techniques of participant-observation, interviewing, and document collection will be covered.
3 credits

658 MASTERS PROBLEM
Prerequisite: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with problems in education at foundation levels.
2-4 credits

659 MASTERS THESIS
Prerequisites: permission of department chair and instructor. In-depth study of research problems within the theoretical and empirical research literature. Emphasis on hypothesis testing.
4-6 credits

701 HISTORY OF EDUCATION IN AMERICAN SOCIETY
Historical development of education in American social order, with special emphasis on social, political, and economic setting.
3 credits

703 SEMINAR: HISTORY AND PHILOSOPHY OF HIGHER EDUCATION
Prerequisite: 600 or equivalent. History and philosophy related to genesis and development of higher education in the Western world, with special emphasis given to higher education's development in the United States. Delivered in face-to-face, web-enhanced, and fully online formats.
3 credits

705 SEMINAR: SOCIAL-PHILOSOPHICAL FOUNDATIONS OF EDUCATION
Prerequisite: Admission to a College of Education doctoral program or permission. Inquiry into selected ideological, social, economic and philosophical factors affecting educational development in United States and other countries.
3 credits

710 ADULT LEARNING, DEVELOPMENT, AND MOTIVATION
Prerequisites: Admission to a College of Education doctoral program or permission. Emphasis on the psychology of adult learning, statistical aspects of adult cognitive, conceptual and moral development; life cycle development; life-like transitions.
3 credits

721 LEARNING PROCESSES
Prerequisites: Admission to a College of Education doctoral program or permission. Study of principles of learning and behavior, learning control, process and ecology. Emphasis on the processes, tasks, roles and relationships involved.
3 credits

723 TEACHER BEHAVIOR AND INSTRUCTION
Prerequisites: 600. Intensive survey of theoretical and empirical literature involving theories of teacher education and perceptions of instruction. A student reports on theory, empirical research and applications in area of individual interests.
3 credits

740 RESEARCH DESIGN
Prerequisites: Admission to a College of Education doctoral program or permission. Topics include problem statement, research questions, literature review, choosing a sample, selecting an appropriate research design and data collection method, and ethical and legal issues.
3 credits

741 DATA COLLECTION METHODS
Prerequisites: 740 and admission to a College of Education doctoral program or permission. Emphasis on selecting, developing, and administering common data collection methods in education and social science research including standardized tests, inventories, questionnaires, focus groups, and content analysis.
3 credits

743 STATISTICS IN EDUCATION
Prerequisites: Admission to a College of Education doctoral program or permission. Statistical methods and techniques used in educational measurement and in educational research. Emphasis on hypothesis testing.
3 credits

745 ADVANCED EDUCATIONAL STATISTICS
Prerequisite: 743 and admission to a College of Education doctoral program or permission. An advanced level course in statistical methods and techniques in educational research. Emphasis on interpreting advanced statistics in education and the social sciences.
3 credits

748 QUALITATIVE METHODS I
Prerequisite: 744. Provides an overview of theory about and hands-on experience with methods of qualitative research. Techniques of participant-observation, interviewing, and document collection will be covered.
3 credits

749 QUALITATIVE METHODS II
Prerequisite: 748. Provides more advanced experience with theory and methods of qualitative research. Data collection and analysis will focus on students' research interests and possible dissertation topics.
3 credits

759 PROJECT IN SPECIAL AREAS
Prerequisite: permission of department chair and instructor. Critical and in-depth study of specific problem in educational foundations.
1-3 credits

801 RESEARCH SEMINAR
Prerequisite: Admission to a College of Education doctoral program or permission. Intensive study of research methods applicable to education. Emphasis on developing a dissertation proposal.
3 credits

897 INDEPENDENT STUDY
1-4 credits

INSTRUCTIONAL TECHNOLOGY 5150:

590 WORKSHOP
Prerequisites: permission of department chair and instructor. Specific area of study determined in accordance with student's program and professional goals.
1-3 credits

591,593 WORKSHOP
Prerequisites: permission of department chair and instructor. Specific area of study determined in accordance with student's program and professional goals.
1-3 credits

600 ORGANIZATIONAL LEADERSHIP
Prerequisite: 5100:640. A perspective of educational leadership and the context in which it operates, with emphasis on the processes, tasks, roles and relationships involved. Field-based research required.
3 credits

601 MANAGEMENT OF PHYSICAL RESOURCES
A comprehensive view of the principles, practices, and new dimensions involved in the planning and management of educational facilities.
3 credits

603 MANAGEMENT OF HUMAN RESOURCES
An orientation to the major dimensions of the personnel function.
3 credits

604 SCHOOL CONTEXTS AND COMMUNITY INVOLVEMENT
Prerequisites: 601 and 5100:640. A course designed to prepare students interested in P-12 school leadership. It focuses on understanding strategies for collaborating with members of the school community.
3 credits

605 EVALUATION IN EDUCATIONAL ORGANIZATIONS
Prerequisites: 601 and 5100:640. An examination of the general concepts, models, practical applications and considerations involved in the evaluation of educational organizations.
3 credits

607 SCHOOL LAW
Prerequisites: 5100:601 and 5100:640. An examination of the legal principles underlying education in the United States as reflected in statutory provisions, court decisions and administrative orders. Field based research required. Course also available fully online.
3 credits

608 SCHOOL FINANCE AND ECONOMICS
A study of financial operations of school systems, including taxes, other sources of revenue, expenditures, budgeting and effects of economic factors.
3 credits

609 PRINCIPLES OF CURRICULUM DEVELOPMENT
Prerequisites: 601 and 5100:640. This course is intended to help the student develop the competencies necessary to engage in curriculum decision making.
3 credits

610 SUPERVISION OF INSTRUCTION
Prerequisites: 601 and 5100:640. An introduction to the school function that improves instruction through direct assistance, curriculum, staff and group development and action research.
3 credits

GENERAL ADMINISTRATION 5170:

590 WORKSHOP
Prerequisites: permission of department chair and instructor. Specific area of study determined in accordance with student's program and professional goals.
1-3 credits

591,593 WORKSHOP
Prerequisites: permission of department chair and instructor. Specific area of study determined in accordance with student's program and professional goals.
1-3 credits

601 ORGANIZATIONAL LEADERSHIP
Prerequisite: 5100:640. A perspective of educational leadership and the context in which it operates, with emphasis on the processes, tasks, roles and relationships involved. Field-based research required.
3 credits

602 MANAGEMENT OF PHYSICAL RESOURCES
A comprehensive view of the principles, practices, and new dimensions involved in the planning and management of educational facilities.
3 credits

603 MANAGEMENT OF HUMAN RESOURCES
An orientation to the major dimensions of the personnel function.
3 credits

604 SCHOOL CONTEXTS AND COMMUNITY INVOLVEMENT
Prerequisites: 601 and 5100:640. A course designed to prepare students interested in P-12 school leadership. It focuses on understanding strategies for collaborating with members of the school community.
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607 SCHOOL LAW
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A study of financial operations of school systems, including taxes, other sources of revenue, expenditures, budgeting and effects of economic factors.
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609 PRINCIPLES OF CURRICULUM DEVELOPMENT
Prerequisites: 601 and 5100:640. This course is intended to help the student develop the competencies necessary to engage in curriculum decision making.
3 credits

610 SUPERVISION OF INSTRUCTION
Prerequisites: 601 and 5100:640. An introduction to the school function that improves instruction through direct assistance, curriculum, staff and group development and action research.
3 credits
613 STUDENT SERVICES AND INTERAGENCY COLLABORATION 3 credits
Prerequisites: 601 and 5100:640. Overview of pupil services including analysis of the nature and development of educational programs and program and discussion of current issues and trends. Field based research required.

615 STUDENT SERVICES AND DISABILITY LAW 3 credits
Prerequisites: 601 and 5100:640. The course examines the statutory and case laws and regulations affecting students with disabilities. Laws are reviewed, policy implications identified, and legally compliant practices proposed.

620 SCHOOL CULTURE AND GOVERNANCE 3 credits
An examination of leadership as it relates to the development and maintenance of a school climate and culture conducive to teaching and learning.

695,6 PRINCIPAL INTERNSHIP 3 credits each
Students are required to successfully complete a two-semester internship in a school district chosen by the student and his/her advisor.

697 INDEPENDENT STUDY 1-3 credits
Prerequisites: permission of advisor and supervisor of the independent study. Area of study determined by student's needs. (May be repeated for a total of six credits.)

704 ADVANCED ORGANIZATIONAL LEADERSHIP 3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Study of organizational and strategic skills and leadership. Features common methods of administration. Practical methods by which overcoming bureaucratic weaknesses of bureaucracies are offset or even reversed in educational organizations. (May be repeated for a total of six credits.)

705 DECISION MAKING IN EDUCATIONAL ADMINISTRATION 3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Decision making is portrayed as a central function of the educational administrator with a united presentation of the theory, research and practice of decision making.

707 THE SUPERINTENDENCY 3 credits
An orientation to the superintendent's role and an examination of the strategies for dealing with the major relational and functional aspects of the superintendency.

708 ADVANCED SCHOOL LAW 3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Issues related to the changing school law, private, school district, and university. (May be repeated for a total of six credits.)

731 RESIDENCY SEMINAR 3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. The Residency Seminar introduces students to the issues and methods of a collegial faculty work setting. (May be repeated for a total of six credits.)

740 THEORIES OF EDUCATIONAL SUPERVISION 3 credits
Prerequisite: 601. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

750 TOPOICAL SEMINAR 1-3 credits
(May be repeated with a change of topic for a total of six credits.) Prerequisites: Admission to a College of Education doctoral program or permission. Emphasis given to recent efforts to bring about reform at all levels of the educational enterprise and to conceptual perspectives and research findings.

760 RESIDENCY SEMINAR 3 credits
Prerequisite: 601. Focus on recent research in administration and educational administration theory.

761 PUBLIC AND MEDIA RELATIONS IN EDUCATIONAL ORGANIZATIONS 3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. A course in educational public relations intended to help educational leaders facilitate the development of common perceptions about school issues with multiple constituents. Offered in a distance learning format.

762 THEORIES OF EDUCATIONAL SUPERVISION 3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Focus on recent research in administration and educational administration theory.

763 POLITICAL EDUCATION 3 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Emphasis given to recent efforts to bring about reform at all levels of the educational enterprise and to conceptual perspectives and research findings.

765 INTERNSHIP IN EDUCATIONAL ADMINISTRATION 1-5 credits
Prerequisites: Admission to a College of Education doctoral program or permission. Students are required to successfully complete a two-semester internship in a school district chosen by the student and his/her advisor.

897,6 DOCTORAL INTERNSHIP 1-6 credits
Candidates completing the doctoral degree in educational administration must prepare and complete a research proposal that includes research questions, a literature review, and a research design. They must collect, analyze, and interpret data.

899,6 INDEPENDENT STUDY 1-3 credits
Prerequisites: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in education. (May be repeated for a total of six credits.)

909 DOCTORAL DISSERTATION 1-20 credits
Prerequisite: permission of advisor. Specific research problem that requires student to apply research skills and techniques to the problem being studied.

HIGHER EDUCATION ADMINISTRATION 5190:

515 ADMINISTRATION IN HIGHER EDUCATION 3 credits
Prerequisites: permission of advisor. In-depth study of administrative roles, functions, knowledge and skills requirements, and administrative behavior. Trends in administrative theory and application also explored. Delivered in face-to-face web enhanced format and fully online format.

521 LAW AND LEGAL EDUCATION 3 credits
Legal aspects of higher education, sources of law and authority presented; impact on, interaction with, and implications of the administration of higher education discussed. Delivered in face-to-face web enhanced format and fully online format.

525 TOPICAL SEMINAR: HIGHER EDUCATION 3 credits
(May be repeated.) Topical study in a variety of areas related to public and/or private higher education institutions, organizations, and the impact of six credits applied to degree. Delivered in face-to-face web enhanced format and fully online format.

526 STUDENT SERVICES AND HIGHER EDUCATION 3 credits
Prerequisite: permission. Examination of issues related to the delivery and evaluation of student services in higher education. Delivered in face-to-face web enhanced format and fully online format.

527 THE AMERICAN COLLEGE STUDENT 3 credits
Prerequisite: permission. Introduction to the sociopsychological literature concerning the impact of college on students and student development theory. Delivered in face-to-face web enhanced format and fully online format.

530 HIGHER EDUCATION CURRICULUM AND PROGRAM PLANNING 3 credits
Prerequisites: Curriculum planning principles at the college and university level. Influencing curriculum design, theories and practices of curricular change and innovation are also explored. Delivered in face-to-face web enhanced format and fully online format.

590 WORKSHOP 1-3 credits
(May be repeated for a total of six credits.) Emphasizing the development and demonstration of leadership behavior appropriate to the college or university setting. Delivered in face-to-face web enhanced format and fully online format.

594 ADVANCED ADMINISTRATIVE COLLOQUIUM IN HIGHER EDUCATION 3 credits
Prerequisite: permission. (To be taken during student's final semester of coursework) Examination of higher education in context of perspectives and issues, including those that pose particular concern to students. Capstone experience for students posed for program completion. Delivered in face-to-face web enhanced format and fully online format.

601 INTERNSHIP IN HIGHER EDUCATION 1-3 credits
(May be repeated for a total of six credits) Prerequisite: permission; corequisite: 602. Intensive work experience in operations of an institution of higher education, related to student's own program of studies and professional goals. Delivered in face-to-face web enhanced format and fully online format.

602 INTERNSHIP IN HIGHER EDUCATION SEMINAR 1 credit
(May be repeated for a total of six credits) Prerequisite: permission; corequisite: 601. To be taken in conjunction with internship for synthesis of problems encountered in internship experience and to provide the opportunity to share ideas and experiences from various areas of higher education internship placement. Delivered in face-to-face web enhanced format and fully online format.

610 DIVERSITY ISSUES IN HIGHER EDUCATION 3 credits
Prerequisites: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

615 HISTORICAL FOUNDATIONS OF AMERICAN HIGHER EDUCATION 3 credits
Prerequisites: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

620 FINANCE AND HIGHER EDUCATION 3 credits
Prerequisites: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

626 POLICY, ASSESSMENT, AND ACCOUNTABILITY IN HIGHER EDUCATION 3 credits
Prerequisites: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

635 INSTRUCTIONAL STRATEGIES AND TECHNIQUES FOR THE COLLEGE INSTRUCTOR 3 credits
Prerequisite: 601:640:645. Topics in instructional theory and techniques which are appropriate to instructional planning and development of college-level courses. Delivered in face-to-face web enhanced format and fully online format.

645 INDEPENDENT STUDY IN HIGHER EDUCATION 1-3 credits
Prerequisites: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

TEACHING AND TRAINING TECHNICAL PROFESSIONALS 5400:

500 POSTSECONDARY LEARNER 3 credits
Prerequisites: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

501 LEARNING WITH TECHNOLOGY 3 credits
Prerequisites: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

505 WORKPLACE EDUCATION FOR YOUTH AND ADULTS 3 credits
Prerequisite: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

515 TRAINING IN BUSINESS AND INDUSTRY 3 credits
Prerequisite: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

520 POSTSECONDARY INSTRUCTIONAL TECHNOLOGY 3 credits
Prerequisites: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

530 SYSTEMATIC CURRICULUM DESIGN FOR POSTSECONDARY INSTRUCTION 3 credits
Prerequisites: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

535 SYSTEMATIC INSTRUCTIONAL DESIGN IN POSTSECONDARY EDUCATION 3 credits
Prerequisite: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

541 EDUCATIONAL GERONTOLOGY SEMINAR 3 credits
Prerequisites: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

580 SPECIAL TOPICS: WORKFORCE EDUCATION/TRAINING 1-3 credits
Prerequisites: permission. Focus on recent research in administration and educational administration theory. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in face-to-face web enhanced format and fully online format.

580 SPECIAL TOPICS: WORKFORCE EDUCATION/TRAINING 1-3 credits
(May be repeated for a maximum of six credits with a change in topic) Group study of special topics of critical, contemporary concern in professional field.
590,1 WORKSHOP 1-3 credits each
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units. Delivered in face-to-face web-enhanced format and fully online format.

594 EDUCATIONAL INSTITUTES 1-4 credits
Special courses designed as in-service upgrading programs, frequently provided with the support of national foundations.

600 THE TWO-YEAR-College 3 credits
Introduces students to the nature, purpose, and philosophy of the two-year college. Includes an examination of two-year colleges, technical schools, proprietary schools offering associate degrees at the postsecondary level. Delivered in face-to-face web-enhanced format and fully online format.

605 ADVANCED SYSTEM DESIGN: NEEDS ASSESSMENT AND EVALUATION 3 credits
An examination of the instructional design in workplace education and training and supporting research in effective performance-based programs needs, assessment, and evaluation information. Delivered in face-to-face web-enhanced format and fully online format.

620 POSTSECONDARY TEACHER LEADERSHIP 3 credits
An examination of the role of supervisor of postsecondary instruction, facilitation and evaluation of postsecondary instructors, professional development, as well as related leadership and management issues. Delivered in face-to-face web-enhanced format and fully online format.

625 INDEPENDENT STUDY 6 credits
Independent study of purpose, scope, history, theory, institutions, and programs of distance learning. Delivered in face-to-face web-enhanced format and fully online format. Delivered in independent study mode.

675 ADVANCED INSTRUCTIONAL APPLICATIONS SEMINAR 3 credits
Prerequisites: 600, 520, 530, and 535. Provides an environment for students to apply learned teaching skills, evaluate their teaching abilities, and fine-tune skills before independently teaching in the field. Delivered in face-to-face web-enhanced format and fully online format.

690 INDEPENDENT STUDY IN POSTSECONDARY EDUCATION 3 credits
Prerequisites: 600, 501, 520, 530, and 535. Teaching or curriculum development under supervision of the College of Education and the learning organization. Includes a seminar and portfolio development. Delivered in independent study format.

695 FIELD EXPERIENCE: MASTER'S 1-4 credits (30-80 field hours)
The experience is related to student's program of studies. Credit/noncredit.

697 INDEPENDENT STUDY 1-3 credits
(May be repeated for a total of six credits.) Area of study determined by student's need.

699 MASTER'S THESIS 3 credits
Prerequisites: 600, 501, 520, 530, and 535. Teaching or curriculum development under supervision of the College of Education and the learning organization. Includes a seminar and portfolio development. Delivered in independent study format.

FIELD EXPERIENCE: MASTER'S 1-4 credits (30-80 field hours)
The experience is related to student's program of studies. Credit/noncredit.

699 MASTER'S THESIS 3 credits
Prerequisites: 600, 501, 520, 530, and 535. Teaching or curriculum development under supervision of the College of Education and the learning organization. Includes a seminar and portfolio development. Delivered in independent study format.

699 MASTER'S THESIS 3 credits
(May be repeated for a total of six credits.) Opportunity to conduct research on a problem in workplace education or training. Student must be able to demonstrate needed analytical, evaluative, and basic research skills. Credit/noncredit.

CURRICULAR AND INSTRUCTIONAL STUDIES 5500:

530 ADVANCED INSTRUCTIONAL TECHNIQUES 3 credits
Methods of teaching a particular area of the 7-12 school curriculum for students in the Master's with Licensure program.

531 FIELD EXPERIENCE: ADVANCED INSTRUCTIONAL TECHNIQUES 2 credits
Corequisite: 520. Instructional experience in the 7-12 classroom to apply theory and research to practice.

532 CONTENT AREA LITERACY 3 credits
Examines the instructional strategies for constructing meaning in content subjects (e.g., science, social studies, mathematics) using print and electronic texts.

534 TEACHING READING TO CULTURALLY DIVERSE LEARNERS 2 credits
Knowledge of reading and writing skills and the ability to employ effective methods of teaching reading to diverse populations and learners whose language patterns are nonstandard.

540 PRINCIPLES OF BILINGUAL/MULTICULTURAL EDUCATION 3 credits
An introduction to the theories, research, social conditions for bilingual/multicultural education. Legislation, court decisions, program implementation included.

541 TEACHING LANGUAGE LITERACY TO SECOND LANGUAGE LEARNERS 4 credits (12 field hours)
Course applies methodologies for teaching reading, language arts in the bilingual/multicultural classroom. The bilingual student’s native language and culture are strengths.

542 TEACHING MATHEMATICS, SOCIAL STUDIES AND SCIENCE TO BILINGUAL STUDENTS 3 credits
Prerequisites: elementary education majors, 5500-333, 336, 338; secondary education majors, 5500-311 (science, social studies, and science in the multicultural classroom). Credit/no credit class.

543 TECHNIQUES FOR TEACHING ENGLISH AS A SECOND LANGUAGE 3 credits (10 field hours)
Course includes teaching language skills to Limited English Proficient students in grades K-12. Examination of language assessment tests, selection and evaluation of materials.

547 NATURE, HISTORY, AND PHILOSOPHY OF SCIENCE 3 credits
May be repeated for a maximum of 6 credits.

548 EDUCATIONAL INSTITUTES 1-4 credits
Special courses designed as in-service upgrading programs. Frequently provided with support of national foundations.

600 CONCEPTS OF CURRICULUM AND INSTRUCTION 3 credits (3 field hours)
A study of the underlying research and theory of curriculum and instruction with special attention to educational decision in the metropolit urban setting. (3 field hours)

605 SEMINAR IN TRENDS AND ISSUES IN CURRICULUM AND INSTRUCTION 3 credits
A study of recent research and theory in curriculum and instruction with special attention to professional developments to educational decision in the metropolitan setting. (3 field hours)

615 PHILOSOPHY AND ORGANIZATION OF MIDDLE SCHOOLS 3 credits
Philosophy, theory, research, and exemplary organizational, assessment, and evaluation components of middle level education.

616 MIDDLE SCHOOL CURRICULUM AND INSTRUCTION 3 credits
Theories, research, and exemplary practices focusing on middle school curriculum and instruction.

617 LICENSURE SEMINAR IN CURRICULUM AND INSTRUCTIONAL STUDIES 3 credits
This course should be taken at the beginning of the Master's with Licensure program as an introduction to curriculum and the pragmatics of teaching.

621 ADVANCED INSTRUCTIONAL TECHNIQUES: MODERN LANGUAGES P-8 3 credits
Prerequisite: 617 or permission of instructor. Focus is on theories of language acquisition, models of instruction tailored to teaching foreign languages and cultures in the (P-8) classroom, and strategies that promote appropriate levels of language competence and proficiency for young learners. (35 field hours)

622 CHILDREN'S LITERATURE IN THE CURRICULUM 3 credits
Examination of literary genres and processes for presenting literature to children in preschool, elementary, and middle grades.

625 CONTEMPORARY ISSUES IN LITERACY INSTRUCTION AND PHONICS 3 credits
Survey course explores current research in reading and writing as constructive processes of meaning-making.

626 ASSESSMENT OF READING DIFFICULTIES 3 credits
Prerequisite: 625. Examines formal and informal assessments and intervention strategies for children with reading difficulties.

627 SPECIAL TOPICS: CURRICULAR AND INSTRUCTIONAL STUDIES 3 credits
Prerequisite: permission of instructor. May be repeated with change in topic for a maximum of 9 credits. Issues and subjects related to research in foreign language education and language learning theories. Different topics will be offered from section to section.

628 LITERACY ASSESSMENT PRACTICUM 3 credits (25.5 field hours)
Prerequisite: 620. Examination of themes in a classroom, small groups and individuals. A student diagnoses, implements procedures, and follows prescribed reading improvement. (May be repeated for a maximum of six credits.) Credit/no credit.

629 READING PROGRAMS IN SECONDARY SCHOOLS 3 credits
For all subject teachers both with and without previous study in the teaching of reading. Materials, class organization, and procedures for developing reading improvement programs, for all secondary school and college students.

631 ADVANCED BEHAVIORAL STRATEGIES FOR THE EDUCATOR 3 credits
May be repeated for a total of six credits. Issues and subjects related to research in foreign language education and language learning theories. Different topics will be offered from section to section.

632 TOPICAL SEMINAR IN RESEARCH AND THEORY IN FOREIGN LANGUAGE EDUCATION 3 credits
May be repeated for a total of six credits. Issues and subjects related to research in foreign language education and language learning theories. Different topics will be offered from section to section.

633 INTRODUCTION TO TEACHER LEADERSHIP 3 credits
The course philosophically, scientifically, and historically explores contemporary teacher leadership in the United States and the role of critical thinking as it relates to the reflective practice of teaching.

640 DEVELOPMENT OF CHILDREN: GRADES FOUR AND FIVE 3 credits
Prerequisite: Early Childhood P-3 teaching license. Course focuses on the development of four to five adolescents' development including physical, cognitive-intellectual, moral, psycho-social, and emotional. Knowledge about individual and societal contexts.

641 COACHING FOR EFFECTIVE ASSESSMENT PRACTICE 2 credits
Prerequisite: 640. The purpose of this course is to provide an introduction to literacy assessment and coaching for classroom teachers.

642 DEVELOPMENT OF CHILDREN: GRADES FIVE AND SIX 3 credits
Prerequisite: Early Childhood P-3 teaching license. Course focuses on the development of five to six adolescents' development including physical, cognitive-intellectual, moral, psycho-social, and emotional. Knowledge about individual and societal contexts.

643 SECONDARY CURRICULUM AND INSTRUCTION 3 credits
Prerequisite: 640. The language arts, mathematics, science, and social studies, arts, and technology content and the knowledge of inquiry and problem-based instruction necessary for middle school grades.

644 FOURTH GRADE CURRICULUM AND INSTRUCTION 3 credits
Prerequisite: 640. The language arts, mathematics, science, and social studies, arts, and technology content and the knowledge of inquiry and problem-based instruction necessary for fourth grade learners.

645 FIFTH GRADE CURRICULUM AND INSTRUCTION 3 credits
Prerequisite: 640. Models an inquiry-based format that integrates math, science, social studies, and technology standards as a way for students to learn to create, implement, manage, and evaluate student-centered learning environments.

646 THEORY AND PRACTICE IN ELEMENTARY SCHOOL MATHEMATICS 3 credits
Focuses on the development of mathematics education, current trends in the teaching of elementary school mathematics, and future directions in mathematics education.

650 ELEMENTARY SCIENCE CURRICULUM AND INSTRUCTION 3 credits
A critical analysis of contemporary science curriculum and instructional methods for the young learner with particular attention to constructivism and national standards.

651 SECONDARY SCIENCE CURRICULUM AND INSTRUCTION 3 credits
A critical analysis of the theory and practice of curriculum and instructional methods in science for early adolescents and secondary learners.

655 COACHING IN DIVERSE CLASSROOMS 2 credits
This course focuses on the preparation of literacy specialists to coach teachers in the implementation of culturally responsive literacy instruction for diverse learners.

656 COACHING FOR EFFECTIVE ASSESSMENT PRACTICE 2 credits
Designs for reading specialists, this course teaches knowledge, skills and dispositions in school-based professional development for classroom teachers.

660 PEDAGOGY OF EFFECTIVE LITERACY INSTRUCTION 3 credits
The theories, research, and exemplary practices focusing on the development of literacy instruction.

661 PROFESSIONAL DEVELOPMENT IN LITERACY 3 credits
An introduction to research and knowledge bases related to teacher professional development with an examination of classroom coaching as one venue of supporting teacher professional development.

662 ADVANCED LITERACY RESEARCH 2 credits
This course is an introduction to literacy research as an integral part of professional development that supports engagement in inquiry that advances candidates’ understanding of literacy instruction.
665 LITERACY SPECIALIST INTERNSHIP 4 credits
(Repeatable for a maximum of eight credits) The internship is a school-based practicum that integrates the accomplishment of the Literacy Specialist Endorsement Standards and focuses on data-based decision making to inform coaching.

690 MASTER’S RESEARCH 3 credits
Prerequisite: 760. The implementation of a research design for an inquiry into a curricular and/or instructional problem within an educational setting.

692 FIELD EXPERIENCE: COLLOQUIUM 1 credit
Prerequisite: admission to student teaching; corequisite: 694. Instructional experience in the 7-12 classroom to apply theory and research to practice. (May be repeated for a maximum of 6 credits; 50 field hours per credit)

693 FIELD EXPERIENCE: MASTER’S WITH LICENSURE 1-3 credits
Instructional experience in the 7-12 classroom to apply theory and research to practice. (May be repeated for a maximum of 6 credits; 50 field hours per credit)

694 FIELD EXPERIENCE: CLASSROOM INSTRUCTION 1-12 credits
Prerequisites: admission to student teaching corequisite: 692. Planned teaching experience in schools selected and supervised by Office of Extended Educational Experiences.

695 FIELD EXPERIENCE: MASTER’S 1-6 credits
Prerequisites: permission of advisor and director. Experience in an educational setting to apply educational theory and research to practice.

696 MASTER’S PROJECTS 1-6 credits
In-depth investigation of specific problem pertinent to student’s area of concentration in education.

697 INDEPENDENT STUDY 1-3 credits
Selected areas of independent investigation as determined by advisor and related to student’s academic needs.

699 MASTER’S THESIS 4-6 credits
In-depth study of research problem in education. Student must be able to demonstrate necessary competencies to deal with research problem in education.

750 CURRENT RESEARCH AND THEORY IN SCIENCE EDUCATION 3 credits
Intensive examination of contemporary theory and literature in science teaching and learning for preschool through senior high school students.

760 ACTION RESEARCH 3 credits
Prerequisite: Admission to the program. Students develop skills needed to conduct Action Research studying their own instruction to identify means to improve the effectiveness of teaching and learning.

780 SEMINAR IN CURRICULAR AND INSTRUCTIONAL STUDIES 1-3 credits
May be repeated (May be repeated) Instructional experience in a particular area of curriculum and instruction.

800 PROFESSIONAL SEMINAR IN CURRICULAR AND INSTRUCTIONAL STUDIES 3 credits
Prerequisite: admission to either the Ph.D. in Elementary Education or the Ph.D. in Secondary Education program. Learners will develop individualized programs of study and plan their doctoral studies. An overview of process and procedures will be addressed.

820 ADVANCED STUDY AND RESEARCH IN CURRICULUM AND INSTRUCTION 3 credits
Survey of research, comparison and evaluation of programs, design and development of projects in reading through group or individual study.

880 DOCTORAL SEMINAR IN CURRICULAR AND INSTRUCTIONAL STUDIES 3 credits
Prerequisite: admission to the Ph.D. program in either Elementary Education or Secondary Education or department consent. Intensive examination of a particular area of teacher education. (May be repeated with change of topic and for a total of 9 credits.)

890 DOCTORAL FIELD EXPERIENCE 1-6 credits each (May be repeated for a total of 6 hours.) Intensive job-related experience pertinent to student’s needs. Student must be able to demonstrate skills and leadership abilities in an on-the-job situation.

897 INDEPENDENT STUDY 1-6 credits
(May be repeated for a total of 6 hours.) Area of study determined by student’s needs.

898 DOCTORAL DISSERTATION 1-20 credits
Study and in-depth analyses of a research problem in curriculum and instruction.

PHYSICAL EDUCATION 5550:

500 MUSCULOSKELETAL ANATOMY: UPPER EXTREMITY 3 credits
Designed to address the upper portions of the musculoskeletal system in comprehensive detail. Includes articulations, cytology, histology, neurological integration with lab and practical experiences.

501 MUSCULOSKELETAL ANATOMY: LOWER EXTREMITY 3 credits
Designed to address the lower portions of the musculoskeletal system in comprehensive detail. Includes articulations, cytology, histology, neurological integration with lab and practical experiences.

505 ADVANCED STRENGTH AND CONDITIONING 3 credits
This course teaches conditioning programs designed for heterogeneous populations. The course covers high-level sport specific exercise prescriptions that aid injury prevention and performance enhancement.

510 INTRODUCTION TO SPORT SOCIOLOGY 3 credits
Provides information to students about the sociological aspects of sport. Delivered in a totally online format, web-based format, or face-to-face format.

518 CARDIORESPIRATORY FUNCTION 3 credits
This course is designed to study the normal structure and function of the respiratory system and how it is affected by different types of disease.

520 SPORT MANAGEMENT 3 credits
This course seeks to explore, acquire, and discuss knowledge within the theoretical and applied management practices of sport, fitness, and instructional programs. Delivered in a totally online format, web-based format, or face-to-face format.

522 SPORTS PLANNING/ PROMOTION 3 credits
Analysis of marketing/promotions from a sport manager’s perspective. Emphasis on marketing strategy, tactics, and development in sport delivery systems. Delivered in a totally online format, web-based format, or face-to-face format.

524 SPORT LEADERSHIP 3 credits
Introduction to current issues related to leadership, management, and supervision. Examines current sport leadership research and governance structure of amateur and professional sport organizations. Delivered in a totally online format, web-based format, or face-to-face format.

526 NUTRITION FOR SPORTS 3 credits
This course will provide an explanation of the consumption, absorption, and recommendation for diets of athletes and the physically active individual.

528 NUTRITION FOR TEACHERS AND COACHES 3 credits
Covers nutritional basics and current topics related to teaching physical education/health and coaching athletes.

536 FOUNDATIONS AND ELEMENTS OF ADAPTED PHYSICAL EDUCATION 3 credits
Principles, components, and strategies necessary in providing motor activities for handicapped students via application of a neo-development model and alternative methods. Three hour lecture.

538 CARDIAC REHAB PRINCIPLES 3 credits
This course will teach students the core competencies for cardiac rehab professionals, based upon the American Association of Cardiovascular and Pulmonary Rehabilitation Specialists (AACCPR).

540 INJURY MANAGEMENT FOR TEACHERS AND COACHES 2 credits
This course challenges the student to determine ways to provide and the safety for the individuals they teach.

541 ADVANCED ATHLETIC INJURY MANAGEMENT: UPPER EXTREMITY 4 credits
This course is designed to help students understand ways to prevent and properly diagnose upper extremity injuries as well as general medical pathologies of the upper extremity.

546 INSTRUCTIONAL TECHNIQUES IN SECONDARY PHYSICAL EDUCATION 3 credits
Instructional techniques for secondary physical education. The course content is to improve the teaching skills of students who will be teaching physical education at the secondary level. It is a required course for the physical education licensure.

547 INSTRUCTIONAL TECHNIQUES FOR CHILDREN IN PHYSICAL EDUCATION 3 credits
Instructional techniques for teaching physical education. The course content is to improve the teaching skills of students who will be teaching physical education for children. It is a required course for the physical education licensure.

550 ORGANIZATION AND ADMINISTRATION OF PHYSICAL/HEALTH EDUCATION, INTRAMURAL AND ATHLETICS 3 credits
General concepts of administration and organization in physical/health education, intramural, and athletic programs.

552 FOUNDATIONS OF SPORT SCIENCE, PHYSICAL AND HEALTH EDUCATION 3 credits
Overview of the emergence of sport science, physical and health education as a profession and the supporting role of the underlying scholarly and scientific disciplines.

553 PRINCIPLES OF COACHING 3 credits
Basics for becoming a successful coach. Discussion of principles applying to most sports, players, and coaches. Ten (10) clinical hours required. Delivered in a totally online format, web-based format, or face-to-face format.

562 LEGAL/Ethical ISSUES IN PHYSICAL AND LEISURE ACTIVITIES 2 credits
Overview of legal and ethical elements of greatest concern to specialists in sport and physical activity. Cases used to illustrate specific points. Topics vary. Delivered in a totally online format, web-based format, or face-to-face format.

565 PSYCHOLOGY OF INJURY REHABILITATION 2 credits
This course will address the cognitive and affective aspects of injury and rehabilitation of injury. Specifically the stages of rehabilitation and techniques to aid in the rehabilitation process.

566 ORTHOPEDIC INJURY AND PATHOLOGY 3 credits
This course will discuss musculoskeletal pathology and surgical procedures associated with a physically active population.

592 WORKSHOP 1-3 credits
Practical, intensive, and concentrated involvement with current curricular practices in related to physical education.

595 PRACTICUM: STUDENT TEACHING 2 credits
Prerequisite: Core courses and student program studies courses. Corequisites: 595. Students who hold a bachelor’s degree but no teaching license who are completing the master’s with licensure will meet while completing student teaching to discuss concerns about the student teaching experience to analyze previous learning as it relates to this and future teaching.

595 PRACTICUM: STUDENT TEACHING 8 credits
Prerequisites: Core courses and program studies courses. Corequisites: 594. Student teaching for 16 weeks in primary and secondary school settings.

600 BIOMECHANICS APPLIED TO SPORT AND PHYSICAL ACTIVITY 4 credits
Training future professionals in an integrated approach to qualitative diagnosis of motor skills for a variety of professional settings. Required clinical/field experiences.

601 SPORTS ADMINISTRATION AND SUPERVISION 3 credits
Organizational and administrative efficiency in implementing sports programs (event management, budgeting, public relations); objective and effective procedures for evaluation/selection of personnel; periodic program reviews.

602 MOTOR BEHAVIOR APPLIED TO SPORTS 3 credits
Coaching education principles to motor development and motor skill learning. Focus on effective practices for learning and advanced skills teaching for coaches.

603 TACTICS AND STRATEGIES IN THE SCIENCE OF COACHING 3 credits
Course focuses on coaching and teaching the skills, tactics, and strategies in individual and multi-sports. May be taught online, web-enhanced, or face-to-face.

604 CURRENT ISSUES IN SPORT AND PHYSICAL EDUCATION 3 credits
This course represents a planned experience in interpretation and articulation of information within the context of selected aspects of current issues in sport.

605 PHYSIOLOGY OF MUSCULAR ACTIVITY AND EXERCISE 3 credits
Functions of body systems and physiologic effects of exercise. Laboratory experiences, lecture, discussions.

606 STATISTICS: QUANTITATIVE AND QUALITATIVE METHODS 3 credits
Prerequisite: 5100:640. Research methods/designs, statistics (application and interpretation), use of computers and appropriate software as they relate to various disciplines in the area of physical activity.

609 MOTIVATIONAL ASPECTS OF PHYSICAL ACTIVITY 3 credits
Analysis of factors influencing motivation of motor performance with emphasis on competition, audience effects, aggression.

610 MASTERING TEACHING AND COACHING 3 credits
To learn about becoming master teachers and coaches, students will apply effective teaching skills, focus on context, and reflect on the teaching/coaching process. Additional 10 clinical/hour required.

611 RESEARCH AND ANALYSIS OF EFFECTIVE TEACHING IN PHYSICAL EDUCATION 3 credits
For the new professional, this course concentrates on research and analysis of skills and process competencies needed to become an effective teacher of physical education.

612 GENERAL MEDICAL ASPECTS 4 credits
Covers various topics related to sports medicine and general medical conditions. Students will gain perspectives and exposure to a variety of allied health care professionals.

616 GENERAL TOPICS IN EXERCISE PHYSIOLOGY 3 credits
Class teaches students to be critical readers of the literature. Readings in several areas in exercise science will be done. Exact areas of concentration with some guidance from the instructor.

620 LABORATORY INSTRUMENTATION TECHNIQUES IN EXERCISE PHYSIOLOGY 3 credits
This is a course designed to provide hands-on laboratory experiences for students in the area of exercise science.
OUTDOOR EDUCATION 5560:

550 APPLICATION OF OUTDOOR EDUCATION TO THE SCHOOL CURRICULUM 4 credits Provides knowledge, skills and techniques useful in application of outdoor education to school curriculum.

552 RESOURCES AND RESOURCE MANAGEMENT FOR THE TEACHING OF OUTDOOR EDUCATION 4 credits Resources and instructional techniques which are applicable to outdoor education; and in-depth study of methods and designs, unique to the process of teaching.

554 RESIDENT OUTDOOR EDUCATION 2 credits Focus on helping physical education teachers use critical thinking to review present and past organizational techniques relevant to outdoor education programs. Extended experience in outdoor settings required.

556 OUTDOOR PURSUITS 4 credits Investigation and participation in practical experiences in outdoor pursuits.

600 OUTDOOR EDUCATION: RURAL INFLUENCES 3 credits Prerequisite: 550 or 552. Utilization of resources of rural area as a learning/teaching environment. Content and methodology appropriate for teaching school-age children in rural setting.

605 OUTDOOR EDUCATION: SPECIAL TOPICS 2-4 credits (May be repeated with change in topic) Prerequisite: permission of instructor. Group and individual study of special topics of contemporary concern in outdoor education.

690 PRACTICUM IN OUTDOOR EDUCATION 2-4 credits (60-90 field hours) Prerequisite: 550, 552 and permission of advisor. Supervised practical experience with existing outdoor education programs. In conjunction with practical work student meets regularly with advisor.

692 FIELD EXPERIENCE: MASTER’S 1-2 credits (60-90 field hours) Prerequisite: permission of advisor. Prerequisite: participation and documentation of practical professional experience related to outdoor education.

697 INDEPENDENT STUDY 1-3 credits (70-90 field hours) Prerequisite: permission of advisor. In-depth analysis of current practices or problems related to outdoor education. Documentation of study required.

698 MASTER’S PROBLEM 1-2 credits Prerequisite: permission of advisor. Intensive research study related to a problem in outdoor education or related discipline.

699 MASTER’S THESIS 4-6 credits An original composition demonstrating independent scholarship in a discipline related to outdoor education.

HEALTH EDUCATION 5570:

520 COMMUNITY HEALTH 2 credits Study of current public health problems. Organization and administration of various agencies and their roles in the solution of community health problems.

521 COMPREHENSIVE SCHOOL HEALTH 4 credits Prerequisite: permission to Graduate School. This course explains and presents comprehensive school health curricula for K-12. The components of a comprehensive school health program are presented, instruction, services, and the environment.

532 METHODS AND MATERIALS OF HEALTH EDUCATION 3 credits Prerequisite: permission of instructor. Planning, organization, use of instructional resources and delivery of health education content and teaching processes (pre-K-12).

560 PRACTICUM IN HEALTH EDUCATION 2-6 credits Prerequisite: permission of instructor. The practicum in Health Education is an on-site participation in a community health organization, agency, or resource.

COUNSELING 5600:

515 MENTAL ILLNESS AND MEDIA 2 credits Mental illness is often portrayed negatively in the media. This course focuses on mental illness, stigma, and how movies portray specific mental disorders.

550 COUNSELING PROBLEMS RELATED TO LIFE-THREATENING ILLNESS AND DEATH 3 credits Prerequisite: permission. Consideration of the global issues, current research, coping behavior, support systems and family and individual needs in regard to life-threatening situations.

580 WORKSHOP 3 credits Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.

600 PROFESSIONAL ORIENTATION AND ETHICS 2 credits Addresses professional orientation and ethical standards in the counseling professions as well as an introduction to Department of Counseling programs and missions.

601 RESEARCH AND PROGRAM EVALUATION IN COUNSELING 3 credits Course presents research methods and statistics, understanding and conducting counseling research, and program assessment and evaluation knowledge.

610 COUNSELING SKILLS FOR TEACHERS 3 credits Prerequisite: 631 or 633 or permission. The study and practice of selected counseling techniques that can be applied by teachers in working with students, parents and colleagues.

620 ISSUES IN SEXUALITY FOR COUNSELORS 3 credits A seminar covering, in addition to changing current topics, sexuality across the lifespan, diversity and sexual orientation, and assessment.

621 COUNSELING YOUTH AT RISK 3 credits This course is designed to prepare counselors and other helping professionals to work with at-risk children and adolescents in school and community settings.

622 INTRODUCTION TO PLAY THERAPY 3 credits Prerequisites: enrollment in a master’s or doctoral program in counseling or related field, or special nondegree students (i.e., professional counselor). This course is designed to give students an introduction to play therapy from a child-centered perspective. Students will develop competencies in child-centered play therapy.

623 MARRIAGE AND FAMILY COUNSELING/THERAPY ETHICS AND PROFESSIONAL IDENTITY 3 credits This course is designed to help students learn about marriage and family counseling/therapy as a distinct profession and about it corresponding ethical codes.

631 ELEMENTARY/SECONDARY SCHOOL COUNSELING 3 credits Introductory class; examines elementary and secondary school counseling practices.

635 INTRODUCTION TO CLINICAL COUNSELING 2 credits Overview of clinical counseling identity, philosophy, roles, work settings, laws, advocacy, and related professional duties.

637 COLLEGE ADMISSION COUNSELING I 3 credits Through readings, websites, class activities, discussion, and experiential projects students will learn the fundamental skills needed to assist counselors in their college admission processes.

639 COLLEGE ADMISSION COUNSELING II 3 credits Prerequisite: 636. Students will continue to enhance their knowledge in guiding students through the college admission process through extensive field work at surrounding college campus locations.

640 COUNSELING ADOLESCENTS 3 credits Prerequisite: graduate student in counseling or related field. The examination of the physical, cognitive, emotional, and social developmental processes of the adolescent as these affect learning performance in a diverse population will be addressed.

643 COUNSELING THEORY AND PRACTICE 3 credits Examination of major counseling systems including client-centered, behavioral and existential theories. Philosophical and theoretical dimension stressed.

645 TESTS AND APPRAISAL IN COUNSELING 3 credits Prerequisites: 690:660, 690:661. Overview of the nature of tests and appraisal in counseling including reliability, validity, test construction and selection, administration, scoring, and basic interpretation of test scores.

646 MULTICULTURAL COUNSELING 3 credits An examination of multicultural counseling theory and research necessary to work with culturally diverse people.

647 CAREER DEVELOPMENT AND COUNSELING ACROSS THE LIFE-SPAN 3 credits Overview of career development and choice over the life-span. Personal, family, and societal characteristics that affect choice, career choice, and implementation are discussed.

648 INDIVIDUAL AND FAMILY DEVELOPMENT ACROSS THE LIFESPAN 3 credits An introduction of individual and family development, human behavior, and theories of learning and personality. Emphasis will be placed on understanding the relationship between the individual and his/her family.

650 FILIAL THERAPY 3 credits Prerequisites: 590 or 622 and graduate student in counseling or related field. This course is designed to train students how to teach parents specific child-centered play therapy skills to use with their children.

651 TECHNIQUES OF COUNSELING 3 credits Prerequisite: 655, 643 (prereq or coreq). Corequisite: 669. Study and practice of selected counseling techniques and skills with emphasis on structuring, listening, leading and establishing a counseling relationship.

653 GROUP COUNSELING 4 credits Prerequisites: 643 or 710, and 651. Knowledge and understanding of theory, research, and techniques necessary for conducting group counseling sessions. An experimental component is included.

654 MARRIAGE AND FAMILY THERAPY: THEORY AND TECHNIQUES 3 credits An overview of the theory and techniques of marital and family therapy, including exposure to the history, terminology and concepts of significant persons in the field.

655 CONSULTANT: COUNSELING 3 credits Prerequisites: 631, 651 or permission. Examination of consultation models with focus on process and product.

656 ORGANIZATION AND ADMINISTRATION OF GUIDANCE SERVICES 3 credits Prerequisites: 631 or 633 or permission. Development of a comprehensive articulated guidance and counseling program.

660 COUNSELING CHILDREN 3 credits Prerequisite: graduate student in counseling or related field. This course is designed as an entry-level course for counselors, school counselors, school psychologists, or other professionals preparing to engage in therapeutic work with children. It is not a class in diagnosis of childhood disorders.

662 PERSONALITY AND ABNORMAL BEHAVIOR 3 credits This course will examine several major theoretical approaches to personality and how they account for abnormal and psychopathological behavior related to clinical practice.

663 DEVELOPMENTAL GUIDANCE AND EMOTIONAL EDUCATION 3 credits An experimental seminar designed for school counselors/teachers to learn developmental guidance strategies for affective education, classroom guidance, deliberate psychological education and developmental counseling.

664 DSM 3 credits This course teaches students practical assessment and diagnostic skills related to using the most recent version of the Diagnostic and Statistical Manual of Mental Disorders.

667 TREATMENT IN CLINICAL COUNSELING 3 credits This course teaches students treatment planning and research-based treatment interventions for preventing and reducing common mental disorders found in the counseling profession.

670 MARRITAL THERAPY 3 credits Prerequisite: 655. In-depth study of theories and interventions which focus on the nature and quality of marital relationships.

679 SYSTEMS THEORY IN FAMILY THERAPY 3 credits Prerequisite: 655. An in-depth exploration of systems theory in family therapy. Major assumptions of systems theory will be examined and the implications for interventions will be explored.

674 PREPRACTICUM IN COUNSELING 2 credits Prerequisites: 643 and 651. Addresses clinical knowledge and skills needed for Practicum, including the counseling process, documentation, supervision, and special topics.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Notes</th>
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<tbody>
<tr>
<td>722</td>
<td>INTRODUCTION TO PLAY THERAPY</td>
<td>3 credits</td>
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<td>716</td>
<td>RESEARCH DESIGN IN COUNSELING II</td>
<td>3 credits</td>
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<td>714</td>
<td>EVALUATION OF MENTAL STATUS</td>
<td>2 credits</td>
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<td>713</td>
<td>PROFESSIONAL, ETHICAL AND LEGAL ISSUES IN COUNSELING PSYCHOLOGY</td>
<td>2 credits</td>
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<tr>
<td>710</td>
<td>THEORIES OF COUNSELING AND PSYCHOTHERAPY</td>
<td>4 credits</td>
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<td>707</td>
<td>SUPERVISION IN COUNSELING PSYCHOLOGY I</td>
<td>2 credits</td>
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<tr>
<td>706</td>
<td>SUPERVISION IN COUNSELING PSYCHOLOGY II</td>
<td>2 credits</td>
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<tr>
<td>785</td>
<td>DOCTORAL INTERNSHIP</td>
<td>5 credits</td>
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<td>540</td>
<td>INDIVIDUALS WITH EXCEPTIONALITIES: EDUCATIONAL AND SOCIETAL ISSUES</td>
<td>3 credits</td>
<td>Prerequisite: Admission to College of Education Teacher Preparation Program or permission of instructor. A survey course covering the identification, developmental characteristics, and intervention strategies for exceptional children and youth across education and community settings (1 field hour).</td>
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<td>552</td>
<td>SPECIAL EDUCATION PROGRAMMING: SECONDARY/TRANSITION</td>
<td>3 credits</td>
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<td>551</td>
<td>SPECIAL EDUCATION PROGRAMMING: MILD/MODERATE I</td>
<td>3 credits</td>
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<td>544</td>
<td>DEVELOPMENTAL CHARACTERISTICS AND IMPLICATIONS</td>
<td>4 credits</td>
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<tr>
<td>547</td>
<td>IDENTIFICATION AND INTERVENTION STRATEGIES</td>
<td>3 credits</td>
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<td>548</td>
<td>INDIVIDUALS WITH MODERATE/INTENSIVE EDUCATIONAL NEEDS: CHARACTERISTICS AND IMPLICATIONS</td>
<td>4 credits</td>
<td>Survey of the etiology, identification, classification, and developmental characteristics of intellectually gifted individuals.</td>
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<td>SPECIAL EDUCATION PROGRAMMING: MILD/MODERATE I</td>
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<td>550</td>
<td>SPECIAL EDUCATION PROGRAMMING: SECONDARY/TRANSITION</td>
<td>3 credits</td>
<td>Study of diagnostic prescriptive service delivery systems designed to accommodate developmental patterns of secondary level students with exceptionalities (20 field hours).</td>
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<td>553</td>
<td>SPECIAL EDUCATION PROGRAMMING: MODERATE/INTENSIVE</td>
<td>4 credits</td>
<td>Development of the programming strategies including assessment, inter/transdiagnostic models, family involvement, IFSP/IEP/IP development, instructional practices based upon legal/ethical principles for individuals with moderate/intensive educational needs (20 field hours).</td>
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<td>554</td>
<td>SPECIAL EDUCATION PROGRAMMING: MODERATE/INTENSIVE</td>
<td>4 credits</td>
<td>Educational program for providing educational planning and intervention for individuals with moderate to intensive educational needs. Focus is on developing a comprehensive educational program which will facilitate optimum functioning and independence (20 field hours).</td>
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</tbody>
</table>
557 SPECIAL EDUCATION PROGRAMMING: MILD/MODERATE II  4 credits
Special educational implications regarding assessment, teaching strategies, and adaptive materials necessary to meet the needs of school age students with mild/moderate educational needs (20 field hours).

559 COLLABORATION AND CONSULTATION IN SCHOOLS AND COMMUNITY  3 credits
Prerequisites: 540 and 547, or 548, or permission of instructor. Provides professional education to promote consultation and collaboration for students in various special education programs. Additional readings required.

560 FAMILY DYNAMICS AND COMMUNICATION IN THE EDUCATIONAL PROCESS  3 credits
A detailed study of family dynamics and communication between the family and the education system.

561 SPECIAL EDUCATION PROGRAMMING: EARLY CHILDHOOD MILD/INTENSIVE  3 credits
Prerequisites: 540 and 548. Developmental patterns of young children with moderate/intensive needs (ages 3-8) and developmentally appropriate practices in programming and adaptations (10 field hours).

563 ASSESSMENT IN SPECIAL EDUCATION  3 credits
Prepares student to select, administer and interpret formal and informal assessment procedures and use resulting data in planning educational programs for exceptional individuals.

566 ASSESSMENT AND EVALUATION IN EARLY CHILDHOOD SPECIAL EDUCATION  3 credits
Prerequisites: 440/450:440/546. The assessment of children (three to eight) and their environment who are at risk for disabilities or currently in special education.

567 MANAGEMENT STRATEGIES IN SPECIAL EDUCATION  3 credits
Continues the development of application strategies with a variety of behavior management models for mediation of behaviors with exceptional individuals.

568 ADVANCED BEHAVIOR MANAGEMENT  3 credits
Prerequisites: 567 and other techniques for remediation of problematic behavior. Establishing effective repertoires and evaluating research relevant to classroom management will be covered. Behavioral theory will be stressed.

570 CLINICAL PRACTICUM IN SPECIAL EDUCATION  3 credits
Provides student teaching experience for students in the areas of assessment, programming, planning, instructional planning and presentation, classroom management, adaptations, and collaboration with parents and other educational professionals.

579 SEMINAR: INVITATIONAL STUDIES IN SPECIAL EDUCATION  1-2 credits
(May be repeated for a total of four credits) Topical study of a variety of special education. An in-depth examination of current critical issues in special education will be included in the study of significant educational and curricular issues.

600 SPECIAL EDUCATION CURRICULUM PLANNING  3 credits
Focuses on planning in an area of special education. Study of curriculum planning: practices unique to special education classes and services. Appropriate curriculum objectives for selected areas of instruction as well as effective organizational programs examined.

602 SUPERVISION OF INSTRUCTION  3 credits
Study of administration supervisory practices unique to special education classes and services.

604 COLLABORATION AND CONSULTATION SKILLS FOR SPECIAL EDUCATORS  3 credits
A study of collaborative and consultative models of practice. The consultation process with students, parents, and other educational professionals.

607 BEHAVIORAL ASSESSMENT  3 credits
(3 credits; 3 field hours) History, theory, philosophy, legislative mandates, models, strategies, curriculum modifications, methods/materials adaptations which support the inclusion of students with disabilities.

609 PROFESSIONAL ETHICAL ISSUES  3 credits
Focuses on professional ethical issues in special education. The ethical, moral, and legal dimensions of decision making in special education practices.

610 LAW IN SPECIAL EDUCATION  3 credits
Prerequisites: admission to graduate program in special education. An examination of legal requirements and procedures used in conducting assurance services. Includes research component. Master of Taxation students will not be able to take this course.

611 DEMOGRAPHIC AND SOCIAL ISSUES IN SPECIAL EDUCATION  3 credits
Examines the impact of demographic and social issues on the education of exceptional children.

612 SEQUENCING TEXT FOR STUDENTS WITH EXCEPTIONAL NEEDS  3 credits
Focuses on sequencing text for students with exceptional needs. Consideration of individual differences and the specific needs of exceptional learners.

613 SCHOOL-BASED EXTERNSHIP: SCHOOL AUDIOLOGY  11 credits
Directed professional experience under supervision of a licensed and certified audiologist and staff of the School of Human Development. In-depth examination of current critical issues in special education will be included in the study of significant educational and curricular issues.

615 SPECIAL EDUCATION PROGRAMMING: MILD/MODERATE II  4 credits
Thorough study and analysis in depth of an educational problem, field projects in special areas, synthesis of existing knowledge in relationship to a specific topic.

617 SOCIAL PARTNERSHIPS IN SPECIAL EDUCATION  3 credits
Prerequisite: permission of instructor. Overview of behavioral theory and its application focusing upon the role of the school psychologist as an agent of behavior change.

619 CONSULTATION STRATEGIES IN SCHOOL PSYCHOLOGY  3 credits
Prerequisite: permission of instructor. Consultation strategies in the practice of school psychology related to consultant roles and those related to those of a school psychologist.

620 BEHAVIORAL ASSESSMENT  3 credits
Prerequisite: permission of instructor. Consultation strategies in the practice of school psychology related to consultant roles and those related to those of a school psychologist.

621 SUPERVISION OF INSTRUCTION  4 credits
Prerequisite: permission of instructor. Laboratory experience in psycho-educational study of individual children who have learning problems in school. (Repeat requirement).

623, 1 INTERNSHIP IN SCHOOL PSYCHOLOGY: FALL/Spring  3 credits each
Prerequisite: permission of instructor. Full-time paid work assignment under supervision of a qualified school psychologist for an academic year structured according to provisions of State Department of Education. Addendum to internship.

629 FIELD SEMINAR I: CURRENT PROFESSIONAL ISSUES  3 credits
In special school psychology. Prerequisite: permission of instructor. Consideration of pertinent issues in practice of school psychology with emphasis on research design and field-based concerns of a practicing school psychologist.

632, 1 FIELD SEMINAR II: LOW INCIDENCE/RELATED INQUIRIES  3 credits
Prerequisite: permission of instructor. Consideration of pertinent issues in practice of school psychology with emphasis on field-based concerns of a practicing school psychologist.

634 RESEARCH PROJECT IN SPECIAL AREAS  1-3 credits
Prerequisite: permission of advisor. Study, analysis and reporting of school psychology principle.

636 FIELD EXPERIENCE: MASTER’S  1-3 credits
Prerequisite: permission of instructor. Practical school psychology-related experience in school setting.

637 INDEPENDENT STUDY  1-4 credits
Prerequisite: permission of advisor and supervisor of independent study. Document of specific area of investigation. Nature of the inquiry to be determined by student-supervisor agreement.

638 MASTER’S PROBLEM  2-4 credits
Prerequisite: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in special education.

639 MASTER’S THESIS  4-6 credits
Prerequisite: permission of advisor. In-depth study of a research problem in education. Student must be able to demonstrate critical and analytical skills in dealing with a problem in special education.

640 SPECIAL EDUCATIONAL PROGRAMS 5800: 1-3 credits
Individual work under staff guidance on special education problems. Planning of curriculum units; planning of curriculum units; planning of curriculum units.

Business Administration

ACCOUNTANCY 6200: 3 credits
520 ADVANCED FINANCIAL REPORTING AND ANALYSIS  3 credits
Prerequisites: 622 or equivalent. Examination of accounting theory and financial reporting practices for financial statements, business combinations, partnerships, foreign operations, nonprofit entities, and consolidated statements. Covers U.S. GAAP, IFRS, SEC reporting, and corporate financial reporting policy. Emphasizes professional accounting research. Includes a research component.

530 CONTEMPORARY FEDERAL TAXATION  3 credits
Prerequisite: 621 or equivalent. Examines federal tax law related to partnerships, corporations, trusts and estates; also includes an overview of federal estate and gift tax law. Includes a research component. Master of Taxation students will not be able to take this course to satisfy elective requirements in the Master of Taxation program.

531 BUSINESS ENTITY TAXATION  3 credits
Prerequisite: 530 or permission. Federal income federal tax law related to partnerships, corporations, trusts and estates; also includes an overview of federal estate and gift tax law. Includes a research component. Master of Taxation students will not be able to take this course to satisfy elective requirements in the Master of Taxation program.

540 ASSURANCE SERVICES AND PROFESSIONAL RESPONSIBILITIES  3 credits
Prerequisites: 621 or equivalent. Examines assurance services including external auditing and professional responsibilities. Focuses on standards, professional ethics, and independence requirements and procedures used in conducting assurance services. Includes a research component.

551 INFORMATION SYSTEMS AUDIT AND CONTROL  3 credits
Prerequisites: 540 or permission of instructor. Learn the fundamental concepts and practices of information systems audit and control. Use control objectives and standards by information systems control, audit and security organizations.

555 SPECIAL EDUCATIONAL PROGRAMS 5800: 1-3 credits
Individual work under staff guidance on special education problems. Planning of curriculum units; planning of curriculum units; planning of curriculum units.
554 INFORMATION SYSTEMS SECURITY 3 credits
Prerequisites: 603 or equivalent. Focus on information systems risk and security in distributed business environments, development policies, practices and security for systems of computers and data in business. Includes a research component.

570 GOVERNMENTAL ACCOUNTING 3 credits
Prerequisite: 621 or equivalent. Theory and procedures involved in application of fund accounting, budgeting, control, reporting and various accounting systems to governmental units, educational, medical and other nonprofit organizations. Covers financial reporting for government and not-for-profit entities and GASB standards. Includes a research component.

601 FINANCIAL ACCOUNTING 3 credits
Introductory course for student with no accounting background. Examines accounting principles as applied to financial problems of firm.

603 ACCOUNTING DECISION SUPPORT SYSTEMS 3 credits
Introduction to basic financial statement information; coverage of databases, electronic spreadsheets, and other information technology tools that support accounting and assurance services.

605 FINANCIAL DATA COMMUNICATIONS AND ENTERPRISE INTEGRATION 3 credits
Prerequisites: 6200:601 and 6500:601. In-depth study of contemporary methodologies, technologies, and standards used to integrate business processes and systems, including XML and XBRL.

610 PROCESS ANALYSIS AND COST MANAGEMENT 3 credits
Prerequisites: 601, or 621, or permission of instructor. Investigates management accounting and control systems and the use of accounting information in cost management, risk assessment, decision making, and performance evaluation.

615 ERP AND FINANCIAL DATA COMMUNICATIONS 3 credits
Prerequisite: 603 or equivalent. Risk assessment and mitigation of ERP systems and integration of contemporary data communication technologies such as XML and XBRL into financial applications.

621 CORPORATE ACCOUNTING AND FINANCIAL REPORTING I 3 credits
Prerequisite: 601 or graduate accounting status. An examination of generally accepted accounting principles in theory and applications, as well as financial statement preparation. Not open to students who have taken Intermediate Accounting I.

622 CORPORATE ACCOUNTING AND FINANCIAL REPORTING II 3 credits
Prerequisite: 621 or permission of instructor. A continuation of 6200:621 which examines generally accepted accounting principles in theory and practice, as well as financial statement preparation.

627 FEDERAL TAXATION 3 credits
Survey of federal taxation of entities, tax research, and individual taxation. Tax cases, projects, and problems will be assigned.

628 TAX RESEARCH 3 credits
Prerequisites: Admission to Master of Tax program or special admission. Designed to develop basic research competence involving federal income, estate, and gift tax laws.

629 TAX CRIMES AND FORENSICS 3 credits
Prerequisites: 531 or 627 or equivalent or permission. In-depth study of tax and tax related crimes charged under provisions of the IRC code and titles 18 and 31 of the U.S. code.

631 CORPORATE TAXATION I 3 credits
Prerequisite: Admission to Master of Tax program or special permission. Detailed examination of tax problems of corporations and their shareholders. Formation, distribution, redemption, and termination.

632 TAXATION OF TRANSACTIONS IN PROPERTY 3 credits
Prerequisite: Admission to Master of Tax program or special permission. Explores federal tax implications of gains and losses derived from sales, exchanges and other dispositions of property.

633 ESTATE AND GIFT TAXATION 3 credits
Prerequisite: Admission to Master of Tax program or special permission. Examines provisions of federal estate and gift tax laws and tax consequences of testamentary and lifetime transfers.

637 CONTEMPORARY ACCOUNTING ISSUES 3 credits
Prerequisites: 621 or permission of instructor. Critical examination of contemporary issues and trends in accounting, including professional ethics and corporate social responsibility, standard setting process, regulatory compliance, and international issues.

640 ADVANCED AUDITING 3 credits
Prerequisite: 640 or equivalent or permission. Conceptual foundations and current research on professional and internal auditing. Includes government regulation and litigation, standards, computer systems and as well as current and prospective developments in auditing.

641 TAXATION OF PARTNERSHIPS 3 credits
Prerequisite: Admission to Master of Tax program or special permission. Examines intensive analysis of subchapters K and S of Internal Revenue Code and uses of partnerships for tax planning.

642 CORPORATE TAXATION II 3 credits
Prerequisite: 631 or special permission. Focuses on corporate reorganization; covers A, B, C, D, and E reorganizations, corporate split-offs and spin-offs, carryovers of tax attributes; and limitations on carryovers.

643 TAX ACCOUNTING 3 credits
Prerequisite: Admission to Master of Tax program or special permission. Attention focused on timing of income and expenses for individuals, businesses and its relation to tax planning.

644 INCOME TAXATION OF DECEDENTS, ESTATES AND TRUSTS 3 credits
Prerequisite: 633. An in-depth examination of the decedent’s last income tax return with the analysis of income taxation of trusts and estates and their creators, fiduciaries and beneficiaries.

645 ADVANCED INDIVIDUAL TAXATION 3 credits
Prerequisite: Admission to Master of Tax program or special permission. In-depth study of some of the more involved areas of individual income taxation.

646 DISCONSOLIDATED TAX RETURNS 3 credits
Prerequisite: 631. Intensive study of tax provisions concerning use of consolidated tax returns.

647 QUALIFIED PENSIONS AND PROFIT SHARING 3 credits
Prerequisite: Admission to Master of Tax program or special permission. Nature, purpose and operation of various forms of deferred compensation examined with much emphasis on pension and profit-sharing plans.

648 TAX PRACTICE AND PROCEDURE 3 credits
Prerequisite: Admission to Master of Tax program or special permission. In-depth study of administration and procedures of Internal Revenue Service and responsibilities of tax practitioners.

650 ESTATE PLANNING 3 credits
Prerequisite: 633. Considers entire process of planning the estate with due regard for disposition of property, tax minimization, liquidity requirements and administrative costs.

651 INTERNATIONAL TAXATION 3 credits
Prerequisite: 631 or special permission. Examines United States taxation of foreign income of domestic corporations, citizens and residents, as well as United States income of nonresident aliens and foreign corporations.

652 TAX-EXEMPT ORGANIZATIONS 3 credits
Prerequisite: Admission to Master of Tax program or special permission. Analysis of tax aspect of tax-exempt organizations, including nature of and limitations of its exemption.

654 INDEPENDENT STUDY IN TAXATION 1-3 credits
Prerequisite: permission of instructor. Intensive study of particular topic or limited number of topics not otherwise offered in curriculum. (May be repeated for a total of six credits.)

655 ADVANCED INFORMATION SYSTEMS 3 credits
Prerequisites: 603 or equivalent and 693. Advanced study of accounting information system theory, elements, principles, design and implementation. Practical data processing and networks to control flow of information.

656 ENTERPRISE RISK ASSESSMENT AND ASSURANCE 3 credits
Prerequisite: 540 or equivalent. Comprehensive accounting and assurance project and a project management module completed in the final semester of the MSA program.

657 5 CORP TAXATION 3 credits
Prerequisite: 631 or special permission. This course involves an in-depth study of Subchapters K of the Internal Revenue Code.

670 CORPORATE PERFORMANCE EVALUATION AND CONTROL SYSTEMS 3 credits
Prerequisite: 630. Investigation of the role of financial information systems in developing strategy, planning, measuring results, and motivating managers to define and pursue organizational goals and objectives.

680 INTERNATIONAL ACCOUNTING 3 credits
Prerequisite: 610. Examination of accounting theory and practice from international perspective with emphasis on multinational investment, business and auditing activities and reporting problems.

693 SELECTED TOPICS IN TAXATION 3 credits
Prerequisites: 631 or special permission. Provides study in contemporary issues in taxation that are not covered in current courses.

695 GRADUATE INTERNSHIP IN ACCOUNTING 3 credits
Prerequisites: 610, and 621. This course provides an opportunity for graduate accounting students to apply classroom instruction to practice problems in a professional working environment.

697 INDEPENDENT STUDY IN ACCOUNTING 1-3 credits
(May be repeated for a total of six credits) Focus on special topics of study and research in accounting on an independent basis.

FINANCE

531 INTERNATIONAL BANKING 3 credits
Prerequisite: 602 or permission. Examination of recent trends in the expansion of international banking activities and associated revenue maximizing strategies.

531 INTERNATIONAL BUSINESS FINANCE 3 credits
Prerequisite: 602 or equivalent. A study of international financial markets with an emphasis on the decision making processes within a rapidly changing but regulated operating environment.

569 INVESTMENT ANALYSIS 3 credits
Prerequisites: 602 and equivalent. Study of the economic and market forces that influence security prices. Techniques of analysis used in evaluating limited income and equity securities.

570 TECHNIQUES OF FINANCIAL MODELING 3 credits
Prerequisites: 3250:600 and 6400:602. Current techniques and methods of financial analysis are examined, including the use of financial models for short and long run profitability decisions.

571 GOVERNMENT AND BUSINESS 3 credits
Public policy with regard to business institutions and issues are considered from an economic, legal, ethical, political framework.

572 STRATEGIC FINANCIAL DECISION MAKING 3 credits
Prerequisite: 602. Examination of role of financial decision makers as strategic contributors to other business units/functions with integrative risk management as a unifying theme.

578 CAPITAL BUDGETING 3 credits
Prerequisite: 602 or equivalent. Attempt to integrate various theories of capital budgeting into comprehensive conceptual scheme. Theoretical concepts and practical applications blended for better understanding of capital problems.

590 SELECTED TOPICS IN FINANCIAL MANAGEMENT 3 credits
(May be repeated for a total of six credits) Focus on special topics of study and research in finance on an independent basis.

MANAGEMENT

520 MANAGEMENT OF DATA NETWORKS 3 credits
Prerequisites: 601. Principles of the design and management of data networks for business communications.
3 credits
Prerequisite: Permission of instructor. Students develop new products and work with entrepren-
eres in local and international business plan competitions.

620 E-BUSINESS FOUNDATIONS
3 credits
Provides an understanding of the foundation of Electronic Business focusing on business and
application issues.

622 E-BUSINESS TECHNOLOGIES
3 credits
Prerequisite: 602 or 620. This course provides a foundation in internet related technologies for
serving globally managing an e-business. Students will be required to design and implement a
functional e-business prototype.

640 INFORMATION SYSTEMS AND IT GOVERNANCE
3 credits
Prerequisites: 601. Covers issues, strategies, tactics for managing organizational use of and
information technology and systems. Includes strategic alignment, project management,
security, application systems, and emerging technologies.

641 BUSINESS DATABASE SYSTEMS
3 credits
Prerequisite: 601. Introduction to issues underlying the analysis, design, implementation, and
management of business databases.

643 ANALYSIS AND DESIGN OF BUSINESS SYSTEMS
3 credits
Prerequisite: 601. A hands-on treatment of the methods used to develop different types of
business information systems.

644 KNOWLEDGE MANAGEMENT AND BUSINESS INTELLIGENCE
3 credits
Prerequisite: 601. Explores the technologies of Business Intelligence (data warehouses, data
mining, portals) and how organizations successfully manage the creation, sharing, transfer,
and exploitation of knowledge.

646 SOFTWARE DEVELOPMENT AND QUALITY ASSURANCE
3 credits
Prerequisites: 601. Introduction to software development and quality assurance. Stu-
dents will work on projects with an emphasis on implementation of business processes.

647 ENTERPRISE SYSTEMS IMPLEMENTATION
3 credits
Prerequisite: 602. The configuration and implementation of Enterprise Systems to support the
functions in the performance of business processes.

648 MANAGEMENT OF TELECOMMUNICATIONS
3 credits
Prerequisite: 602 or 620. An introduction to the use and management of telecommunica-
tions resources to support the activities of the organization.

650 MANAGEMENT OF RESOURCES FOR MANAGERS
3 credits
Prerequisite: 602. A broad survey of the fundamental principles, research findings and prac-
tices related to the acquisition, development, maintenance and effective utilization of a busi-
ness's human resources.

651 MANAGEMENT OF ORGANIZATIONAL TRANSFORMATION
3 credits
Prerequisite: 652. A comprehensive study of innovations in organizations designed to increase
market share and productivity through changes in human management.

652 MANAGING PEOPLE IN ORGANIZATIONS
3 credits
Introduction to the employee issues that managers face in organizations. The aspects of orga-
nizational behavior that influence performance and issues related to managing human
resources will be examined.

653 ORGANIZATIONAL THEORY
3 credits
Prerequisite: 600. Examines the structure, design and overall effectiveness of a business
organization from a macro-perspective.

654 MANAGEMENT OF ORGANIZATIONAL CONFLICT
3 credits
Prerequisite: 600 or equivalent. Course emphasizes ensuring that the organization benefits
from inevitable conflicts that occur and provides skills in diagnosis, negotiation, and build-
ing trust and cooperative working relationships in organizations.

655 COMPENSATION AND PERFORMANCE MANAGEMENT
3 credits
Prerequisite: 600 or equivalent. The development and analysis of systems of pay, benefits,
and rewards in business organizations with special attention placed on performance evaluation
methods and productivity enhancement.

656 MANAGEMENT OF GLOBAL SUPPLY CHAIN AND OPERATIONS
3 credits
Prerequisite: 600 or equivalent or permission. Study and explore the elements and issues related
to globalization of supply chain, production, and service operations.

657 THE LEADERSHIP ROLE IN ORGANIZATIONS
3 credits
Prerequisite: 652. Analysis and development of leadership theory and thought. Identification
of leaders in both formal and informal organizations. Training and development methods of
leadership are examined. Individual and group leadership field study assignments.

658 MANAGING A GLOBAL WORKFORCE
3 credits
Prerequisites: 652. The formulation, design and implementation of human resource practices
directed at creating competitive cost advantages for business firms operating in domestic and/or
international markets.

659 INTERNATIONAL HUMAN RESOURCE MANAGEMENT
3 credits
Prerequisite: 600. A survey course focused on the identification, analysis, and resolution of
human resource problems in business firms with global operations.

660 STAFFING AND EMPLOYMENT Regulation
3 credits
Prerequisite: 600 or equivalent. Design and implementation of staffing practices and systems
for businesses with an emphasis on the implications of federal regulations on the staffing func-
tion.

662 SUPPLY CHAIN ANALYSIS
3 credits
Prerequisite: 675. Application of quantitative models in the analysis and design of systems in
the supply chain and in manufacturing and service operations environments.

663 DATA ANALYSIS FOR MANAGEMENT
3 credits
Prerequisite: 601 or equivalent. Design, evaluation and interpretation of research in business
and organizations. Integrates quantitative and behavioral concepts and processes encour-
aged by business and organizational decision making.

665 MANAGEMENT OF TECHNOLOGY
3 credits
Survey of the principles and management practices of technology-driven organizations are dis-
cussed with concepts, models and case studies for managers of technology intensive opera-
tions.

667 POLYMER MANAGEMENT DECISIONS
3 credits
Introduces major polymer concepts, production processes, and uses of polymeric materials in
an easy-to- comprehend interdisciplinary industrial instructional. Industrial cases studies help inte-
grate enterprise-wide innovation and technology management related decisions.

670 MANAGEMENT OF SUPPLY CHAINS AND OPERATIONS
3 credits
Prerequisite: 601. An overview of the issues directly related to the management and supply
chains and operations at the strategic, tactical, and operational levels of the organization.

673 QUALITY AND PRODUCTIVITY TECHNIQUES
3 credits
Prerequisite: 601. Introduces strategies for improving productivity and quality, including
statistical process control (SPC), material requirements planning (MRP), just-in-time (JIT)
inventory control and management of the program.

675 GLOBAL SUPPLY CHAIN MANAGEMENT
3 credits
Prerequisite: Graduate standing. Focuses on the integration of activities and information/mate-
rials flows across multiple organizations that comprise the supply chain, and the relationships
among those organizations.

677 SUPPLY CHAIN SOURCING
Prerequisite: 675. Introduces the student to fundamental sourcing concepts as well as the
scope of responsibility and critical roles of the sourcing function within the principal organiza-
tion in a supply chain network.

678 PROJECT MANAGEMENT
3 credits
Prerequisite: Graduate standing. Provides working knowledge of tools and methods available
to project managers including computerized analysis of network models to aid in the planning
and control functions.

680 SUPPLY CHAIN LOGISTICS MANAGEMENT
3 credits
Prerequisite: 670 or 675. Emphasizes the importance of planning and operation of supply
chain systems that are impacted by transportation, inventory and warehousing, with particu-
lar emphasis on international logistics, regulations and documentation.

681 INTRODUCTION TO HEALTH-CARE MANAGEMENT
3 credits
Prerequisite: graduate standing. Introductory course for health professionals covering princi-
ples and concepts of management applied to health services organizations.

682 HEALTH SERVICES OPERATIONS MANAGEMENT
3 credits
Prerequisites: 580 or 600 or equivalent or permission of instructor. Application of operations
and systems analysis to health services organizations.

683 HEALTH SERVICES SYSTEMS MANAGEMENT
3 credits
Prerequisite: Graduate standing. Study of health services organizations, collaborative delivery
systems, the roles of third parties (e.g. managed care payers and government policy in health
care. Seminar format: major research paper required.

685 INNOVATION AND DESIGN
3 credits
Brings together students with different academic backgrounds to work in teams and identify
and develop new medical technologies and solutions to healthcare problems.

686 HEALTH SERVICES RESEARCH PROJECT
3 credits
Prerequisites: 663 or permission of instructor. In-depth field study in health services adminis-
tration with applications of research and analysis skills. Course requires review of literature and
a major research paper.

688 INDEPENDENT STUDY IN HEALTH SERVICES ADMINISTRATION
1-3 credits
May be repeated for more than three credits. Prerequisites: 580 or 600 or equivalent or
permission of instructor. Independent study and research of a special topic of interest in health
services administration (e.g., research methodology), chosen by the student in consultation with
and under the supervision of the instructor.

690 SELECTED TOPICS IN MANAGEMENT
3 credits
Prerequisite: permission of instructor. Special topics in management focusing on the use of theor-
etical and practical knowledge acquired in core business courses. Students analyze, evaluate, and
formulate organization objectives and strategies within domestic and international environments.

697 INDEPENDENT STUDY IN MANAGEMENT
1-3 credits
May (be repeated for a total of six credits) Focus on special topics of study and research in
management on an independent basis.

MARKETING

575 BUSINESS NEGOTIATIONS
3 credits
Examines business negotiation principles and practices and builds skills in the process of
negotiating business agreements within a global environment.

600 MARKETING CONCEPTS
3 credits
Introduces students to the buyer behavior, environmental influences, target marketing,
product development, distribution, promotion, and pricing for business firms and nonprofit
organizations within a global environment.

615 CROSS-MEDIA DATABASE MARKETING
3 credits
Prerequisite: 600. Students will work in the Xerox XMPie Cross Media Laboratory to develop
customized acquisition and engagement campaigns, and create interactive cross-media, variable data
one-to-one marketing campaigns in print, online, dynamic video content, e-mail, and mobile
communications. The course will focus on real-world applications and client projects. This course
satisfies the Action Learning requirement for the MBA program.

620 STRATEGIC MARKETING
3 credits
Review of Marketing terminology and concepts. Managerial assessments of opportunities,
threats are explored as they relate to the development and management of appropriate strategic mar-
teting plans and their tactical implementation.

625 BRAND MANAGEMENT
3 credits
Prerequisite: 600. Application of the development, management and evolution of brands in the
creation of competitive advantage. Required field project satisfies the requirement for action-
based learning.
Health Professions

SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY

530 ASPECTS OF NORMAL LANGUAGE DEVELOPMENT

540 AUGMENTATIVE COMMUNICATION

545 MULTICULTURAL CONSIDERATIONS FOR AUDIOLOGISTS AND SPEECH-LANGUAGE PATHOLOGISTS

552 CHILD, ILLNESS AND LOSS

553 FACILITATING SUPPORT GROUPS

554 MEDICAL INHIBITIONS IN THE HOSPITAL

555 PRACTICUM EXPERIENCE IN A CHILD LIFE PROGRAM

561 ORGANIZATION AND ADMINISTRATION: PUBLIC SCHOOL

562 ARTICULATION

563 SUPPORT SYSTEMS FOR INDIVIDUALS AND FAMILIES

564 NEUROGENIC SPEECH AND LANGUAGE DISORDERS

565 DEVELOPMENTAL DISABILITIES

566 VOICE AND CLEFT PALATE

567 STUTTERING: THEORIES AND THERAPIES

568 TOPICS IN DIFFERENTIAL DIAGNOSIS OF SPEECH AND LANGUAGE DISORDERS

569 CLINICAL ISSUES IN CHILD LANGUAGE

570 ACQUIRED BRAIN INJURY

571 DYSPHAGIA

572 PROFESSIONAL ISSUES

SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY

530 ASTRAS OF NORMAL LANGUAGE DEVELOPMENT

540 AUGMENTATIVE COMMUNICATION

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568 TOPICS IN DIFFERENTIAL DIAGNOSIS OF SPEECH AND LANGUAGE DISORDERS

569 CLINICAL ISSUES IN CHILD LANGUAGE

570 ACQUIRED BRAIN INJURY

571 DYSPHAGIA

572 PROFESSIONAL ISSUES
639 AUDIOLOGY FOR THE SPEECH-LANGUAGE PATHOLOGIST 3 credits
Prerequisite: Prerequisite: Full admission to the SLP program or permission of the school director. Focus on advanced information on hearing loss and its contribution to communication problems with special orientation toward the speech-language pathologist.

650 ADVANCED CLINICAL PRACTICUM: SPEECH-LANGUAGE PATHOLOGY 1-6 credits
Prerequisite: Full admission to the SLP program or permission of the school director. May be repeated for credit. Required clinical practicum in evaluation and treatment of speech and language disorders; preparation of written reports.

690 INTERNSHIP: ADVANCED PROGRAMMING IN CHILD LIFE 1 credit
Prerequisite: In conjunction with School-Based Internship in Audiology or Speech-Language Pathology. Review and discussion of issues raised during internship experience.

693 SCHOOL-BASED EXTERNAL SEMINAR 1 credit
Prerequisite: Full admission to the SLP program or permission of the school director. Field experience in a specialized field requiring clinical experience involving children from 3-17 years of age.

695 EXTERNAL SEMINAR 1 credit
Prerequisite: Full admission to the SLP program or permission of the school director. Corequisite: 693. Field experience in a specialized field requiring clinical experience involving children from 3-17 years of age.

696 SPECIAL PROBLEMS: SPEECH PATHOLOGY AND/OR AUDIOLOGY 1-3 credits
Prerequisite: Full admission to the SLP program or permission of the school director. (May be repeated for total of six credits.) Guided research in selected topics in speech pathology, audiologic, or language disorders.

699 MASTER'S THESIS 1-6 credits
Prerequisite: Admission to the Au.D. program or permission of instructor. Focus on research which will result in a thesis. Repeatable up to six credits.

701 BASIC AND APPLIED ACOUSTICS FOR AUDIOLOGY 4 credits
Prerequisite: Full admission to the Au.D. program or permission of instructor. Study of physical acoustics, basic electricity and electronics, as well as principles, methodology, calibration and maintenance of audiological equipment (includes 1 credit hour lab).

702 ANATOMY AND PHYSIOLOGY OF THE PERIPHERAL AUDITORY AND VESTIBULAR SYSTEMS 3 credits
Prerequisite: Full admission to the Au.D. program or permission of instructor. A study of the anatomy, physiology, and physics of the auditory and vestibular systems.

703 ACOUSTIC PHONETICS 3 credits
Prerequisite: Admission to the Au.D. program or permission of instructor. Study of the acoustic, linguistic, and psychological aspects of speech perception (includes 1 credit hour lab).

704 CRITICAL ANALYSIS OF RESEARCH IN AUDIOLOGY 4 credits
Prerequisite: Full admission to the Au.D. program or permission of instructor. General introduction to the research process with an emphasis on acquiring a reading knowledge of research and an ability to evaluate research.

705 AUDITORY DISORDERS 2 credits
Prerequisite: Full admission to the Au.D. program or permission of instructor. Study of conditions/diseases that may impair the auditory system.

706 ANATOMY AND PHYSIOLOGY UNDERLYING NEURO-OTOLGY 4 credits
Prerequisite: Full admission to the Au.D. program or permission of instructor. Study of the structures and functions of the ear, including the anatomy and physiology of the auditory and vestibular systems (includes 1 credit hour lab).

708 PSYCHOPHYSICS 3 credits
Prerequisite: Full admission to the Au.D. program or permission of instructor. A study of the principles, procedures, and research of psychophysical methods in the field of auditory research.

717 ACOUSTIC ANALYSIS 4 credits
Prerequisite: Admission to the Au.D. program or permission of instructor. Features delivery of audio diagnostic services designed to access the school environment for children ages 4-21.

734 MUSICAL INSTRUMENTS AND THE HUMAN LOUDNESS PERCEPTION 3 credits
Prerequisite: Full admission to the Au.D. program or permission of instructor. Study of the psychological, physiological, and biophysical bases of loudness perception.

737 COMMUNICATION SKILLS FOR AUDILOGISTS 3 credits
Prerequisite: Full admission to the Au.D. program or permission of instructor. Features delivery of audio diagnostic services designed to access the school environment for children ages 4-21.

745 CLERKSHIP II 1 credit
Prerequisite: Admission to the Au.D. program or permission of instructor. Field experience in the Department of Audiology requiring the independent performance of diagnostic audiologic and rehabilitative services. Repeatable up to six credits.

749 GRADUATE AUDIOLOGIST III 3 credits
Prerequisite: Admission to the Au.D. program or permission of instructor. Supervised clinical practicum in evaluation and treatment of speech and language impairments. Repeatable up to 24 credits.

750 PRACTICE MANAGEMENT IN AUDIOLOGY 3 credits
Prerequisite: Admission to the Au.D. program or permission of instructor. Corequisite: 750. Supervised clinical practicum in the management of patients with hearing loss, including diagnosis, audiologic rehabilitation, and vestibular assessment and rehabilitation. Repeatable up to eight credits.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>623</td>
<td>FUNDAMENTALS OF RESEARCH II</td>
<td>3</td>
<td>Prerequisite: 741. Directed observation of clinical practice including audiologic diagnosis and audiologic rehabilitation are required (repeatable for up to 6 credits).</td>
</tr>
<tr>
<td>754</td>
<td>INTERNSHIP II</td>
<td>1</td>
<td>Corequisite: 709 or permission. Clinical practicum in audiology during which students perform discrete tasks under supervision (repeatable for up to 6 credits).</td>
</tr>
<tr>
<td>755</td>
<td>ADVANCED CASE MANAGEMENT I</td>
<td>1</td>
<td>Prerequisite: 743. Supervised clinical practicum in audiology during which students perform discrete tasks under supervision (repeatable for up to 6 credits).</td>
</tr>
<tr>
<td>756</td>
<td>INTERNSHIP II</td>
<td>2</td>
<td>Prerequisites: 744 and permission. Supervised clinical practicum in audiology requiring independent performance of basic audiologic procedures, including hearing aid management and audiologic rehabilitation procedures (repeatable for up to 8 credits).</td>
</tr>
<tr>
<td>757</td>
<td>INTERNSHIP IV</td>
<td>2</td>
<td>Prerequisites: 745 and permission. Supervised clinical practicum in audiology requiring the independent performance of basic audiologic diagnosis, hearing aids, and audiologic rehabilitation procedures (repeatable for up to 6 credits).</td>
</tr>
<tr>
<td>758</td>
<td>IMPLANTABLE TECHNOLOGY</td>
<td>2</td>
<td>Prerequisites: Admission to the Au.D. or permission. Study of cochlear implants in children and adults. Includes equipment, case histories, and a mapping session overview of intrahippocampal stimulation.</td>
</tr>
<tr>
<td>760</td>
<td>HEARING AID FITTING AND SELECTION ACROSS THE LIFESPAN</td>
<td>4</td>
<td>Prerequisite: 713. Examination of the theory and practice of fitting hearing aids across the lifespan. Emphasis on special clinical procedures, research needs, and evolving technology in hearing instruments.</td>
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<tr>
<td>899</td>
<td>DOCTORAL ENROLLMENT/RESIDENCY</td>
<td>3-6</td>
<td>(May be repeated up to 6 credits) Prerequisites: Graduate standing in the Doctor of Audiology program and permission of instructor. Continuous enrollment course to maintain status in Au.D. program.</td>
</tr>
<tr>
<td>759</td>
<td>SOCIAL WORK 7750:</td>
<td>7750</td>
<td>568 ADULT DAY CARE</td>
</tr>
<tr>
<td>580</td>
<td>SPECIAL TOPICS IN SOCIAL WORK AND SOCIAL WELFARE</td>
<td>3-5</td>
<td>Prerequisites: Permission. This course covers theory and policy, settings, issues, interventions, and trends in delivery systems in relation to selected areas of concern. Topics and credits variable.</td>
</tr>
<tr>
<td>597</td>
<td>INDIVIDUAL INVESTIGATIONS IN SOCIAL WORK/SOCIAL WELFARE</td>
<td>3</td>
<td>Prerequisites: permission and prearrangement with instructor. Individual readings, research projects or areas of interest in social welfare theory or institutional operations or in social work practice under guidance of social work faculty member. Preparation of report paper appropriate to nature of topic. For social work major.</td>
</tr>
<tr>
<td>601</td>
<td>FOUNDATION FIELD PRACTICUM</td>
<td>3</td>
<td>Prerequisite: first of two field practicum courses to be taken in the first year of the MSW program. A two-semester, 400 clock hour, supervised internship at a social service agency. Credit/Noncredit. (Offered only Fall Semester.)</td>
</tr>
<tr>
<td>602</td>
<td>FOUNDATION FIELD PRACTICUM</td>
<td>3</td>
<td>Prerequisites: second of two field practicum courses to be taken in the first year of the MSW program. A two-semester, 400 clock hour, supervised internship at a social service agency at a social service agency based on the student’s concentration and specialization. Credit/Noncredit. (Offered only Spring Semester.)</td>
</tr>
<tr>
<td>603</td>
<td>ADVANCED FIELD PRACTICUM</td>
<td>3</td>
<td>Prerequisite: first of two field practicum courses to be taken in the second year of the MSW program. A two-semester, 500 clock hour, supervised internship in a social service agency, based on the student’s concentration and specialization. Credit/Noncredit. (Offered only Fall Semester.)</td>
</tr>
<tr>
<td>604</td>
<td>ADVANCED FIELD PRACTICUM</td>
<td>3</td>
<td>Prerequisites: second of two field practicum courses to be taken in the second year of the MSW program. A two-semester, 500 clock hour, supervised internship in a social service agency, based on the student’s concentration and specialization. Credit/Noncredit. (Offered only Spring Semester.)</td>
</tr>
<tr>
<td>605</td>
<td>SOCIAL WORK PRACTICE WITH SMALL SYSTEMS</td>
<td>3</td>
<td>Prerequisite: graduate status or permission of instructor. Provides the basic knowledge, skills, professional ethics and values necessary for beginning social work practice with small client systems.</td>
</tr>
<tr>
<td>606</td>
<td>SOCIAL WORK PRACTICE WITH LARGE SYSTEMS</td>
<td>3</td>
<td>Prerequisite: 605 or permission of instructor. Provides the basic knowledge, skills, and strategies of social work practice with task groups, organizations and communities.</td>
</tr>
<tr>
<td>607</td>
<td>ADVANCED PRACTICE WITH SMALL SYSTEMS</td>
<td>3</td>
<td>Prerequisite: second level graduate student or permission of instructor. This course focuses on the differential assessment of individuals, families and small groups and the application of a range of theory bases.</td>
</tr>
<tr>
<td>608</td>
<td>ADVANCED PRACTICE WITH SMALL SYSTEMS</td>
<td>3</td>
<td>Prerequisite: 607 or permission of instructor. As a continuation of Advanced Practice I, this course focuses on the development and implementation of intervention strategies with and on behalf of small systems.</td>
</tr>
<tr>
<td>609</td>
<td>DYNAMICS OF RACISM AND DISCRIMINATION</td>
<td>3</td>
<td>Prerequisite: Graduate status or permission of instructor. Provides knowledge of analyzing and understanding the factors leading to and sustaining racism, sexism, homophobia, and the like, at micro and macro levels.</td>
</tr>
<tr>
<td>612</td>
<td>FUNDAMENTALS OF RESEARCH I</td>
<td>3</td>
<td>Prerequisite: graduate status or permission of instructor. This course provides an introduction to the basic scientific inquiry, the research process, and the relationship between research and social practice.</td>
</tr>
<tr>
<td>613</td>
<td>FUNDAMENTALS OF RESEARCH II</td>
<td>3</td>
<td>Prerequisite: Graduate status or permission of instructor. Provides a base for understanding economic systems and analyzing the political framework at federal, state, and local levels and their impact on communities.</td>
</tr>
<tr>
<td>614</td>
<td>SOCIAL WORK PRACTICE WITH GAYS AND LESBIANS</td>
<td>3</td>
<td>Prerequisite: second level graduate status or permission of instructor. This course provides an introduction to the gay and lesbian culture and lifestyles, discrimination based on sexual orientation, and intervention strategies appropriate to practice with gays and lesbians.</td>
</tr>
<tr>
<td>615</td>
<td>PSYCHOPHARMACOLOGY AND SOCIAL WORK</td>
<td>3</td>
<td>Prerequisite: second level graduate student or permission of instructor. An examination of the symptoms, theories, and psychosocial aspects of mental illness, and the role of the social worker in the treatment of mental disorders.</td>
</tr>
<tr>
<td>616</td>
<td>DIRECT PRACTICE RESEARCH</td>
<td>3</td>
<td>Prerequisite: second level graduate student or permission of instructor. Provides students with a working knowledge of the methodology of single design and skills to implement an evaluation study of their intervention with clients.</td>
</tr>
<tr>
<td>617</td>
<td>SUPERVISION AND STAFF DEVELOPMENT</td>
<td>3</td>
<td>Prerequisite: second level graduate status or permission of instructor. This course focuses on supervision and managerial roles and functions as they are carried out at different hierarchical levels in human service organizations.</td>
</tr>
<tr>
<td>618</td>
<td>COMMUNITY ORGANIZATION AND PLANNING</td>
<td>3</td>
<td>Prerequisite: Must have completed first year of master’s program. Required for all second year students concentrating on Macro Practice sequence. Prepares students to work in communities and in public and private agencies.</td>
</tr>
<tr>
<td>619</td>
<td>STRATEGIES OF COMMUNITY ORGANIZATION</td>
<td>3</td>
<td>Prerequisite: second level graduate status or permission of instructor. Examines the historical development and application of several community strategies used to identify community problems, and how to organize and empower diverse community groups.</td>
</tr>
<tr>
<td>620</td>
<td>COMMUNITY, ECONOMIC SYSTEMS AND SOCIAL POLICY ANALYSIS</td>
<td>3</td>
<td>Prerequisite: second level graduate student or permission of instructor. This course provides a base for understanding economic systems and analyzing the political framework at federal, state, and local levels and their impact on communities.</td>
</tr>
<tr>
<td>621</td>
<td>PROGRAM EVALUATION</td>
<td>3</td>
<td>Prerequisite: second level graduate student or permission of instructor. This course provides students with the skills and methods of evaluating programs in agencies, including approaches, measurement, design, data collection and analyses employed in program outcome research.</td>
</tr>
<tr>
<td>622</td>
<td>FISCAL MANAGEMENT OF SOCIAL AGENCIES</td>
<td>3</td>
<td>Prerequisite: second level graduate student or permission of instructor. This course concentrates on the financial management of social administration, financial planning and management, principles of economic and fiscal exchange, accountability and fiscal accounting.</td>
</tr>
<tr>
<td>623</td>
<td>AGING AND SOCIAL WORK PRACTICE</td>
<td>3</td>
<td>Prerequisite: second level graduate student or permission of instructor. An examination and evaluation of aging programs and policies, demographic trends and the changing role of social work service providers.</td>
</tr>
<tr>
<td>624</td>
<td>AGING: POLICIES AND PROGRAMS</td>
<td>3</td>
<td>Prerequisite: second level graduate student or permission of instructor. An examination and evaluation of aging programs and policies, demographic trends and the changing role of social work service providers.</td>
</tr>
<tr>
<td>625</td>
<td>SOCIAL WORK PRACTICE: FAMILY AND CHILDREN</td>
<td>3</td>
<td>Prerequisite: second level graduate student or permission of instructor. Examines the major problems encountered by families in the childrearing process and explores intervention strategies and programs to address their needs and strengths.</td>
</tr>
<tr>
<td>626</td>
<td>SOCIAL WELFARE POLICY AND SERVICES: FAMILY AND CHILDREN</td>
<td>3</td>
<td>Prerequisites: second level graduate student or permission of instructor. Examines the federal and state laws, policies, and services governing children and families, including the support and supplemental and substitute systems ofinteger.</td>
</tr>
<tr>
<td>627</td>
<td>ADVANCED PRACTICE AND POLICY IN SUBSTANCE ABUSE</td>
<td>3</td>
<td>Prerequisite: second level graduate student or permission of instructor. This course provides students the knowledge and skill base necessary for managing and practice with people involved in substance abuse, evaluating programs, and preventive work.</td>
</tr>
<tr>
<td>628</td>
<td>SOCIAL WORK VALUES AND ETHICS</td>
<td>3</td>
<td>Prerequisite: Full admission to the MSW program. This elective ethics course focuses on practical or applied ethics. Fundamentals of moral reasoning and ethical decision-making in social work practice are reviewed. Utilized are case materials that illustrate application of normative ethics and standards in the NASW Code of Ethics.</td>
</tr>
<tr>
<td>629</td>
<td>GROUP PRACTICE WAY</td>
<td>3</td>
<td>Prerequisite: Full admission to the MSW program. Examines the fundamental knowledge and skills required for social work practice with groups across multiple client systems. Knowledge of social values and ethics is applied as it relates to all aspects of group work. The dynamics of working with special populations will be emphasized (e.g. the effect of the addictive processes in groups, depression in therapy groups, and group work with children).</td>
</tr>
<tr>
<td>630</td>
<td>SPECIAL TOPICS FOR ADVANCED SOCIAL WORK PRACTICE</td>
<td>3-5</td>
<td>Prerequisite: admission to MSW program or permission of program director. Detailed analysis and study of current practice issues and considerations faced by social work practitioners providing services and interventions at advanced levels.</td>
</tr>
<tr>
<td>631</td>
<td>THEORIES AND PROCEDURES IN ADDICTION STUDIES</td>
<td>3</td>
<td>Prerequisite: Full admission to the MSW program. Explores historical perspective of substance abuse in society, models and theories that describe addiction and the effects of addiction on individuals and families; effects of addiction in individuals; techniques and practices that have positive outcomes in treatment. Includes theory in the context of addiction field.</td>
</tr>
<tr>
<td>632</td>
<td>HEALTH CARE: PLANNING AND POLICY ISSUES</td>
<td>3</td>
<td>Prerequisite: second level graduate student or permission of instructor. This course is designed to orient students to the planning and policy issues in health care, and how social work can interface with health care professionals.</td>
</tr>
<tr>
<td>633</td>
<td>EPIDEMIOLOGICAL ANALYSIS OF HEALTH AND SOCIAL PROBLEMS</td>
<td>3</td>
<td>Prerequisite: second level graduate student or permission of instructor. This course applies the epidemiological method to social work practice, such as treatment groups, making administrative decisions, in planning and evaluation, and doing preventive work.</td>
</tr>
</tbody>
</table>
NUTRITION AND DIETETICS

500 NUTRITION COMMUNICATION AND EDUCATION SKILLS 4 credits
  Prerequisite: Permission of instructor. Theory and development of communication and education skills essential to dietetics practice; interpersonal communication; interviewing; nutrition counseling; education techniques; media, and current technology.

503 ADVANCED FOOD PREPARATION 3 credits
  Prerequisite: permission. Study of advanced techniques of food preparation. Introduction to and practice of preparation of classic and foreign cuisines. Emphasis on individualized experience, skill development and evaluation of procedures and results.

513 FOOD SYSTEMS MANAGEMENT II 3 credits
  Prerequisite: Acceptance into the graduate program or permission of instructor. Focus on advanced concepts in management of dietetic service systems related to achievement of nutritional care goals.

514 FOOD SYSTEMS MANAGEMENT II CLINICAL 3 credits
  Prerequisite: Acceptance into the graduate program. Corequisite: 513. This clinical experiences food services and serves to present in depth the role and responsibility of the Management RD/Food Service Director. Professional competencies are learned, leading to employment as an entry level dietitian.

524 NUTRITION IN THE LIFE CYCLE 3 credits
  Prerequisite: Permission of instructor. Study of the physiological basis for nutritional require- ments; interrelating factors which affect growth, development, maturation and nutritional sta- tus from conception through the elderly years.

526 HUMAN NUTRITION 3 credits
  Prerequisite: Acceptance into the graduate program or permission of instructor. Corequisite: 543. Application of principles of nutrition, metabolism, and assessment. Analysis and interpretation of current literature.

528 NUTRITION IN MEDICAL SCIENCE II 3 credits
  Prerequisite: Acceptance into the graduate program or permission of instructor. Emphasizing nutritional implications of more complex metabolic and pathological conditions as well as nutrition support strategies.

529 NUTRITION IN MEDICAL SCIENCE II CLINICAL 3 credits
  Prerequisite: Admission to CP program. Corequisite: 528. Clinical experience in hospitals; application of principles of nutritional care.

543 NUTRITION ASSESSMENT 3 credits
  Corequisites: 526 or permission. Application of principles of nutrition and assessment. Analysis and interpretation of current literature. Open to dietetics majors only.

544 NUTRITION IN MEDICAL SCIENCE LONG TERM CARE - CLINICAL 2 credits
  Prerequisite: CP graduate students only. Clinical experiences in long term care facilities for application of principles of nutritional care.

570 THE FOOD INDUSTRY: ANALYSIS AND FIELD STUDY 3 credits
  Prerequisite: permission. Role of technology in extending the food supply. Chemical, physical and biological effects of processing and storage, on-site tours of processing plants.

574 CULTURAL DIMENSIONS OF FOOD 3 credits
  An examination of cultural, geographical and historical influences on development of food habits. Emphasis on evolution of diets, effects of religion, education, gender roles, media.

576 DEVELOPMENTS IN FOOD SCIENCE 3 credits
  Prerequisite: permission. Advanced study of the chemistry and physics of food components, affecting characteristics of foods. Critical evaluation of current basic and applied research emphasized.

580 COMMUNITY NUTRITION I-LECTURE 3 credits
  Prerequisite: Permission of instructor. Corequisite: 581. Socio-cultural aspects of community nutrition, program implementation and evaluation, and rationales for nutrition services.

581 COMMUNITY NUTRITION I-CLINICAL 1 credit
  Corequisite: 580. Field placement in area agencies offering nutrition services. Study of the agency’s goals, organization, and philosophy of nutritional care. Credit/noncredit.

582 COMMUNITY NUTRITION II-LECTURE 3 credits
  Prerequisites: 580 (581 for CP student only). Corequisite: 583 for CP student only. This course will focus on managing nutrition services for productivity (economic, community and labor resources and evaluations), and educating the dietitians various publics about nutrition.

583 COMMUNITY NUTRITION II-CLINICAL 1 credit
  Prerequisite: CP students only. Corequisite: 581. Field placement in area agencies offering nutrition services. Study of the agency’s goals, organization, and philosophy of nutritional care. Credit/noncredit.

585 SEMINAR IN HEALTH PROFESSIONS 1-3 credits
  Prerequisite: permission of instructor. Exploration and evaluation of current developments in selected areas.

587 SPORTS NUTRITION 3 credits
  Prerequisite: Permission of instructor. In-depth study of energy metabolism and utilization before, during, and after exercise. Factors affecting nutrient needs and peak performance of different athletic populations are emphasized.

588 PRACTICUM IN DIETETICS 1-3 credits
  Prerequisite: Permission of instructor. Practical experience in application of the principles of nutrition.

589 PROFESSIONAL PREPARATION FOR DIETETICS 1 credit
  Prerequisite: open to those dietetics students in the Didactic Program or Graduate program who plan to apply for a Dietetic Internship. Historical aspects of dietetics and where the profession is heading. Special areas of dietetic practice are explored. Students prepare the application for dietetic internship.

593 NUTRITION FOR ATHLETES 3 credits
  Study of nutrition for different athletic populations before, during, and after exercise. Factors affecting nutrient needs and peak performance of different athletic populations.

594 ORIENTATION TO GRADUATE STUDIES IN HEALTH PROFESSIONS 1 credit
  Introduction to the concepts and processes necessary for graduate study in health professions.

610 MANAGEMENT OF FOOD SYSTEMS 3 credits
  Theoretical concepts in the management of dietetic food service systems and application of principles and procedures to achieve nutritional care goals.

616 CLINICAL NUTRITION 3 credits
  Study of Medical Nutrition Therapy (MNT) and its relationship to metabolic and pathological conditions as well as nutrition support strategies.

624 ADVANCED HUMAN NUTRITION I 3 credits
  Prerequisites: undergraduate or graduate-level courses in nutrition and biochemistry. In-depth study of human nutrition emphasizing metabolic, nutritional implications of carbohydrates, protein and lipids and the determinants of human energy requirements.

625 ADVANCED HUMAN NUTRITION II 3 credits
  Prerequisite: 624 or equivalent in-depth study of human nutrition with emphasis on the utiliza- tion, physiological functions and interrelationships of vitamins and minerals.

632 ADVANCED FOOD THEORY AND APPLICATIONS 3 credits
  Prerequisite: 520 or permission. Advanced study of the chemistry of food components, assessing the characteristics of foods. Critical evaluation of current basic and applied research emphasized.

680 CURRENT ISSUES IN NUTRITION 3 credits
  Study of current issues in the field of nutrition science. Each semester that it is offered the course will explore a specific topic relevant to current research and practice in the field of nutrition as it relates to biology, immunology, applied nutrition, and epidemiology.

685 RESEARCH METHODS IN HEALTH PROFESSIONS 3 credits
  A study of health sciences research methods emphasizing concept and theory development, quantitative and qualitative methodologies.

688 PRACTICUM IN NUTRITION AND DIETETICS 3 credits
  Prerequisite: permission of advisor/instructor. A minimum of 150 hours of supervised experi- ence in an approved community setting to acquire skills related to area of specialization.

690 THESIS RESEARCH/READING 3 credits
  Prerequisite: permission of advisor. Supervised reading and research related to approved thesis topic. May be repeated once.

694 MASTER’S PROJECT 5 credits
  Prerequisite: permission of advisor. The development, implementation and evaluation of a community-based supervised project which makes a significant contribution to the field and may lead to publication.

696 INDIVIDUAL INVESTIGATION IN NUTRITION AND DIETETICS 1-3 credits
  Prerequisite: permission of advisor. Individual investigation and analysis of a specific topic in student’s area of specialization of interest under direction of a faculty advisor.

699 MASTER’S THESIS IN HEALTH PROFESSIONS 5 credits
  Prerequisite: permission of advisor. Supervised research in a specialized area of the health profession which makes a contribution to the field and may lead to publication.

NURSING

501 CLINICAL RESEARCH MANAGEMENT 3 credits
  Corequisite: 500. This course provides a discourse concerning the scope of responsibility for professionals coordinating and managing interdisciplinary clinical research, including clinical trials.

509 INTERNATIONAL HEALTH 2-3 credits
  Prerequisite: Admission to MSN program. A comparison of nursing roles and responsibilities in an international environment. Influence of education, ethics, government, demography, and geography on health care will be considered.

512 GLOBAL PERSPECTIVES OF HEALTH AND HEALTH CARE 2-3 credits
  Prerequisite: Senior or graduate status. (May be repeated for a maximum of 6 credits) Cultural, political, educational, and economical perspectives of different regions of the world and the impact of these factors on health will be compared and examined.

533 SCHOOL NURSE PRACTICUM I 5 credits
  Prerequisite: 5570, 521, 523 and 8200-2225 or 650; corequisite: 225 or 650 if not previously completed. Emphasis on clinical primary health care nursing to enhance positive health behavior outcomes of well children and adolescents with minor conditions in family, commu- nity, school contexts.

544 SCHOOL NURSE PRACTICUM II 5 credits
  Prerequisite: Senior or graduate status. (May be repeated for a maximum of 6 credits) Cultur- al, political, educational, and economical perspectives of different regions of the world and the impact of these factors on health will be compared and examined.

564 ADVANCED PHYSIOLOGICAL CONCEPTS IN HEALTH CARE I 3 credits
  Prerequisite: admission to MSN program. This course presents an in-depth study of physio- logical processes in the areas of neurological, neuromuscular and cardiovascular physiology and their interrelationship with therapeutic agents.

565 ADVANCED PHYSIOLOGICAL CONCEPTS IN HEALTH CARE II 3 credits
  Prerequisite: 561. This course presents an in-depth study of physiological processes in the areas of respiratory, renal and endocrine physiology and their interrelationship with therapeut- ic agents.

589 SPECIAL TOPICS: NURSING 1-4 credits
  (May be repeated as new topics are presented) Group studies of special topics in nursing. May not be used to meet requirements for the major in nursing. May be used for elective credit.

593 WORKSHOPS 1-4 credits
  (May be repeated as new topics are presented) Selected topics in nursing. May be used to meet undergraduate graduate requirements at the discretion of the college.

598 SPECIAL READINGS 1-4 credits
  Prerequisite: permission of student’s advisor or dean. Special readings in an area of concen- tration may be taken to satisfy elective credit. Special readings may not be used to satisfy requirements of the major.

602 ADVANCED ADULT/GERIATRONOLOGICAL ASSESSMENT/FNP 2 credits

603 THEORETICAL BASIS FOR NURSING 3 credits
  Prerequisite: admission to MSN program. Overview of the breadth of research. Evaluation and critique of nursing conceptual models. Analysis of the relationships of theory, research, and practice. Web-based course.

606 INFORMATION MANAGEMENT IN ADVANCED NURSING PRACTICE 3 credits
  Prerequisite: admission to MSN program. Corequisite: Graduate Statistics, 613 or Corequi- site: 613. This course is focused on nursing informatics to support clinical decision making in advanced practice and administration.

612 POLICY ISSUES IN NURSING 3 credits
  Prerequisite: admission to MSN program. Analysis of policy issues that impact on nursing and health care delivery to diverse populations. Evaluate impacts on policy issues of resources. Web-based course.

613 NUTRITION CONCEPTS IN NURSING 3 credits
  Prerequisite: admission to graduate program. In depth study of pathological conditions and related treatment modalities. The course focuses on specific nursing interventions related to these pathophysiological abnormalities.

614 NUTRITION CONCEPTS IN NURSING 3 credits
  Prerequisite: admission to graduate program. Study of nutrition in the elderly population. Course focuses on pathophysiological abnormalities and their anesthetic implications. Normal anatomy and physiology, labo- ratory, including selected major alterations of physiologic function and major anesthetic impli- cations are covered.
664 PSYCHIATRIC MENTAL HEALTH-ACUTE, APN II PRACTICUM 2 credits
Prerequisites: 610, 660, 661. Corequisites: 662, 665. Development of clinical competencies in direct, intervention therapies with families/groups experiencing the stress of actual or potential health problems.

665 PSYCHIATRIC MENTAL HEALTH-ACUTE, APN II 3 credits
Prerequisites: 660, 661. Corequisite: 664. Concepts related to the management of acute psychiatric problems will be explored with an emphasis upon combining psychotherapy and pharmacotherapy.

666 PSYCHIATRIC MENTAL HEALTH POST MSN RESIDENCY 1-4 credits
Prerequisites: 662, 665. Corequisites: 667, 669. Knowledge and skill competency and residency focus is on leadership within a multidisciplinary collaborative environment in complex health systems providing holistic care to clients, families, and groups with psychiatric mental health care.

667 PSYCHIATRIC MENTAL HEALTH-CHRONIC, APN III 3 credits
Prerequisites: 664, 665. Corequisite: 666. Concepts related to the management of chronic psychiatric problems will be explored with an emphasis upon combining psychotherapy and pharmacotherapy.

668 PSYCHIATRIC MENTAL HEALTH-CHRONIC, APN III PRACTICUM 2 credits

683 ADVANCED INTERDISCIPLINARY LEADERSHIP FOR THE HEALTH SCIENCES 3 credits
Prerequisite: Admission to the Ph.D. Program or permission of the instructor. Selected qualitative research methods used to study nursing phenomena. Focus on the interdependence of theories and processes of formulating state/national health care policy. Focus on health outcomes.

685 CLINICAL REASONING 1 credit
Prerequisite: 653. Focus is on integration of abnormal laboratory, radiologic, and morphologic findings as they relate to advanced nursing care of the acutely ill individual.

696 MASTER’S TRACK I 1-6 credits
Prerequisite: 813. Supervised research in a specific area of advanced nursing.

700 INFORMATION MANAGEMENT IN HEALTHCARE 3 credits
Prerequisite: Admission to the Ph.D. Program or permission of the College of Nursing graduate program. A focus on genetics and genomics analyzing the essentials of advanced practice care and genetic diagnostics, counseling and care in specialty settings.

701 CLINICAL TEACHING AND EVALUATION 4 credits
Prerequisite: Admission to the Nursing Education Certificate program. Student should also possess clinical teaching skills, knowledge of theory, and practical experience on teaching in clinical and learning resource center (LRC) settings and basic principles of online education. Application of principles will be demonstrated in practice-based clinical and learning resource center settings. Student evaluations in the clinical setting will be addressed.

705 CLINICAL SCHOLAR I 3 credits
Prerequisite: 603 and doctoral standing or approval from the College of Nursing graduate program. Transition to clinical scholarship role and experience on epistemology guiding advanced practice. Integration of theory and evidence-based practice principles to achieve positive outcomes.

706 CLINICAL SCHOLAR II 4 credits
Prerequisites: 700 and 705. Translation and integration of theory and scientific evidence guiding clinical practice using culturally sensitive approaches to design innovative interventions.

707 CLINICAL SCHOLAR RESIDENCY 1 credit
Prerequisite: 706. Synthesis of components of clinical scholar role comprises residency. Advanced leadership and clinical scholarship skills used to develop and evaluate approaches to healthcare policies.

708 DNP CAPSTONE PROJECT I 2-6 credits
Prerequisite: 705. Corequisite: 706. Faculty-preceptor-directed project that will contribute to nursing evidence knowledge. Includes oral defense and publishable manuscript. May register for two to six credit hours.

709 DNP CAPSTONE PROJECT II 1-3 credits
Prerequisite: 708. Capstone project students must continue registration until all degree requirements and a publishable manuscript are met.

800 DOCTORAL DISSertation 1 credit
Prerequisite: 899 and permission of the dissertation chairperson. Completion enrollment to complete the doctoral dissertation research.

810 HISTORY AND PHILOSOPHY OF NURSING SCIENCE 3 credits
Prerequisite: Admission to the Ph.D. Program or permission of the professor. Examines the nature of metatheories and epistemology, and the influence of contemporary Eastern and Western philosophies on the developing epistemology of disciplinary nursing knowledge. (KSU 70710)

811 THEORY CONSTRUCTION AND DEVELOPMENT IN NURSING 3 credits
Prerequisites: Admission to the Ph.D. Program and 810. Examines strategies for theory development including logical-empirical-inductive and deductive approaches. Emphasis will be placed on clinical scholars and their use of theory and research to develop new knowledge.

820 INTRODUCTION TO NURSING KNOWLEDGE DOMAINS 3 credits
Prerequisites: 810 and 815. Corequisite: 815. Introductory seminar analyzing selected theoretical and methodological approaches to knowledge development in nursing. Emphasis on critical analysis of knowledge in areas of special interest. (KSU 70720)

824 FOUNDATIONS OF SCHOLARLY INQUIRY IN NURSING 3 credits
Prerequisite: 827 and permission of instructor. Corequisite: 810. This course examines diverse paradigms and research methods as the foundation for scholarly inquiry in nursing knowledge development. Students begin building a foundation for focused intellectual inquiry in a substantive area of nursing.

825 QUANTITATIVE RESEARCH METHODS 3 credits
Prerequisite: Admission to the Ph.D. Program or permission of the professor. An integrated approach to study of quantitative nursing research. Exploration of the interdependence of methodology, design/measurement issues, including analysis and interpretation of finding crises, and the concepts of operationalization.

827 ADVANCED HEALTH CARE STATISTICS I 3 credits
Prerequisite: Admission to the Ph.D. Program or permission of the professor: pre- or corequisite: 810. In-depth examination of descriptive statistics, correlation, regression, multiple regression set, scaling, nonlinear transformation, missing data, and interactive effects; including initial manipulation of data, understanding of inference and probability.

830 QUALITATIVE RESEARCH METHODS 3 credits
Prerequisite: Admission to the Ph.D. Program or permission from the instructor. Selected qualitative research methods used to study nursing phenomena. Philosophical bases; design, data collection and analysis; and clinical perspectives on the nature of qualitative methods that may be qualitative will be addressed with regard to nursing phenomena. (KSU 70725)

833 NURSING AND HEALTH CARE POLICY 3 credits
Prerequisite: Admission to the Ph.D. Program or permission of the professor: critical examination of theories and processes of formulating state/national health care policy. Focus on health outcomes, the political and legislative process, and contemporary policy dilemmas. (KSU 70745)

836 ADVANCED INTERDISCIPLINARY LEADERSHIP FOR THE HEALTH SCIENCES 4 credits
Prerequisite: Admission to the Ph.D. Program or permission of the instructor. Seminar on advanced leadership in health sciences to assist students to become leaders within practice, academe, and the community.

837 ADVANCED HEALTH CARE STATISTICS II 3 credits
Prerequisites: 827 and admission to the Ph.D. Program or permission of instructor. This course synthesizes and applied knowledge of advanced quantitative and statistical techniques commonly used in health care and nursing research.
NURSING SCIENCE SEMINAR I
Prerequisite: B20. Seminar on critical analysis and synthesis of theoretical models and empirical research that form the foundation for the student’s research. Funding sources are examined. (KUS 86051, 86191, 86291, 86391)
3 credits

844 AMNR: APPLICATION OF QUANTITATIVE METHODS
Prerequisites: 625, 627, 637, and admission to the Ph.D. Advanced seminar on selected areas related to research design and implementation in quantitative methods and evaluation essential to the advancement of nursing knowledge.
3 credits

845 AMNR: MEASUREMENT IN NURSING RESEARCH
Prerequisites: 260 and admission to the Ph.D. Program or permission of instructor. Theories and concepts related to measurement and nursing research including techniques for construction, testing, and refining of instruments with assessment of reliability and validity.
3 credits

846 AMNR: APPLICATION OF QUALITATIVE METHODS
Prerequisite: B20 and admission to the Ph.D. Program or permission of instructor. Achieve an in-depth understanding of one qualitative research approach (chosen by student according to his/her research plan), including associated philosophical key concepts, typical methods, and evaluative criteria.
3 credits

848 AMNR: PROGRAM EVALUATION IN NURSING
Prerequisites: 260 and admission to the Ph.D. Program or permission of instructor. Seminar and lecture: analysis of theories and models of program evaluation and their relationships to designs, processes, techniques, and outcomes in nursing-related evaluations.
3 credits

946 AMNR: ADVANCED EXPLORATION AND FUNDING
Prerequisites: 260 and admission to the Ph.D. Program or permission of instructor. Advanced seminar on critical analysis of proposal and grant development, funding, peer review, and advocacy process with emphasis on the development of a grant proposal.
3 credits

850 NURSING SCIENCE SEMINAR II
Prerequisites: 620 and 840. Focuses on advancement of student’s scholarship within one of the following areas: discovery, teaching, integration, or application through design and implementation of a faculty-facilitated project. (KUS 87091)
3 credits

883 EVALUATION IN NURSING EDUCATION
Application of evaluation and measurement principles to nursing education. Emphasis is placed on the evaluation as both process and outcome. Includes evaluation of program, curriculum, course, and learner.
3 credits

884 PRACTICUM: ACADEMIC ROLE OF THE NURSE EDUCATOR
Prerequisites: 881, 882, 883. Prereq. Precepted study and practice in classroom and clinical teaching. Presentation of a researchable topic. Course may be waived based on submission of an approved portfolio.
1-12 credits

892 FIELD EXPERIENCE IN NURSING
Prerequisite: Admission to the Ph.D. Program or permission of instructor. Individual enrollment in field experience, practicum, or internship settings related to nursing.
1-6 credits

895 SPECIAL TOPICS IN NURSING
Prerequisite: Admission to the Ph.D. program or permission of instructor. Study of important topics in nursing practice, research, or the profession. Offering in response to existing interest and opportunities. Topics will be announced when scheduled.
1-6 credits

896 INDIVIDUAL INVESTIGATION IN NURSING
Prerequisite: Admission to the Ph.D. program or permission of instructor. Individual enrollment for independent study in nursing carried out by student under supervision of a doctoral faculty council member.
1-3 credits

899 RESEARCH IN NURSING
Prerequisite: Admission to the Ph.D. program or permission of instructor. Research carried out by a student under faculty supervision. In-depth inquiry should result in a paper or appropriate product.
1-15 credits

900 DOCTORAL DISSERTATION
Prerequisite: Advancement to candidacy. (May be repeated) Independent dissertation research under the guidance of a faculty chairperson and a dissertation committee. (KUS 80191)
1-15 credits

PUBLIC HEALTH
8300:

601 PUBLIC HEALTH CONCEPTS
Prerequisite: Permission to admit to the MPH program. Organizational structure, history, law, ethics, essential services, global problems, and future of public health.
3 credits

602 SOCIAL AND BEHAVIORAL SCIENCES IN PUBLIC HEALTH
Prerequisites: Permission to admit to the MPH program. Theories of health education and promotion: interventions (communication, collaboration, and strategies); socio-cultural, diversity, and regional issues as pertains to public health.
3 credits

603 EPIDEMIOLOGY IN PUBLIC HEALTH
Prerequisites: Admission to the MPH program. Epidemiological concepts, methods, and public health applications. Student presentations to focus on special topics such as infectious diseases, chronic conditions, etc.
3 credits

604 BIOSTATISTICS IN PUBLIC HEALTH
Prerequisite: Admission to the MPH program. Biostatistics basics, statistical inference, central tendency, variance, analysis of variance, regression analysis, survival analysis, and applications in public health. Epi Info and JMP statistical packages.
3 credits

605 HEALTH SERVICES ADMINISTRATION IN PUBLIC HEALTH
Prerequisite: Admission to the MPH program. Management principles, planning and evaluation, grant-writing, economics, policy, data sources, and applications to public health.
3 credits

606 ENVIRONMENTAL HEALTH SCIENCES IN PUBLIC HEALTH
Prerequisite: Admission to the MPH program. Air quality, water hygiene, sanitation, solid waste management, hazardous materials management, vector-borne disease, occupational health, legal issues, environmental hazard identification and response.
3 credits

608 PUBLIC HEALTH PRACTICE AND ISSUES
Prerequisites: 601, 602, 603, 604. Informatics, communication, diversity, cultural proficiency, biology, and ethics are applied in a public health organizational practice setting. This is a required course for practice-based course.
3 credits

10 GRANT WRITING IN PUBLIC HEALTH PRACTICE
Prerequisite: Admission to the MPH Program. Methods and techniques for writing grant proposals to fund public health programs and operations.
3 credits

609-699 SPECIAL TOPICS IN PUBLIC HEALTH
Special topic sections will focus on specific topics of current interest in public health.
1-5 credits

695 INDEPENDENT STUDY
Prerequisite: permission of academic advisor and instructor. Includes research or other individual projects designed by student and instructor. Covers topics not available in electives listing. (May only be taken for a maximum of 3 credits).
1-3 credits

700 PRACTICUM
Student is teamed with a faculty advisor and community preceptor(s) to work on a meaningful public health issue. For students who desire additional field experience. Credit/noncredit.
1-3 credits

697 CAPSTONE PROJECT
A required culminating experience for MPH students to be taken after all core courses are completed. In partnership with a community organization/agency.
3-6 credits

698 CAPSTONE PROJECT I
Prerequisites: 601, 602, 603, and 604. In depth assessment of public health competencies and preparation for culminating community experience in Capstone II.
3 credits

699 CAPSTONE PROJECT
Prerequisites: 601, 602, 603, 604, 605, 606, and 698. A required culminating experience for MPH students completed in partnership with a community organization/agency.
3 credits

840 NURSING SCIENCE CONCEPTS
Prerequisite: Permission of instructor. Nature of polymer blends and compounds and their applications. Preparation and technology using batch and continuous mixers. Mixing Mecha-

841: POLYMER ENGINEERING
525 INTRODUCTION TO BLENDING AND COMPOUNDING POLYMERS
Prerequisite: Permission of instructor. Nature of polymer blends and compounds and their applications. Preparation and technology using batch and continuous mixers. Mixing Mecha-

527 MOLD DESIGN
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.
3 credits

530 ENGINEERING PROPERTIES OF POLYMERS
Prerequisite: Permission of instructor. Introduction to engineering properties and polymer processing. Analyzing mechanical polymer tests in glassy, rubbery, and fluid states. Product design, rheology, and applications in polymer processing concepts.
3 credits

551 POLYMER ENGINEERING LABORATORY
Prerequisite: Permission of instructor. Laboratory experiments on the rheological characteriza-
tion of polymer melts, fabrication of engineering products, structural investigation of poly-
mer parts.
3 credits

601 POLYMER ENGINEERING SEMINAR
Prerequisite: Permission of instructor. Presentations of recent research on topics in polymer engineering by internal and external speakers.
1 credit

611 FUNDAMENTALS OF POLYMER STRUCTURE CHARACTERIZATION
Prerequisite: Permission of instructor. Characterization of orientation, morphology, superstructure in polymers using x-ray, light scattering, birefringence, dichroism, crystallography, unit cell determination.
3 credits

621 RHEOLOGY OF POLYMER FLUIDS
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.
3 credits

622 ANALYSIS AND DESIGN OF POLYMER PROCESSING OPERATIONS I
Prerequisites: 621. Mathematical modeling and analysis of polymer processing operations including extruder screws, injection molding, film blowing, and extrusion.
3 credits

623 ANALYSIS AND DESIGN OF POLYMER PROCESSING OPERATIONS II
Prerequisite: Permission of instructor. Basic studies on non-isothermal phenomena in polymer processing emphasizing crystallization, vitrification, frozen-in orientation and residual stress-
es, applications, including fiber spinning and film extrusion.
3 credits

631 ENGINEERING PROPERTIES OF SOLID POLYMERS
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.
3 credits

641 POLYMER CHEMISTRY AND THERMODYNAMICS
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.
3 credits

650 INTRODUCTION TO POLYMER ENGINEERING
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.
3 credits

651 POLYMER ENGINEERING LABORATORY
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.
3 credits

661 POLYMER REACTOR ENGINEERING
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.
3 credits

675 CARBON-POLYMER NANOTECHNOLOGY
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.
3 credits

680 POLYMER COATINGS
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.
3 credits

699 MASTER’S THESIS
Prerequisite: 625 or equivalent. Particle technology in general and basic knowledge of polymer science.
1-6 credits (may be repeated) Supervised original research in specific area of polymer engineering.

148 RHEO-OPTICS OF POLYMERS
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.
2 credits

700 RHEO-OPTICS OF POLYMERS
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.
2 credits

712 MOLECULAR ASPECTS OF POLYMER RHEOLOGY
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.
2 credits

713 RHEOLOGY AND PROCESSING TWO-PHASE POLYMER SYSTEMS
Prerequisite: Permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.
2 credits

718 POLYMER SCIENCE & POLYMER ENGINEERING
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>601</td>
<td>POLYMER CONCEPTS</td>
<td>2 credits</td>
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<tr>
<td>602</td>
<td>SYNTHESIS AND CHEMICAL BEHAVIOR OF POLYMERS</td>
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<tr>
<td>603</td>
<td>SPECIAL PROJECTS IN POLYMER SCIENCE</td>
<td>1-3 credits</td>
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<td>607,8</td>
<td>POLYMER SCIENCE SEMINAR I AND II</td>
<td>1 credit each</td>
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<td>610</td>
<td>POLYMER SCIENCE</td>
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<td>613</td>
<td>POLYMER SCIENCE LABORATORY</td>
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<td>615</td>
<td>LABORATORY COMPUTER APPLICATIONS IN POLYMER SCIENCE</td>
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<td>617</td>
<td>POLYMER SCIENCE I</td>
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<td>618</td>
<td>POLYMER SCIENCE II</td>
<td>2 credits</td>
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<tr>
<td>621</td>
<td>POLYMER RHEOLOGY</td>
<td>2 credits</td>
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<td>622</td>
<td>ADVANCED MODELLING OF POLYMER PROCESSING</td>
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<td>623</td>
<td>RHEOLOGY AND PROCESSING OF ELASTOMERS</td>
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<td>624</td>
<td>ADVANCED EXTENSION AND COMPOUNDING</td>
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<td>625</td>
<td>CHEMORHEOLOGY AND PROCESSING OF THERMOSOFTS</td>
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<tr>
<td>626</td>
<td>NUMERICAL METHODS IN POLYMER ENGINEERING</td>
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<td>627</td>
<td>STRESS ANALYSIS OF POLYMERS AND COMPOSITES</td>
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<td>628</td>
<td>LIQUID CRYSTALS</td>
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<td>629</td>
<td>POLYMER COLLOIDS</td>
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<td>630</td>
<td>POLYMER NANO-REACTIVITY AND COMPOSITE MATERIALS</td>
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<td>ADVANCED POLYMER COATING TECHNOLOGY</td>
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<td>632</td>
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<td>633</td>
<td>POLYMER TECHNOLOGY II</td>
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<td>634</td>
<td>POLYMER TECHNOLOGY III</td>
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<td>635</td>
<td>POLYMER THERMODYNAMICS</td>
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<td>636</td>
<td>PHASE TRANSITIONS IN POLYMER BLENDS AND ALLOYS</td>
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<td>637</td>
<td>INJECTION AND COMPRESSION MOLDING FUNDAMENTALS</td>
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**Graduate Courses**

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<tr>
<td>643</td>
<td>PHYSICAL PROPERTIES OF POLYMERS I</td>
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<tr>
<td>644</td>
<td>PHYSICAL PROPERTIES OF POLYMERS II</td>
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<tr>
<td>645</td>
<td>POLYMER STRUCTURE AND CHARACTERIZATION</td>
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<td>646</td>
<td>POLYMER THERMODYNAMICS</td>
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<tr>
<td>647</td>
<td>MASTER'S THESIS</td>
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<tr>
<td>648</td>
<td>POLYMER TECHNOLOGY I</td>
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<td>650</td>
<td>POLYMER TECHNOLOGY III</td>
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<td>651</td>
<td>CONDENSATION POLYMERIZATION</td>
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<td>652</td>
<td>FREE RADICAL REACTIONS IN POLYMER SCIENCE</td>
<td>2 credits</td>
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<td>653</td>
<td>POLYMER SCIENCE</td>
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<tr>
<td>654</td>
<td>POLYMER SCIENCE</td>
<td>1-3 credits</td>
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<tr>
<td>655</td>
<td>DOCTORAL DISSERTATION</td>
<td>1-6 credits</td>
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**Prerequisites:**

- Permission of instructor.
- Basic knowledge of computer programming.
- Preliminary investigation of Ph.D. dissertation subject.
- Successful completion of Ph.D. qualifying exams.

**Restrictions:**

- Courses may be repeated.
- Topics of current interest in polymer science, encompassing chemistry, physics or engineering aspects of macromolecular science.

**Notes:**

- Students are required to present a 25-minute lecture on some aspect of polymer science and to participate in discussions of lectures presented by other seminar participants.

- Laboratory experiments in synthesis, characterization, physical properties and processing and testing of polymers.

- Principles of compounding and testing, processing principles and types of operation, design principles.

- Introduction to fundamentals and practical aspects of polymer solutions, polymer phase equilibria, and polymeric phase transitions and dilute solution steady-state transport.

- The scope, kinetics and mechanisms of free radical initiated reactions encountered in polymer science, including polymerization methods, detailed considerations of the initiation, propagation and termination steps in vinyl polymerizations and copolymerization, preparation of block and graft copolymers by free radical initiated reactions and the mechanisms of free radical induced polymer degradation reactions.

- Special topics in polymer science.

- Special topics in polymer science, encompassing chemistry, physics or engineering aspects of macromolecular science.

- Open to property qualified students accepted as candidates for Doctor of Philosophy in Polymer Science depending on the availability of staff and facilities.
APPENDICES

Grievance Procedures for Graduate Students

Purpose
The procedures set forth in this document are intended to provide graduate students with a formal channel of appeal and redress of grievances arising out of their academic and/or employment relationship with the University.

Procedures
1. Any graduate student who believes that he or she has valid grounds for a complaint shall attempt to resolve the problem through a conference with the faculty member involved, the department head, and/or the graduate advisor. Following that, the student may attempt to resolve the problem with the assistance of the academic dean. A graduate student presenting a case to the academic dean must provide a full written statement of the grievance, together with all appropriate supporting material. When or if the problem has not been adequately solved at that level or the student wishes to appeal that decision, the student shall prepare a written statement of the complaint setting forth clearly and specifically the allegations and shall hand deliver the written complaint to the Dean of the Graduate School. The Dean of the Graduate School shall notify the complainant confirming the receipt of the complaint and shall request all materials from the Dean of the complainant’s college.

2. Within one week of receipt of the complaint, the Dean of the Graduate School shall communicate with all parties in an attempt to informally resolve the problem. The result of this process will be a recommendation by the Dean of the Graduate School which will be communicated in writing to all parties, including the Senior Vice President and Provost.

3. The complaint shall become a grievance to be filed with the Senior Vice President and Provost if: a) the Dean of the Graduate School wishes to have a Hearing Committee render a recommendation on the grievance; or b) the student wishes to appeal the recommendation of the Dean of the Graduate School. The student must notify the Senior Vice President and Provost within one week of notification of the Dean of the Graduate School’s decision on the complaint.

4. Upon receipt of the grievance, the Senior Vice President and Provost shall notify in writing the President of Graduate Student Government that a Hearing Committee should be constituted. The Hearing Committee shall be organized in no more than two weeks.

5. When the grievance has been filed with the Chairperson of the Hearing Committee, it shall be the responsibility of that Chairperson to notify in writing all parties involved in the grievance within two working days. This notification shall include the following information: that a grievance has been filed; the nature of the grievance; and the parties involved.

6. If the charged party in that grievance admits the validity of the grievance, the Chairperson of the Hearing Committee shall waive the hearing and shall direct an appropriate resolution in consultation with the Hearing Committee.

7. If the party charged in the grievance denies the validity of the grievance, the Hearing Committee shall conduct the hearing.

Hearing Committee
A Hearing Committee shall be established as follows:

1. Chairperson – The Chairperson shall be a member of the graduate faculty with full membership, but not from the department involved in the proceedings. This Chairperson shall be selected by the Senior Vice President and Provost and shall serve for only one grievance proceeding. The Chairperson shall conduct the hearing and shall vote only in the case of a tie.

2. Members – Four members shall be selected as follows:
   a. From the complainant’s department - a graduate student not directly involved, selected jointly by the Department Chair and the President of the Graduate Student Government. If the grievance is filed against the Department Chair, the Academic Dean shall substitute for the Department Chair. If the grievance is filed against the department, the Senior Vice President and Provost shall substitute for the Department Chair.
   b. From the complainant’s department - a faculty member not directly involved, selected jointly by the Department Chair and the President of the Graduate Student Government. If the grievance is filed against the Department Chair, the Academic Dean shall substitute for the Department Chair. If the grievance is filed against the department, the Senior Vice President and Provost shall substitute for the Department Chair.
   c. A graduate student not involved with the complainant and not from the complainant’s department, selected by the Vice Chairperson of the Graduate Council.
   d. A member of the graduate faculty with full membership not involved in the complaint nor from the complainant’s department, selected by the Senior Vice President and Provost.
   e. A Hearing Committee shall be organized anew each and every time a grievance is brought forth. A Hearing Committee shall serve through the adjudication and resolution of the complaint.

Hearing Procedure
1. The hearing must take place within two weeks of the Hearing Committee’s formation.

2. At least three working days prior to the hearing, the Hearing Committee Chairperson shall provide the Hearing Committee and the Parties involved with:
   a. The student’s written statement of the grievance.
   b. Written notification of when and where the Hearing Committee shall meet.
   c. A copy of “Grievance Procedures for Graduate Students” and all relevant documents.

3. Each party shall be required to appear in person before the Hearing Committee to present his/her case. Each party may have an advisory/colleague present to protect his/her rights if so desired. However, the parties shall speak and act on their own behalf. Witnesses may be called to present evidence on behalf of the complainant or the charged person. The use of tape recorders is prohibited, except as may be required to accommodate persons with disabilities.

4. All parties shall be entitled to an expeditious hearing. In urgent cases in which it is alleged that a regulation, administration decision, or action threatens immediate and irreparable harm to any of the parties involved, the Hearing Committee shall expedite the hearing and disposition of the case. The Hearing Committee is empowered to recommend to the Dean of the Graduate School that an individual, department, or college discontinue or postpone any action which threatens to cause irreparable harm, pending the final disposition of the case.

5. The burden of proof shall be on the complainant and the standards of justice and fair play shall prevail in the adjudication of violations and grievances.

6. If necessary, the Hearing Committee may consult with the University’s Office of General Counsel for advice at any time throughout this process.

Decisions and Actions
1. The Hearing Committee shall decide as follows: there has been a violation of the complainant’s rights, or there has been no violation of the complainant’s rights.

2. Should the Hearing Committee determine that a violation of the complainant’s rights occurred, the Committee shall, if practical, recommend a resolution to the Senior Vice President and Provost.

3. The Senior Vice President and Provost, exercising his/her judgment, shall act on the implementation of the resolution recommended by the Hearing Committee.

Record Keeping
The Chairperson of the Hearing Committee shall be responsible for keeping a summarized, written record of all the proceedings.

1. Records of all proceedings shall be prepared by the secretarial personnel of the Graduate School. Copies of all proceedings shall be distributed as follows:
   a. To all parties involved in the proceedings.
   b. To the Hearing Committee members.
   c. To the President of the Graduate Student Government.
   d. To the Dean of the Graduate School.
   e. To the Senior Vice President and Provost.

2. A copy of all proceedings shall be kept in the office of the Dean of the Graduate School pursuant to the University’s record retention proposal.

Appeal
An appeal may be made to the President of the University after all of the above procedures have been followed. The President of the University shall assess each case on an individual basis and his/her decision shall be considered final.

University Rule 3359-24-02
http://www.uakron.edu/oqc/docs/24-02.doc
Family Educational Rights and Privacy Act (FERPA)

A student has a right to:

- Inspect and review education records pertaining to the student;
- Request and amendment to the student’s records; and
- Request a hearing (if the request for an amendment is denied) to challenge the contents of the education records, on the grounds that the records are inaccurate, misleading, or violate the rights of the student.

The parent or eligible student has a right to:

- Inspect and review the student’s education records;
- Request the amendment of the student’s education records to ensure they are not inaccurate, misleading, or in otherwise in violation of the student’s privacy or other rights.
- Consent to disclosures of personally identifiable information contained in the student’s education records, except to the extent that FERPA authorizes disclosure without consent.
- File with the U.S. Department of Education a complaint concerning alleged failures by the school to comply with the requirements of FERPA; and
- Obtain a copy of the school’s FERPA policy.

Disclosure of Personally Identifiable Information

- FERPA regulations list conditions under which "personally identifiable information" from a student’s education record may be disclosed without the student’s prior consent.
- Disclosure may be made to authorized representatives of the U.S. Department of Education, the Office of Inspector General, or state and local education authorities. These officials may have access to education records as a part of an audit or program review, or to ensure compliance with Student Financial Assistance program requirements. (Representatives of the Department include research firms that are under contract with the Department to conduct studies of financial aid procedures, using student information provided by the schools selected for the study. The term also includes the Student Financial Assistance program public inquiry contractor.)
- Disclosure may be made if it is in connection with financial aid that the student may receive a request from the Immigration and Naturalization Service (INS) or the Federal Bureau of Investigation (FBI) for access to a student’s records. Such a request may be granted only if the student information is needed to determine the amount of the aid, the conditions for the aid, the student's eligibility for the aid, or to enforce the terms or conditions of the aid.
- Disclosure may be made to the student’s parent, if the student is dependent on the parent, as defined by the Internal Revenue Service. If the student receives more than half of his or her support from the parent, under the IRS definition, the student is a dependent of the parent. (Note that the IRS definition is quite different from the rules governing dependency status for the Student Financial Assistance programs.)
- Disclosure may be made to organizations that are conducting studies concerning the administration of student aid programs on behalf of educational agencies or institutions.

Annual Notification

Each year, The University of Akron is required to give notice of the various rights accorded to parents or students pursuant to the Family Education Rights and Privacy Act (FERPA). Parents and students, under FERPA, have a right to be so notified and informed. In accordance with FERPA, you are notified of the following:

- Right to Prevent Disclosures
  You have the right to prevent disclosure of Education Records to third parties with certain limited expectations. It is the intent of The University of Akron to limit the disclosure of information contained in your Education Records to those instances where prior written consent has been given for disclosures, as an item of directory information of which you have not refused to permit disclosure, or under the provisions of FERPA which allows disclosure without prior written consent.

- Right to Inspect
  You have the right to review and inspect substantially all of your Education Records maintained at or by The University of Akron.

- Right to Request an Amendment
  You have the right to have corrected any parts of any Education Record that you believe to be inaccurate, misleading, or otherwise in violation of your FERPA rights. This right includes the right to a hearing to present evidence that the record should be changed if this institution decides not to alter the Education Records.

- Right to Obtain Policy
  You have the right to obtain a copy of the written institutional policy adopted by The University of Akron in compliance with FERPA. A copy may be obtained in person or by mail from the FERPA coordinator, the University Registrar, whose office is located in Simmons Hall, Room 120. In addition, this policy may be accessed online at http://www.uakron.edu/ogc/docs/11-08_6-25-07.doc.

- Right to File a Complaint
  You have the right to file a complaint with the Family Educational Rights and Privacy Act Office at the Department of Education, 600 Independence Avenue, S.W., Washington, D.C., 20202-8387, (202) 260-9001, concerning any belief you may have that The University of Akron has failed to comply with the provisions of FERPA.

Release of Directory Information

The Family Educational Rights and Privacy Act of 1974 (FERPA) permits The University of Akron to release directory (public) information about students. Directory (public) information includes the student’s name, local (mailing) address, telephone number, major field of study, participation in officially recognized activities and sports, the student’s photograph, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and the most recent previous education agency or institution attended by the student.

Withhold Directory Information

If a student asks for directory information to be withheld, it will be withheld from a variety of sources, including friends, relatives, prospective employers, honor societies, the news media, and the commencement program. Students should carefully consider the consequences of a decision to withhold directory information.

Students may obtain a "DIRECTORY INFORMATION RESTRICTION REQUEST" form at http://www3.uakron.edu/registrar/DirInfoRel.doc or at the Office of the University Registrar.

Completed forms must be provided to the Office of the University Registrar more than ten (10) days prior to the starting date of the semester or summer session for instructions to be effective for that semester. Return to: Office of The University Registrar, The University of Akron, Akron, Ohio 44325-6208, or fax to (330) 972-6097.

Note: The above is a very general summary of the Family Educational Rights and Privacy Act (FERPA) and the University’s policy implementing this law. The full text of the University’s policy implementing FERPA may be accessed at http://www.uakron.edu/ogc/docs/11-08_6-25-07.doc.
Intellectual Property Rights and Obligations

During your graduate study at The University of Akron and your professional career thereafter, you may become involved with at least one of the three main forms of intellectual property matters: copyrights, patents, and proprietary information/trade secrets. It is possible that certain discoveries may have commercial value, and therefore may invoke one or more of the above forms of intellectual property ownership.

Copyright

Copyright, by law, is automatically owned by the author or the authors, employer or sponsor when the work is placed in a fixed form (or medium). The University Board of Trustees automatically waives any claim of the University to copyright in books, texts, or articles of a purely academic nature authored by faculty or students except when the material is prepared as a sponsored project in which case it is the property of the University. Ownership would then be assigned to the University or its designee as the Board of Trustees directs. Questions of authorship are often best handled informally between potential joint authors.

Patents

All discoveries and inventions made by you while associated with The University of Akron must be reported to your faculty advisor, and through your advisor to your department chair, dean, and thereafter to the Office of Research Services and Sponsored Programs using the standard University of Akron invention disclosure form. This form provides a guide to describing and identifying the invention broadly and referencing specific results. Those persons thought to be possible inventors should also be identified on this form.

Patents on inventions made by University faculty, staff, students or anyone using University facilities are automatically owned by The University of Akron, as provided by Ohio Revised Code Section 3345.14. The final decision as to inventorship is a technical legal conclusion and will be made in the course of preparing a patent application by the patent attorney handling the application.

Proprietary Information

Those engaged in sponsored research may also be involved with developing or receiving proprietary information owned by others outside the University (e.g., sponsors such as corporations and individuals seeking certain research from the University). The University and the principal investigator may have agreed to maintain this proprietary information in confidence. In some situations, proprietary information of a sponsor may be provided to you or other project investigators during a research project. The sponsor desires, in these situations, to keep the information confidential (or secret) for as long as possible.

You are free to use the confidential information in the course of the project and discuss it with other students or faculty members engaged in that project. However, you may not use the information on other projects, nor may you discuss it with other individuals not involved with that project. While these commitments could delay public access to your thesis for a specified time, it will not delay acceptance or approval of your thesis/dissertation nor delay your graduation date.

The University and principal investigator must have written personal commitments from anyone working on a project involving and securing proprietary information. Therefore, all research students are required to execute the Confidentiality Agreement (sample form attached to this page). Prior to the start of your research, it is the responsibility of the research director to inform you in writing of any restrictions on the research with a copy also sent to the Office of Research Services and Sponsored Programs, if your research is subject to confidentiality provisions. You are also to be informed by the research director about the scope of the research that is covered by any confidentiality provisions.

If you have any questions as to what information is proprietary, seek guidance from your project’s principal investigator or your faculty research advisor.

Questions of Authorship and Inventorship

In the event you think you have been improperly omitted from the list of authors, you should first discuss the matter with your faculty advisor. If you have further questions or consider the matter unresolved, you should inform in the following order the appropriate department chair, the college dean, and finally the Dean of the Graduate School. (Questions are usually, and most quickly, resolved at the lowest administrative levels.)

In the event you think you have been omitted as an inventor on a patent application, you should first discuss the matter with your faculty research advisor and, thereafter, with your department chair and finally with your academic dean. Following such consultations, either you and/or your faculty advisor, or your department chair, or your dean can request the patent attorney who prepared the application to recheck the findings and then prepare a formal report on inventorship. The whole patent application file may then be referred to the Office of General Counsel for a re-evaluation of valid inventors. However such as re-evaluation by patent counsel shall only occur with the prior knowledge of your faculty advisor, Department Chair and Dean.
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* The dates in parentheses indicate the beginning of service at The University of Akron; unless otherwise stated, service began in the month of September.
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