



The University of Akron
Undergraduate Bulletin



2012 - 2013



UNDERGRADUATE BULLETIN

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The University of Akron
Undergraduate Bulletin

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About the Bulletin

Inquiries

Address inquiries concerning:

Admissions information, campus tours, and transfer of credits to the Office of Admissions, The University of Akron, Akron, OH, 44325-2001. (330) 972-7100, or toll-free, (800) 655-4884. FAX (330) 972-7022.

Financial aid, scholarships, and loans to the Office of Student Financial Aid, The University of Akron, Akron, OH 44325-6211. (330) 972-7032. Toll free (800) 621-3847. Fax (330) 972-7139.

Athletics to the Director of Athletics, The University of Akron, Akron, OH, 44325-5201. (330) 972-7080.

Registration, records, graduation, DARS, scheduling, Ohio Residency, and military services to the Office of the University Registrar, The University of Akron, Akron, OH 44325-6208. (330) 972-8300.

Graduate study to the Graduate School, The University of Akron, Akron, OH 44325-2101. (330) 972-7663.

The University switchboard number is (330) 972-7111.

Accredited By

Information from Current Bulletin

NCA Higher Learning Commission
Dr. Sylvia Manning, President
230 S. LaSalle Street, Suite 7-500
Chicago, IL 60604
800-621-7440

www.ncahigherlearningcommission.org

For information on accreditation or to review copies of the accreditation documents, contact the Vice Provost for Academic Operations, The University of Akron, Buchtel Hall 106, Akron, OH 44325-4703; (330) 972-8584.

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 other such reasons as the University deems necessary.

Please note that editions of this Undergraduate Bulletin prior to 1994-95 were titled the "General Bulletin."

Equal Education and Employment Institution

Operating under nondiscrimination provisions of Titles VI, VII, of the Civil Rights Act of 1964 as amended and IX of the Educational Amendments of 1972 as amended. Executive Order 11246, Vocational Rehabilitation Act Section 504, Vietnam Era Veterans' Readjustment Act, and Americans with Disabilities Act of 1990 as related to admissions, treatment of students, and employment practices. It is the policy of this institution that there shall be no unlawful discrimination against any individual at The University of Akron because of race, color, creed, sex, age, national origin, handicap or status as a veteran. The University of Akron will not tolerate sexual harassment of any form in its programs and activities, and prohibits discrimination on the basis of sexual orientation in employment and admissions. The nondiscrimination policy applies to all students, faculty, staff, employees and applicants. Complaints of possible sex and other forms of discrimination should be referred to:

EEO/AA Employee Selection Office

ASB, Room 138B
Akron, OH 44325-4709
Phone: (330) 972-7300

Policy Information and inquiries concerning the application of Title IX may be obtained from Title IX Coordinator

ASB, Room 125D
Akron, OH 44325-4733
Phone: (330) 972-2352

or

The United States Department of Education, Office of Civil Rights
Policy Information on the Americans with Disabilities Act may be obtained from

ADA Coordinator
ASB 125 D
Akron, OH 44325-4733
Phone: (330) 972-2352

The *Undergraduate Bulletin* is published once each year by the Office of the Senior Vice President, Provost and C.O.O., Buchtel Hall 102.



Academic Calendar

<http://www.uakron.edu/dotAsset/851728.pdf>

July 2012

- 1 Graduation applications due for students completing Associate, Baccalaureate, Graduate or Law degree requirements by the end of Fall Semester 2012
- 2 Deadline for preliminary submission of masters theses to Graduate School for Summer 2012 graduation
- 4 Independence Day observance - University closed
- 7 Summer Session 2012 1st 5-week session classes end
- 9 Summer Session 2012 2nd 5-week session classes begin
- 16 Deadline for final submission of theses and dissertations to Graduate School for Summer 2012 graduation
- 27 School of Law Summer 2012 10-week session ends & 2nd 5-week ends
- 28 Summer Session 2012 8-week session classes end
- 29 School of Law Summer 2012 Intersession II begins

August 2012

- 11 Summer Session 2012 2nd 5-week session classes end
- 11 Summer 2012 Commencement
- 12 School of Law Summer 2012 Intersession II ends
- 14 Final grades due for Summer Session 2012
- 20 School of Law Fall Semester 2012 classes begin for entering students (orientation week)
- 23-24 Sixty Plus (60+) in-person Fall Semester 2012 registration
- 27 Fall Semester 2012 classes begin
- 27 School of Law Fall Semester 2012 classes begin

September 2012

- 3 Labor Day Holiday - University closed
- 10 Last day to drop Fall Semester 2012 classes without "WD" appearing on transcript

October 2012

- 14 Last day to process course withdrawals for Fall Semester 2012 (11:59 pm)
- TBA Spring 2013 Registration begins
- 22 Deadline for preliminary submission of doctoral dissertations to Graduate School for Fall 2012 graduation

November 2012

- 1 Graduation applications due for students completing Law degree requirements by the end of Spring Semester 2013
- 5 Deadline for preliminary submission of masters theses to Graduate School for Fall 2012 graduation
- 12 Veteran's Day observance - Staff Holiday - Classes Held

- 19 Deadline for final submission of thesis and dissertations to Graduate School for Fall 2012 graduation
- 22-25 Thanksgiving recess - University closes at 5:00pm, Nov. 21
- 26 Fall Semester 2012 classes resume from Thanksgiving recess
- 30 School of Law final instructional day for Fall Semester 2012

December 2012

- 1 Graduation applications due for students completing Associate or Baccalaureate degree requirements by the end of Spring Semester 2013
- 3 Admission deadline to University, Summit, Upper colleges and Graduate School for Spring 2013
- 5-15 School of Law Fall Semester 2012 final examination period
- 9 Final instructional day for Fall Semester 2012
- 10-16 Final examination period for Fall Semester 2012
- 14-15 Fall 2012 Commencement
- 18 All grade changes and incomplete make-ups for previous term due in the Office of the University Registrar (5:00 pm)
- 18 Final Grades due for Fall Semester 2012
- 12/17-1/13 Spring Intersession (Winter Recess)
- 24-25 Christmas Holiday observance - University closed

January 2013

- 1 New Years Day observance - University closed
- 10-11 Sixty Plus (60+) in-person Spring Semester 2013 registration
- 14 Spring Semester 2013 classes begin
- 14 School of Law Spring Semester 2013 classes begin
- 18 Last day to add courses for Spring Semester 2013 without signatures
- 21 Martin Luther King, Jr. Day observance - University closed
- 28 Last day to drop Spring Semester 2013 classes without "WD" appearing on transcript

February 2013

- 19 President's Day observance - classes cancelled (Law School classes held)
- TBA Summer Session 2013 Registration begins

March 2013

- 1 Graduation applications due for students completing Graduate degree requirements by the end of Spring Semester 2013
- 3 Last day to process course withdrawals for Spring Semester 2013 (11:59 pm)
- 18 Deadline for preliminary submission of doctoral dissertations to Graduate School for Spring 2013 graduation
- 25-31 Spring Semester 2013 recess
- 25-31 School of Law Spring Semester 2013 recess TBA - Fall Semester 2013 Registration begins

April 2013

- 1 Spring Semester 2013 classes resume from Spring recess
- 1 Deadline for preliminary submission of master's theses to Graduate School for Spring 2013 graduation
- 1 Graduation applications due for students completing Associate or Baccalaureate degree requirements by the end of Summer Session 2013
- 15 Deadline for final submission of theses and dissertations to Graduate School for Spring Semester 2013 graduation
- 26 School of Law final instructional day for Spring Semester 2013

May 2013

- 5/1-5/11 School of Law Spring Semester 2013 final examination period
- 5 Final instructional day for Spring Semester 2013
- 6-12 Final examination period for Spring Semester 2013
- 10-12 Spring 2013 Commencement
- 12 School of Law Summer 2013 Intersession I begins
- 14 All grade changes and incomplete make-ups for previous term due in the Office of the University Registrar (5:00 pm)
- 14 Final grades due for Spring Semester 2013
- 16-17 Sixty Plus (60+) in-person Summer Session 2013 registration
- 19 School of Law Spring 2013 Commencement
- 20 Summer Intersession 2013 classes begin
- 26 School of Law Summer 2013 Intersession I ends
- 28 School of Law Summer 2013 classes begin (1st 5-week and 10-week sessions begin)
- 27 Memorial Day observance - University closed

June 2013

- 1 Graduation applications due for students completing Graduate degree requirements by the end of Summer Semester 2013
- 7 Summer Intersession 2013 classes end
- 10 Summer Session 2013 1st 5-week session and 8-week session classes begin
- 24 Deadline for preliminary submission of doctoral dissertations to Graduate School for Summer 2013 graduation
- 28 School of Law Summer 2013 1st 5-week session ends



General Information

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 of Akron is located between East Market Street and East Exchange Street on the east side 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 the Akron-Canton Regional Airport, located to the south.

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 university. It is significant that the efforts, energy, and financial support of an Akron manufacturer of farm equipment, John R. Buchtel, were instrumental in persuading the Ohio Universalist Convention to build its college on a hill overlooking the town that stretched along the Ohio Canal. The grateful trustees responded by naming the school Buchtel College. It is also significant that during its first four decades, the struggling institution was repeatedly aided in its efforts to survive by various local entrepreneurs who pioneered and prospered in such industries as cereals, clay products, matches, and rubber. Buchtel College's emphasis on local rather than denominational interests became increasingly clear, and by 1913 those strong ties and the school's financial situation caused its trustees to transfer the institution and its assets to the city. For the next 50 years, The Municipal University of Akron received its principal support from city tax funds and swelled from an enrollment of 198 to nearly 10,000. The growth of the college paralleled the remarkable expansion of the community itself. From 1910 to 1920, Akron was the fastest-growing city in the country, evolving from a thriving canal town of 70,000 to a major manufacturing center of 208,000, thanks in large part to a boom in local factories that bore names such as Goodyear, Firestone, Goodrich, and others. The age of the automobile — and the demand for inflatable rubber tires — changed the complexion of Akron forever. Changes within the Municipal University's curriculum reflected the strong interrelationship of town and gown. In 1914 a College of Engineering began instruction, and other professional schools followed: Education (1921), Business Administration (1953), Law (1959), Community and Technical College (now Summit College) (1964), Fine and Applied Arts (1967) (In December 2008, the programs in the college became part of two distinct units: the College of Creative and Professional Arts, and the College of Health Sciences and Human Services. In 2012, the programs in the colleges moved to the Buchtel College of Arts and Sciences and newly created College of Health Professions.), Nursing (1967) (in 2012, Nursing joined programs from the College of Health Sciences and Human Services to form the College of Health Professions) and Wayne College (1972).

Considering the institution's location in the heart of a burgeoning rubber industry, it seemed only appropriate that the world's first courses in rubber chemistry would be offered at Buchtel College, in 1909. From those first classes in Professor Charles W. Knight's laboratory would evolve the world's first College of Polymer Science and Polymer Engineering (1988). During World War II, University of Akron researchers helped fill a critical need in the U.S. war effort by contributing to the development of synthetic rubber. The University's polymer programs have produced some of the world's most able scientists and engineers, and today attract millions of dollars annually in research support, as well as top graduate students from around the world. Research, innovation, and creativity actively take many forms at the University — in the sciences, and in the arts and humanities. Today, University faculty study ways of matching workers with jobs to maximize performance; develop new ways to synthesize fuel; write and produce plays, write poetry, choreograph dance works; explore improved methods of tumor detection; evaluate water quality in northeast Ohio; provide speech and hearing therapy to hundreds of clients; aid the free enterprise system by sharing the latest in business practices with new and established companies alike; provide health care in community clinics; and study political campaign financing and reform. Faculty are awarded patents each year for their work on new technologies and products. The University of Akron's continuing and central commitment to the liberal arts is signified by the perpetuation of the institution's original name in the Buchtel College of Arts and Sciences. The University has a long tradition of serving the needs of part-time and full-time students through day and evening classes, and it attracts traditional and nontraditional

students of all economic, social, and ethnic backgrounds. The University seeks to recruit and retain students of diverse backgrounds.

The University's first doctoral degree was, appropriately enough, awarded in polymer chemistry in 1959, but master's degrees were granted as early as 1882. The University of Akron now offers 17 doctoral degree programs and seven law degree programs as well as more than 100 master's degree programs and options. The University offers undergraduate students a choice of more than 200 majors and areas of study leading to associate and bachelor's degrees. Hundreds of noncredit continuing education courses, certificate programs and specialized training opportunities are available for individuals and organizations.

In 1963 the receipt of state tax monies made the University a state-assisted municipal university, and on July 1, 1967, The University of Akron officially became a state university. Today, 28,771 students from 47 states and 80 countries are enrolled in its 9 degree-granting units. The Princeton Review listed The University of Akron among the "Best in the Midwest" in its 2010 edition of Best Colleges: Region by Region. Its College of Polymer Science and Polymer Engineering is the nation's largest academic polymer program. The University excels in many other areas, including global business, organizational psychology, educational technology, marketing, dance, intellectual property law and nursing. Alumni of the University number more than 151,000 and include scientists, engineers, artists, lawyers, educators, nurses, writers, business people, and other professionals at work in every state and throughout the world. The 218-acre Akron campus, with 88 buildings, is within walking distance of downtown Akron and is located in a metropolitan area of 2.8 million people. The University's presence in Northeast Ohio provides numerous opportunities in recreation, major collegiate, amateur, and professional sports, concerts, cultural events, and commerce, all within easy driving distance and many accessible via public transportation. Arts venues on campus include Daum and Sandefur theatres, Guzzetta Recital Hall, the Emily Davis Gallery, and E.J. Thomas Performing Arts Hall, the flagship performance venue for the region. The critically acclaimed Akron Symphony Orchestra, Tuesday Musical and UA Steel Drum Band perform at Thomas Hall. The University joined the Mid-American Conference in 1991 and participates on the NCAA Division I level in 19 sports. The University's ongoing, major campus renovation campaign that began in 2000, the "New Landscape for Learning," has added 20 new facilities, 18 major additions or renovations and 34 acres of green space. For more than 142 years, The University of Akron has been an active participant in Akron's renaissance of commercial and artistic endeavor, a leader in the metropolitan area's intellectual and professional advancement, a center for internationally lauded research efforts and a source of enrichment, education, and vitality for Northeast Ohio. Our history is a long and proud one — yet at The University of Akron, our eyes are on the future, for our students, our faculty and staff, our community, and our world.



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

Colleges

Buchtel College of Arts and Sciences	972-7880
College of Education	972-7680
College of Business Administration	972-7041
Summit College	972-7220
College of Polymer Science and Polymer Engineering	972-7500
College of Health Professions	972-7552
College of Engineering	972-6978
Honors College	972-7966
The University of Akron Wayne College	(800) 221-8308

Other Offices

Academic Achievement Programs	972-6804
Academic Advisement Center	972-7430
Accessibility, Office of	972-7928
Admissions, Office of	972-7100
Adult Focus, UA	972-5793
Air Force (Aerospace Studies)	972-2182
Athletic Advising	972-7426
Athletics, Director	972-7080
Bierce Library	972-8161
Bierce Math Lab	972-6552
Bierce Tutoring Lab	972-6552
Bierce Writing Lab	972-6548
<i>Buchtelite</i> , <i>The</i> (student newspaper)	972-7919
Career Center	972-7747
Center for Child Development	972-8210
Center for Service and Leadership	972-7021
College Reading and Study Skills Lab	972-7046
Counseling Center	972-7082
Developmental Programs	972-7087
DocuZip Polsky Building	972-2130
DocuZip Student Union	972-7870
Educational Talent Search	972-5771
English Language Institute	972-7544
Federal College Work Study	972-8074
Financial Aid, Office of Student	972-7032
Game Room	972-8462

Graduate School	972-7663
Greek Life	972-7909
Health Services, Student.	972-7808
International Programs	972-6349
Law Library	972-7330
Military Services Center	972-7838
Multicultural Development, Office of	972-6769
New Student Orientation (NSO)	972-2622
Off-Campus Student Services	972-5500
Office of Student Academic Success	972-6552
Ohio Residency Officer	972-8638
Pan-African Culture and Research Center	972-7030
Parking Services	972-7213
Peer Mentoring Program	972-6769
Polsky 333	972-7046
Registrar, Office of the University	972-8300
Reservation Line	972-8689
Reserved Officers' Training Corps (ROTC)	972-7454
Residence Life and Housing	972-7800
S.T.E.P. (Strive Toward Excellence Program)	972-6819
Scholarships (non-University)	972-7032
Scholarships (University)	972-7032
Science and Technology Library	972-7195
Student Judicial Affairs, Department of	972-6380
Student Life, Administration Office	972-7866
Student Organization Resource Center (SOuRCe)	972-2483
Student Recreation and Wellness Services	972-2348
Student Union Information Centers	972-INFO (4636)
Testing Services	972-7084
Toll-Free	(800) 655-4884
Tours (of the University)	972-7077
Transfer Student Services Center (TSSC)	972-7009
TTY/TDD	972-5764
Undergraduate Student Government	972-7002
University Archives	972-7670
Upward Bound Math and Science Program	972-5105
Upward Bound Program	972-5839
WZIP-FM Radio Station	972-7105
ZIPS Programming Network	972-7014

Emergency Phone Numbers

Campus Patrol	972-7263
Closing Information	972-SNOW (7669)
Police/Fire/EMS	911
Police (non-emergency)	972-2911
University Switchboard	972-7111



Safety and Security

Located on this page you will find relevant information regarding Safety and Security, including links to those respective offices and departments. This information is provided as part of The University of Akron's commitment to safety and security on campus and is 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. Student Affairs 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

<http://www.uakron.edu/safety/police/>

Phone - 330-972-2911

Email - uapd@uakron.edu

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 40 police officers are commissioned by the State of Ohio with full law enforcement authority and responsibilities identical to the local police or sheriff. The UA 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 the Department of Student Judicial Affairs. The Code of Student Conduct Manual explains the University's disciplinary process and is available through the Department of Student Judicial Affairs. It is the goal of every member of the University Police Department to promote, preserve, and deliver feelings of safety and security through quality services to the members of the University community.

Drug and Alcohol Prevention

<http://www.uakron.edu/safety/be-safe-and-smart/drug-free-schools-and-communities.dot>

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

<http://www.uakron.edu/safety/be-safe-and-smart/>

Phone -330-972-2911

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 the prompt reporting of crimes. Security considerations and maintenance are high priorities. Police officers patrol parking lots 24 hours a day. UA police also offer assistance to motorists with battery jumps, inflating tires, unlocking vehicles, and obtaining fuel. To request non-emergency assistance, 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

<http://www.uakron.edu/safety/be-safe-and-smart/>

Phone - 330-972-7263

A student escort service operates 5 p.m. to 2 a.m. seven days a week for the safety of anyone walking alone on campus during the evenings. Summer and break hours vary. 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 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.

Emergency Phones and Emergency Phone Numbers

<http://www.uakron.edu/safety/be-safe-and-smart/>

Yellow or red emergency phones are directly connected to the UA Police Department. These phones are strategically located throughout campus pedestrian walkways and inside parking decks. Police respond to the activation of any emergency phone receiver, even if no words are spoken. 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- before the campus extension.

Campus Buildings - Hours of Operation

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. When the University is closed, all buildings are locked and may be opened only by authorized personnel.

Health and Safety

<http://www.uakron.edu/safety/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 respond to reports of potential safety and security hazards, 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 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

<http://www.uakron.edu/safety/annual-safety-report/crime-statistics.dot>

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 Web site at www.uakron.edu/safety/annual-safety-report/. 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.



Important Policies

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 those principles, for without them we cannot thrive 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 and we respect the needs of students, faculty, contract professionals, staff, administrators, maintenance and service personnel, and everyone else whose work and dedication enable 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 belief, sexual orientation, and physical or mental potential.

We take responsibility 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**, united 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 carry out 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 with students. Faculty must not tolerate academic dishonesty nor 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 or 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, free from name-calling or ridicule. All members of the University family 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 all representatives 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 Code of Student Conduct and the University Disciplinary Procedures. Faculty, contract professionals, administrators, and staff are expected to abide by all University regulations and procedures.

Intent to Enroll

<http://www.uakron.edu/intent/>

Phone - 330-972-7100

Email - admissions@uakron.edu

The University of Akron requires students to submit an 'Intent to Enroll' form, indicating their acceptance of the University's offer of Admission, and a \$100 University Confirmation fee. The Intent to Enroll form is sent to students at the time of admission to the University. Upon return of the Intent to Enroll form and the University Confirmation fee, the student is issued a New Student Enrollment Packet, which includes their UA Net ID (Internet ID), directions on requesting an orientation date and information on requesting on-campus housing and University dining plans.

New Student Orientation

<http://www.uakron.edu/nso/>

Phone - 330-972-2622

Email - orientation@uakron.edu

All new freshmen, transfer students and students enrolled in the Post-Secondary Enrollment Option Program (PSEOP) are required to attend an orientation program prior to registering for classes at The University of Akron. Orientation is conducted as a one-day program and is intended to ensure a smooth transition to the University. Content includes information about academic policies and procedures, registration and financial responsibility, campus involvement, and campus safety. In addition, students will meet with an academic adviser and register for classes during orientation.

Students will need their UA Net ID, found in the New Student Enrollment Packet, to request an orientation date. Multiple orientation sessions are available prior to each term and are filled on a first come, first served basis. Students should attend orientation as soon as possible to ensure the best selection of classes.

Academic Advising

New students are required to meet with academic advisers upon initial entry to the University. Thereafter, students are strongly encouraged to see advisers each term to discuss degree requirements, career goals, major choice, course selection, and other academic concerns.

Registration

Each term it is necessary for a student to select courses, formally register for those courses, and pay the appropriate tuition and fees. The student may elect to register online or in person. Details about these options are described online via MyAkron at <http://my.uakron.edu> and are available upon request from the Office of Academic Advising Services, or the degree-granting college.

Class Attendance

A student is expected to attend all class meetings for which the student is registered. A student may be dropped from a course in the current term by the dean if absence is repeated and the instructor recommends this action; a student can gain re-admission only with permission of both the instructor and the dean. A student dropped from a course receives an "F" which counts as work attempted whenever grade- point ratio calculations are made.

Student Schedules

Adding Courses

A student must register for a course in person before the end of the fifth day of a fall or spring term or online via MyAkron at <http://my.uakron.edu> by the end of the first week of the fall or spring term. Additions to the student's official schedule may be made after that date, but before the 15th calendar day, only with the permission of the student's adviser, instructor and dean or the dean's designee. Students who have not registered by this deadline may not attend classes or receive credit for the course. This deadline applies to all regular 15-week courses offered in the fall and spring semesters. For all other courses, such as those in intersessions or those which are flexibly scheduled, courses must be added, with appropriate permission, by the date when 20% of the course has been completed. Details regarding Summer session information may be found via MyAkron at <http://my.uakron.edu>.

Withdrawal Policy

<http://www.uakron.edu/ssc/withdrawal-policy.dot>

Phone - 330-972-7272

Email - ssc@uakron.edu

Students may drop a course through the second week (14th calendar day) of a semester or proportionally equivalent dates during summer session, intersession, and other course terms. No record of the course will appear on the student's transcript. For purposes of this policy, the course term for a course that meets during a semester but begins after the beginning of a semester and/or ends before the end of a semester begins when its class meetings begin and ends when its class meetings end. After the 14-day period, and subject to the limitations below, students may withdraw from a course through the seventh week (49th calendar day) of a semester or proportionally equivalent dates during summer session, intersession, and other course terms. A course withdrawal will be indicated on the student's official academic record by a grade of "WD."

Withdrawing from courses - applicable to undergraduate students only:

1. Undergraduate students may not withdraw from the same course more than twice. If a student attempts to withdraw from a course after having withdrawn from it twice before, he or she will continue to be enrolled in the course and will receive a grade at the end of the semester.
2. Full-time undergraduate students who need to withdraw from all courses for extraordinary non-academic reasons (e.g., medical treatment or convalescence, military service) must obtain the permission of the dean of their college. For purposes of this paragraph:
 - a) Students are considered full-time if they were enrolled as full-time students at the beginning of the term; and
 - b) Courses for which the student has completed all requirements are excluded.
3. Undergraduate students who withdraw from two courses either before they have earned 32 credits, or after they have earned 32 credits but before they have earned 64 credits, are not permitted to register for additional courses until they have consulted with their academic adviser. The purpose of this consultation is to discuss the reasons for the course withdrawals and to promote satisfactory academic progress by helping students develop strategies to complete their courses successfully.
4. Except as otherwise provided below, undergraduate students may not withdraw from more than four courses before they have earned 64 credits. Students who attempt to withdraw from more than four courses will continue to be enrolled in those courses and will receive grades at the end of the semester.
5. Undergraduate students who need to withdraw from all courses for extraordinary, non-academic reasons (e.g. medical treatment or convalescence, military service) may, after consulting with their adviser, submit a written petition to the dean of their college requesting that these courses not be counted toward the four-course withdrawal limit. The dean may grant this permission if, in the dean's judgment, it is consistent with the best academic interests of the student and the best interests of the University.
6. Undergraduate students who have reached the four-course withdrawal limit as noted above may, after consultation with their adviser, submit a written petition to the dean of their college seeking permission to withdraw from one or more additional courses. The dean may grant this permission if the dean finds that the withdrawal is necessitated by circumstances beyond the student's control and is consistent with the best academic interests of the student and the best interests of the University.
7. Withdrawing from a course shall not reduce or prevent a penalty accruing to a student for misconduct as defined in the Student Code of Conduct.
8. Degree granting colleges may supplement this policy with more stringent requirements.



Grade Policies and Credit

Grades and the Grading System

A student will receive grades on various types of classroom performance during the progress of most courses and a final grade at the end of the term. At the end of the term, grades are available online. Individual tests are usually graded with percentage or letter marks, but official academic records are maintained with a grade-point system. Overall scholastic averages are computed on a quality point ratio basis, wherein the sum of the quality points earned is divided by the sum of the credits attempted. The quality point value per credit for each letter grade is shown in the following tables:

Grade Quality Points Key

A	4.0	
A-	3.7	
B+	3.3	
B	3.0	
B-	2.7	
C+	2.3	
C	2.0	
C-	1.7	
D+	1.3	
D+	0.0	Graduate Courses Only
D	1.0	
D	0.0	Graduate Courses Only
D-	0.7	
D-	0.0	Graduate Courses Only
F	0.0	Failure
I	0.0	Incomplete
IP	0.0	In Progress
AUD	0.0	Audit
CR	0.0	Credit
NC	0.0	Noncredit
WD	0.0	Withdrawn
NGR	0.0	No grade reported
INV	0.0	Invalid grade reported
PI	0.0	Permanent Incomplete
R	0.0	Repeat

Notes: Prior to Fall Semester 1973 cumulative grade point averages included transfer work. A student cannot raise a grade through re-examination.

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 complete at the end of the term. Failure to make up the omitted work satisfactorily by the end of exam week 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. It is the responsibility of the student to make up the incomplete work. The faculty member should submit the new grade to the Office of the University Registrar on a change of grade form, which is available through MyAkron. If the instructor wishes to extend the "I" grade beyond the following term for which the student is registered, the instructor should submit an incomplete extension form, which is available through MyAkron, before the end of the semester.

IP - In Progress: Indicates that the student has not completed the scheduled coursework during the semester because the nature of the course does not permit completion within a single semester, such as work toward a thesis. An "IP" grade should be assigned only in graduate courses.

PI - Permanent Incomplete: Indicates that the student's instructor and the dean with jurisdiction over the course may for special reason authorize the change of an incomplete "I" to a permanent incomplete "PI."

WD - Withdraw: Indicates that the student registered for the course but withdrew officially after the 15th day of the term.

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

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

Importance of Grades

Grades determine whether a student is either eligible or ineligible to remain at the University. Eligibility to participate in the 200-plus registered student organizations and other co-curricular activities is dependent on the student's maintenance of good academic standing at the University. A student who has not been placed on probation or dismissed from the University is deemed to be in good academic standing. Some selective organizations such as honoraries and varsity athletics require special eligibility criteria. On the basis of grades, a student receives opportunities to take additional courses to accelerate academic progress. Acceptance for admission to a college depends on the approval of the dean of the college which the student chooses to enter and on the student's academic performance to date.

Dean's List

Undergraduate students who carry 12 graded credits or more without receiving an "Incomplete" or "In Progress" grade and earn a grade point average of 3.25 or better are eligible for inclusion on the Dean's List of their respective college. This is an undergraduate academic honor recognizing excellence in the classroom prior to the completion of the degree. Developmental Program course load hours do not carry academic credit toward a degree and are not considered in determining Dean's List honors but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.

Part-Time Student Dean's List

Undergraduate part-time students who carry between 6 and 11.5 graded credits without receiving an "Incomplete" or "In Progress" grade and earn a grade point average of 3.25 or better are eligible for inclusion on the Part-Time Student Dean's List of their respective college. This is an undergraduate academic honor recognizing excellence in the classroom prior to the completion of the degree. Developmental Program course load hours do not carry academic credit toward a degree and are not considered in determining Part-Time Dean's List honors but do count in computing a student's course load for financial aid or student employment, and are used in probation and dismissal decisions.

Probation-Dismissal

An undergraduate student who fails to maintain a grade-point average of 2.00 ("C") is placed on academic probation and may be subject to a change of courses, dismissal, or some other form of discipline. Academic discipline is determined by the dean of the college in which the student is enrolled. Reinstatement of a student is determined by the dean of the college from which the student was dismissed. Once dismissed from the University, a student is not eligible to register for credit courses until readmitted.

Repeating Courses

Any course may be repeated twice by an undergraduate student subject to the following conditions:

- To secure a grade ("A-F") a student may repeat a course in which the previously received grade was a "C-," "D+," "D," "D-," or "F." "CR," "NC," or "AUD." Registrations under the "CR/NC" option are subject to the restrictions in the "CR/NC" policy
- To secure a "CR," a student may repeat a course in which the previously received grade was a "NC." Registrations under the "CR/NC" option are subject to the restrictions in the "CR/NC" policy
- To secure a grade ("A-F"), "CR," "NC," a student may repeat a course in which the previously received grade was an "AUD." Registrations under the "CR/NC" option are subject to the restrictions in the "CR/NC" policy
- A graded course ("A-F") may not be repeated for a grade of "AUD"
- A course taken under the "CR/NC" option may not be repeated for a grade of "AUD"
- With the dean's permission, a student may substitute another course if the previous course is no longer offered. Courses must be repeated at The University of Akron

- Grades for all attempts at a course will appear on the student's official academic record
- Only the grade for the last attempt will be used in the grade-point average
- All grades for attempts at a course will be used in grade-point calculation for the purpose of determining graduation with honors and class standing
- For purposes of this section, credit for this course or its equivalent will apply only once toward meeting degree requirements

Course Substitution Policy

The University of Akron recognizes that some students may be unable to satisfy specific coursework requirements for degree completion. Therefore, the student may request a course substitution. A course substitution is not appropriate when the specific course(s) is essential to the degree being sought and a substitution would represent a fundamental alteration of the program. The process for requesting a course substitution is as follows:

The student contacts his/her adviser and requests a course substitution.

- If the request(s) is based on a disability, the Office of Accessibility shall be consulted and shall assist the adviser and student in the facilitation of a solution
- If the adviser approves, an appropriate substitution is agreed upon and the recommendation with rationale is forwarded to the department chair or school director for approval
- The student shall be advised of and sign an informed consent form which is forwarded with the recommendation and which states the following:
 - You have been advised that this substitution is only applicable in this college and is not binding on any other college within the University
 - You understand that a course substitution may ultimately affect further studies at this university or other colleges and universities including graduate studies
- If the department chair or school director approves, the recommendation with rationale is forwarded to the Dean
- If the Dean approves, the office of the Dean shall notify all parties concerned
- Approved course substitutions should be entered into the DARS academic progress system by the appropriate office
- If the Dean disapproves, the student may request a review by the Senior Vice President and Provost and Chief Operating Officer

Academic Reassessment

To be eligible for academic reassessment, a student shall:

- Have not attended The University of Akron for at least three calendar years. A semester or summer session in which the student received all "WD" grades cannot be counted as part of the separation period; and
- Have re-enrolled and maintained a grade point average of 2.5 or higher for the first 24 letter-graded ("A" through "F") hours attempted at The University of Akron; and
- Have not used academic reassessment before at The University of Akron; and
- Submit a written request for academic reassessment to the student's college dean's office. To apply for academic reassessment, the student shall complete the appropriate form in consultation with his/her academic adviser. The Office of the University Registrar shall confirm eligibility and make the adjustments to the student's academic record.
- The student begins with a new cumulative grade point average and adjusted credit hour totals. Credit hours are defined as semester hours. Only grades with a "C-" or lower may be reassessed. The student, in consultation with his/her academic adviser, shall identify the courses to be reassessed. Grades to be reassessed shall come from the time period prior to the student's re-enrollment following the three-year absence.
- Grades earned for the courses that are reassessed at The University of Akron are excluded from the calculation of the cumulative "GPA," but will remain on the student's official transcript
- Credit hours earned for courses at The University of Akron during the previous enrollment with a grade of "C" or better, including "CR," are retained
- Credit hours from all reassessed courses taken during the previous enrollment at The University of Akron with a grade of "C-" or lower are removed from the calculation of the cumulative "GPA" (although the grades are retained on the academic transcript with the notation "academic reassessment policy")

The Office of the University Registrar will apply the following provisions of the academic reassessment policy:

- When counting the first 24 credits attempted, if the 24th credit is part of other credits earned during a semester, the entire number of credits earned for that semester will be calculated into the grade-point average
- An undergraduate student may utilize this academic reassessment policy only one time in his/her career at The University of Akron

- This policy applies to undergraduate course work taken at The University of Akron and only for undergraduate students earning a first undergraduate degree
- Grades from all courses ever taken at The University of Akron and the resulting "GPA" (unadjusted by the academic reassessment policy) will be used for purposes of determining eligibility for university, departmental or professional honors or other recognition based upon the student's undergraduate academic career and record of academic performance
- Any academic probations, suspensions or dismissals from reassessed semesters shall not be forgiven. They will count when the probation-dismissal policy is applied to the student's record after readmission
- A student may seek an exception to this policy through an appeal to the senior vice president and provost and chief operating officer whose decision will be final

Academic Misconduct

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 our educational objectives requires high standards of academic integrity. The University community is governed by the policies and regulations contained within the [Code of Student Conduct](#). Contact the Department of Student Judicial Affairs in Student Union 216, at sja@uakron.edu or 330-972-6830. The University of Akron considers academic integrity an essential part of each student's personal and intellectual growth. Instances of academic misconduct will be addressed. 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 misconduct and to seek clarification directly from the instructor if necessary. Examples of academic misconduct 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 unauthorized information from another student to complete an assignment
- 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 the 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 the Department of Student Judicial Affairs, a meeting will occur and, if the information indicates it is more likely than not that an academic misconduct violation has occurred, the office will follow procedures.

Credit/Noncredit Option (undergraduate and post baccalaureate only)

A student who takes a course on a "credit" or "noncredit" (CR/NC) basis, and who earns a grade equivalent to "A" through "C-," shall receive credit ("CR") for the course and have the grade, "CR," placed on the permanent record; a grade equivalent to "D+" through "F" will be recorded with the noncredit grade, "NC."

For the baccalaureate degree, no more than 16 credits of non-language courses and no more than 20 credits in total (including language courses) are permitted to be taken on a CR/NC basis. For the associate degree, no more than eight credits of non-language courses and no more than 10 credits in total, including language courses, is permitted.

A student is eligible for the CR/NC option if the student has:

- Completed 50% of the number of credits required for a degree
- A GPA of at least 2.30
- The consent of an adviser

The CR/NC option is available only at the time of registration for the course. After the first week of the term or first two days of a summer session, the status cannot be changed. The University Registrar will notify the instructor of those students utilizing the CR/NC option by means of the final class list.

Courses that can be taken on a CR/NC basis:

- One free elective (not in major field) course per term
- Any first- and/or second-year foreign language course at any time, regardless of grade-point average

Courses that cannot be taken CR/NC:

- Any General Education courses
- Courses required by colleges and departments of all undergraduate majors

Courses for which "CR" is awarded will be counted as hours completed only; courses for which "NC" is awarded shall not be counted as hours attempted; in neither case shall "CR" or "NC" be considered in calculating grade-point average, but in both instances the course shall be entered on the student's official academic record. A student may repeat a course for credit (CR), or a grade (A-F) after receiving a grade of "NC." A college may designate in the printed schedule, on an annual basis, a course as not available to be taken on a "CR/NC" basis. A student taking a course on a "CR/NC" basis is expected to meet the full requirements of the course as required by the instructor.

Audit Policy

A student choosing to audit a course must elect to do so 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.

Transient Work at Another University

The purpose of transient work is to provide The University of Akron student with opportunity to: 1) take a course that is not offered at The University of Akron; or, 2) if the student is away in the summer, to take a course in a distant location; or, 3) in rare cases, a student who is only a few credits shy of graduation and must leave The University of Akron due to extenuating circumstances. These courses will be listed on The University of Akron official academic record. Each course will reflect the course number, title, grade and credit value; no grade-point value will appear on the record and the grade for such course will not be included in The University of Akron grade-point calculation. The name of the institution will be listed on The University of Akron official academic record as well as the date that the coursework was taken.

Any University of Akron student who wishes to take coursework at another regionally accredited institution of higher education must receive prior approval by the academic dean of the appropriate unit if the student intends to apply this coursework toward a degree at The University of Akron.

- A student can make an official request for transient credit by submitting a Transient Permission Form. If the coursework taken at another institution will be used to satisfy The University of Akron General Education requirements, prior written permission to take the course must be received unless the course has been previously approved as an equivalency by The University of Akron.
- If the coursework taken at another institution will be used to satisfy a degree granting college degree requirement or as elective credit, prior written permission to take the course must be received from the dean of the student's degree granting college unless the course has been previously approved as an equivalency by The University of Akron.
- A student must earn a grade of "D-" or better in the course at the other institution in order for the credits to apply toward the student's degree requirements at The University of Akron unless otherwise specified by the degree-granting college. The student must provide the official transcript for the course in order to receive credit.
- No more than 18 total credit hours of transient work may be approved prior to the granting of a baccalaureate degree. No more than nine total credit hours of transient work may be approved prior to the granting of an associate degree.
- Approvals for transient attendance at other institutions are valid for only the requested term and are subject to all restrictions of the dean of the college approving the request for transient credit.
- Students who are on probation, dismissed or are in the last 32 hours of a baccalaureate degree or are in the last 16 hours of an associate degree are restricted or denied transient permission by either the dean of the degree granting college or the dean of the University College except in rare and compelling circumstances.

Note: Coursework taken at another institution cannot be considered for The University of Akron's *Repeat for Change of Grade* policy or *Academic Reassessment* policy and will not be calculated into the UA grade point average.

Alternative Credit Option

American Council on Education's College Credit Recommendation

The University of Akron accepts the American Council on Education's College Credit Recommendation Service (CREDIT). CREDIT evaluates and makes credit recommendations for formal educational programs. p. 21

and courses offered by organizations including business and industry, labor unions, professional and voluntary associations, schools, training suppliers, and government agencies. The program is based on the idea that it is sound educational practice for colleges and universities to grant academic credit for high-quality educational programs conducted by a variety of organizations provided that the courses are appropriate to an individual's degree program.

Advanced Placement Credit

<http://www.uakron.edu/admissions/undergraduate/who-are-you/applicant/ap-and-ib-credit.dot>

Many high schools offer Advanced Placement courses through the auspices of the College Board for possible college credit. By enrolling in such courses during high school and taking Advanced Placement Tests at the end of each course, high school students may earn undergraduate credits in a number of different academic areas. The test score required to receive credit for a specific course is determined by the Ohio Board of Regents and the Academic Department in which the course resides. Credits earned in this manner are included in the total credits completed, but are not assigned a grade and do not count in the quality point ratio, class standing, or graduation with honors calculations. Students must take the tests while they are in high school. It is not possible to take the tests once a student is enrolled at The University of Akron. The State of Ohio, working through the University System of Ohio, has initiated policies to facilitate the ease of transition from high school to college as well as between and among Ohio's public colleges and universities.

Beginning in the Fall term 2009:

- Students obtaining an Advanced Placement (AP) exam score of 3 or above will be awarded the aligned course(s) and credits for the AP exam area(s) successfully completed
- Credits received will be applied toward graduation and may also satisfy a General Education or Honor's Distribution requirement if the course(s), to which the AP area is equivalent, fulfill those requirements
- If an equivalent course is not available for the AP exam area completed, elective or area credit will be awarded in the appropriate academic discipline and will be applied toward graduation where such elective credit options exist within the academic major
- Additional courses or credits may be available when a score of 4 or 5 is obtained. Award of credit for higher score values varies depending on the institution and academic discipline
- In academic disciplines containing highly dependent sequences (Sciences, Technology, Engineering and Mathematics -STEM) students are strongly advised to confer with their academic adviser to ensure they have the appropriate foundation to be successful in advanced coursework within the sequence. The [advanced placement table](#) lists disciplines available for Advanced Placement Testing, scores required for accruing credit and courses at The University of Akron for which credit may be earned For questions concerning Advanced Placement Credit call 330-972-7066 or 330-972-7425.



- [Advanced Placement Credit](#)
- [Bypassed Credit](#)
- [College Level Examination Program \(CLEP\)](#)
- [Credit by Examination](#)
- [International Baccalaureate](#)
- [Military Credit](#)
- [Postsecondary Enrollment Options](#)
- [Tech Prep](#)
- [Transfer Credit](#)

American Council on Education's College Credit Recommendation

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Bypassed Credit

Certain courses designated in this bulletin by each department enable an eligible student to earn "bypassed" credit. An eligible student who completes such a course with a grade of "C" or better may apply for and receive bypass credit for designated prerequisite courses which carry the same departmental code numbers. A student who completes such a course with a "C-" or lower will not be eligible to apply for or receive bypass credits. If the prerequisite course is required for graduation and the bypass attempt is unsuccessful, then the student must take the prerequisite course. Credit for such bypassed prerequisites shall be included in the total credits earned but shall not count in the quality point ratio, class standing or

hours required for graduation with honors. Bypassed credit is not awarded on the basis of completing a course either credit-by-examination or credit/non-credit, or by completing a course as repeat for change of grade.

Discipline	Course	Prerequisite	Approved for Bypass Credit
Summit College			
Computer Information Systems	2440:202	2440:201	2440:201
	2440:203	2440:201	2440:201
	2440:204	2440:202-203	2440:201-203
	2440:301	2440:201-204	2440:201-204
English	2020:222	2020:121	2020:121
	2030:152	2030:151	2030:151
	2030:153	2030:152	2030:151,2
Mathematics	2030:154	2030:153	2030:152,3
	2030:161	2030:151	2030:151
	2030:255	2030:154	2030:152,3,4
	2030:356	2030:255	2030:154,255
	2450:151	2540:150	2540:150
Office Administration	2540:253	2540:151	2540:150,1
	Buchtel College of Arts and Sciences		
Anthropology and Classical Studies	3210:122	3210:121	3210:121
	3210:223	3210:121,2	3210:121,2
	3210:224	3210:121,2,223	3210:121,2,223
	3210:303	3210:121,2,223,4	3210:121,2,223,4
	3210:304	3210:121,2,223,4	3210:121,2,223,4
	3510:122	3510:121	3510:121
	3510:223	3510:121,2	3510:121,2
	3510:224	3510:121,2,223	3510:121,2,223
	3510:303	3510:121,2,223,4	3510:121,2,223,4
3510:304	3510:121,2,223,4	3510:121,2,223,4	
Economics	3250:400	3250:201	3250:201
	3250:410	3250:200	3250:200
English	3300:112*	3300:111	3300:111
Geography and Planning	3350:314	3350:310	3350:310
	3350:442	3350:305	3350:305
	3350:444	3350:305	3350:305
Theoretical and Applied Mathematics	3450:210	3450:145	3450:145
	3450:215	3450:145 or 149	3450:145
	3450:221	3450:149	3450:149
	3450:222	3450:221	3450:149,221
	3450:223	3450:222	3450:221,222
Computer Science	3460:210	3460:209,3450:208	3460:209

Discipline	Course	Prerequisite	Approved for Bypass Credit	
Modern Languages	3500:102	3500:101	3500:101	
	3500:201	3500:102	3500:101,2	
	3500:202	3500:201	3500:101,2,201	
	3500:422	3500:202	3500:101,2,201,2	
	3500:497	3500:202	3500:101,2,201,2	
	3501:102	3501:101	3501:101	
	3501:201	3501:102	3501:101,2	
	3501:202	3501:201	3501:101,2,201	
	3502:102	3502:101	3502:101	
	3502:201	3502:102	3502:101,2	
	3502:202	3502:201	3502:101,2,201	
	3510:102	3510:101	3510:101	
	3510:201	3510:102	3510:101,102	
	3510:202	3510:201	3510:101,102,201	
	3510:303	3510:202	3510:101,2,201,2	
	3510:304	3510:202	3510:101,2,201,2	
	3520:102	3520:101	3520:101	
	3520:201	3520:102	3520:101,2	
	3520:202	3520:201	3520:101,2,201	
	3520:301,2,5,6	3520:202	3520:101,2,201,2	
	3520:303,10,11	3520:202	3520:101,2,201,2	
	3520:312,351	3520:202	3520:101,2,201,2	
	3520:352	3520:351	3520:101,2,201,2	
	3520:402	3520:302	3520:101,2,201,2	
	3520:403,4	3520:302	3520:101,2,201,2	
		3520:413	3520:301 or 302	3520:101,2,201,2
		3520:422	3520:202	3520:101,2,201,2
		3520:427,450	3520:305 or 306 and 302	3520:101,2,201,2
		3530:102	3530:101	3530:101
		3530:201	3530:102	3530:101,2
		3530:202	3530:201	3530:101,2,201
		3530:301,2	3530:202	3530:101,2,201,2
		3530:403,4	3530:302	3530:101,2,201,2
		3530:406,7	3530:302 or 306	3530:101,2,201,2
		3530:422	3530:202	3530:101,2,201,2
		3550:102	3550:101	3550:101
		3550:201	3550:102	3550:101,2
		3550:202	3550:201	3550:101,2,201
		3550:301,2	3550:202	3550:101,2,201,2
		3560:102	3560:101	3560:101
	3560:201	3560:102	3560:101,102	
	3560:202	3560:201	3560:101,102,201	
	3560:422	3560:202	3560:101,2,201,2	
	3570:102	3570:101	3570:101	
	3570:201	3570:102	3570:101,2	
	3580:202	3570:201	3570:101,2,201	
	3580:102	3580:101 or 111	3580:101	
	3580:112	3580:101 or 111	3580:101	
	3580:201	3580:102 or 112	3580:101,2	
	3580:202	3580:201 or 211	3580:101,2,201	
	3580:211	3580:102 or 112	3580:101,2	
	3580:212	3580:201 or 211	3580:101,2,201	
	3580:301,2,3	3580:202	3580:101,2,201,2	
	3580:340	two of 3580:301,2,3	3580:101,2,201,2	
	3580:351,401,2,3	3580:301,2,3	3580:101,2,201,2	
	3580:404,5,6,10	3580:401,2,3	3580:101,2,201,2	
	3580:407,8	3580:340 and two of 3580:401,2,3	3580:101,2,201,2	
	3580:409, 11, 12, 15, 16, 18, 19, 22, 23, 25, 27, 30	3580:407 or 408	3580:101,2,201,2	
	3580:431,2	two of group 3580:401,2,3	3580:101,2,201,2	
Statistics	3470:262	3470:261	3470:261	

Discipline	Course	Prerequisite	Approved for Bypass Credit
College of Health Professions RN-BSN Sequence (Limited to Licensed Registered Nurses)			
	8200:336		8200:211, 217, 230, 350, 360, 370, 380, 410

College Level Examination Program (CLEP)

The College Level Examination Program (CLEP) is a national program that offers the opportunity to obtain college credit by examination. A variety of experiences may have prepared a person to earn college credit. The qualifying score required to receive credit for a specific course is determined by the Ohio Board of Regents and the Academic Department in which the course resides. Credits earned in this manner are included in the total credits completed but are not assigned a grade and do not count in the quality-point ratio, class standing, or graduation with honors calculations. CLEP examinations for credit toward any degree are not permissible in the term before graduation. Credit by CLEP may not be used to repeat for change of grade. CLEP tests are administered Monday through Friday, and on some Tuesday evenings. Contact the Counseling Center at 330-972-7084 to make a reservation and/or obtain more information. For more information regarding the CLEP information listed below, call 330-972-7066 or 330-972-7425.

The following guidelines outline the terms under which The University of Akron will accept the results of specified CLEP tests for college credit.

CLEP Test	Qualifying Score	Course(s) Awarded	Credit Awarded
Business			
Financial Accounting	50 and above	6200:201 Principles of Accounting I	3
Information Systems and Computer Applications	Course equivalency not determined at time of publication		
Introduction to Business Law	50 and above	6400:220 Legal and Social Environment of Business	3
Principles of Management	50 and above	6500:301 Management: Principles and Concepts	3
Principles of Marketing	50 and above	6600:300 Marketing Principles	3
Composition and Literature			
American Literature	Course equivalency not determined at time of publication		
Analyzing and Interpreting Literature	Course equivalency not determined at time of publication		
College Composition/College Composition Modular	Course equivalency not determined at time of publication		
English Composition	Course equivalency not determined at time of publication		
English Literature	Course equivalency not determined at time of publication		
Freshman College Composition plus essay	60 and above	3300:111 English Composition I	4
History and Social Sciences			
American Government	50 and above	3700:100 Government and Politics in the United States	4
History of the United States I	Course equivalency not determined at time of publication		
History of the United States II	Course equivalency not determined at time of publication		
Human Growth and Development	Course equivalency not determined at time of publication		
Intro. to Educational Psychology	Course equivalency not determined at time of publication		
Introductory Psychology	50 and above	3750:100 Introduction to Psychology	3

CLEP Test	Qualifying Score	Course(s) Awarded	Credit Awarded
Introductory Sociology	50 and above	3850:100 Introduction to Sociology	4
Principles of Macroeconomics	50 and above	3250:201 Principles of Macroeconomics	3
Principles of Microeconomics	Course equivalency not determined at time of publication		
Social Sciences and History	Course equivalency not determined at time of publication		
Western Civilizations I	Course equivalency not determined at time of publication		
Western Civilizations II	Course equivalency not determined at time of publication		
Modern Languages			
French Language	55 to 65	3520:101 Beginning French I	4
		3520:102 Beginning French II	4
German Language	66 and above	3520:101 Beginning French I	4
		3520:102 Beginning French II	4
		and	
	55 to 65	3520:201 Intermediate French I	3
		3520:202 Intermediate French II	3
		and	
Spanish Language	66 and above	3530:101 Beginning German I	4
		3530:102 Beginning German II	4
		and	
	55 to 65	3530:201 Intermediate German I	3
		3530:202 Intermediate German II	3
		and	
Spanish Language	66 and above	3580:101 Beginning Spanish I	4
		3580:102 Beginning Spanish II	4
		and	
	55 to 65	3580:201 Intermediate Spanish I	3
		3580:202 Intermediate Spanish II	3
		and	
Science and Mathematics			
Biology	50 and above	3100:103 Natural Science: Biology	4
Calculus	Course equivalency not determined at time of publication		
	50 and above	3150:101 Chemistry for Everyone	4
or			
3150:151 Principles of Chemistry I		3	
3150:152 Principles of Chemistry I Lab		1	
Chemistry	50 and above	or	
		3150:110 Intro to General, Organic and Biochemistry I	3
College Algebra	50 and above	3450:145 College Algebra	4
College Mathematics	Course equivalency not determined at time of publication		
Natural Sciences	Course equivalency not determined at time of publication		
Precalculus	Course equivalency not determined at time of publication		

Credit by Examination

A student interested in earning credits by special examination may do so with the permission of the dean of the student's college and the dean of the college in which a particular course is offered and by payment of a

special examination fee. The grade obtained in such an examination is not permitted in the semester before graduation. Credit by examination may not be used to repeat for change of grade.

International Baccalaureate

The University of Akron recognizes the academic quality of the International Baccalaureate (IB) program and the efforts of students enrolled in IB coursework by awarding advanced-standing credit for the completion of the IB Diploma. Higher level examination scores are considered for departmental credit in the areas of French, Spanish, German, Geography, Latin, Greek, Economics, Chemistry, History, English, Social Anthropology, Mathematics, Music and Physics. Although minimum scores for the awarding of credit may vary by subject area, generally scores of four or five are sufficient. No credit is awarded for IB Subsidiary examinations, with the exception of some foreign languages.

For additional information, contact the University College Dean's Office at 330-972-7066.

Military Credit

Ohio GI promise, created through Executive Order 2008-17S in July 2008, calls for all University System of Ohio institutions to participate in the Servicemembers Opportunity Colleges (SOC) Consortium. This membership guarantees that The University of Akron will work with veterans to award military credit towards degree completion.

Veteran students should request a copy of their credit from The American Council on Education (ACE) and send this transcript to the Transfer Student Services Center, Akron, Ohio 44325-2001. The credit will be evaluated and posted to the student's record upon enrollment at The University of Akron. Students should consult with academic advisers to determine how military training, experience and coursework credits can be used most effectively in meeting degree requirements.

Postsecondary Enrollment Options

The Postsecondary Enrollment Options (PSEO) was created by the Ohio legislature to allow high school students to enroll in a college or university. The program is available to qualified students who are enrolled in public and non-public high schools.

Through the PSEO, high school students are eligible to enroll in The University of Akron for the fall and spring semesters. Prospective students should work with their high school counselors to discuss specific high school policies.

Option A: allows students to receive college credit only. All costs associated with enrollment including, but not limited to, textbooks, materials, supplies, tuition and fees, are the responsibility of the student.

Option B: allows students to receive both high school graduation credit and college credit simultaneously. For public high school students, the college will be paid directly out of the public school's state funds. Non-public students are subsidized by a specific sum of money set aside by the Ohio General Assembly, and funds are awarded on a first-come, first-serve basis. Required textbooks, non-consumable materials and tuition and fees related to the coursework are provided for both public and non-public students.

Enrollment options are not intended to be a substitute for the academic programs, social growth or maturing experience provided by Ohio's public and private high schools or otherwise interfere with or replace advanced placement courses or the college preparatory curriculum available to students within their school system.

A student in grades 9-12 may enroll in the PSEO program. The PSEO programs are limited and selective. The University has the right to accept only as many qualified students as can be properly served.

Eligibility Requirements

For 11th and 12th grade participants:

- 3.30 cumulative GPA with a 24 ACT composite or combined 1110 SAT math and critical reading combined score, or 3.50 cumulative GPA with ACT/SAT scores for placement purposes (All students must submit an ACT/SAT score for placement purposes.)
- 11th and 12th graders may enroll in up to 14 credit hours per semester. If a student wishes to enroll in more than 14 credit hours per semester, he/she may appeal to the PSEO program coordinator.

For 9th and 10th grade participants:

- 3.75 cumulative GPA
- 26 ACT composite or 1150 SAT math and critical reading combined score
- Letter of recommendation from a guidance counselor supporting the student's preparedness for college level coursework
- Grade of at least a B+ in all English courses

- Write an essay, 500 words or less, regarding why the student wants to enroll in the program

Please note: 9th and 10th grade students may enroll in only one course per semester.

How to Apply for Admission

Application deadlines for the fall and spring semesters are May 15 and October 15, respectively. All application materials must be postmarked by the deadline to be considered for admission.

1. Complete the online [Undergraduate Admission Application](#) under the section "Applicant Status," check the box marked Postsecondary Options Programs Option A or B.
2. Student, parent or guardian, and high school counselor signatures are also required and should be submitted with other application materials. A signature form is provided online after you submit your completed online application.
3. Submit a non-refundable \$40 application fee (unless it has previously been paid). A credit card option payment is available on the online application.
4. Submit an official high school transcript. For applicants in the 8th grade, the transcript should include 7th and 8th grades. For applicants in the 9th grade, transcripts should include 8th and 9th grades.
5. Include the College Prep Form completed and signed by your high school guidance counselor.
6. Submit ACT and SAT score results. We prefer scores to be sent directly from the testing agency but will accept scores posted on the official high school transcript.

Information regarding acceptance into the PSEO program, registration for classes and academic advising will be forthcoming in the "acceptance packet" for the PSEO program.

Tech Prep

College Tech Prep is value-added education. This program integrates technical training and college preparatory academics beginning in high school and continuing through a minimum of an associate degree. College Tech Prep prepares students for highly skilled occupations supported by regional business and industry in the areas of business, information, health and engineering technologies. The College Tech Prep pathway is a skill-building curriculum jointly designed by business, high schools and colleges. The is pathway links the high school experience with a college degree program.

Application fees are waived for College Tech Prep students entering The University of Akron. Students have the potential to earn college credit, gain advanced skills and have a clearer sense of career direction while they are still in high school.

For additional information regarding the College Tech Prep programs, contact Nicole Mullet, Tech Prep Director, at 330-972-7112.

Tech Prep Postsecondary Enrollment Option

For Tech Prep students interested in the Postsecondary Enrollment Option, the entrance level grade point average (GPA) is 3.0 overall with a 21 or higher composite score on the ACT. The college may admit a students with a lower GPA and/or ACT on a case-by-case basis.

A Tech Prep students will be required to obtain a formal written recommendation letter from the high school (guidance counselor or principal) that indicates the support of the school and that the student shows promise in their technical field.

Tech Prep Postsecondary students will be limited to college coursework that directly related to the associate degree program in their specific Tech Prep Pathway. Students meeting the above requirements will be eligible for PSEO Option B (Option B allows students to receive high school graduation credits and college credit simultaneously. Textbooks, materials, tuition and fees related to the coursework are provided at public expense.)

Additionally, the application fee will be waived for Tech Prep Postsecondary students.

Interested Tech Prep students should take the following steps:

- Obtain a Tech Prep Postsecondary Enrollment Application from the Office of Admissions, The University of Akron, Akron, OH 44325-2001 or from their high school or career center guidance counselor
- Complete and return the application with the recommendation letter and required signatures to Kelly Herold, Tech Prep Director, The University of Akron, Akron, OH 44325-6001
- Information regarding acceptance into the program, registration for classes and academic advising will be forthcoming in a letter of admission to the Tech Prep Postsecondary Enrollment Options Program

Transfer Credit

The Transfer Credit policy is subject to the appropriate approval process and as such may be subject to change.

The University of Akron awards transfer credit for non-remedial, non-developmental college-level coursework completed with grades of "D-" or better at an institution of higher learning in the United States which is fully accredited or has been granted candidacy status by one of the following regional institutional accrediting agencies: Middle States Association of Colleges and Schools, Commission on Higher Education; North Central Association of Colleges and Schools, Higher Learning Commission; Northwest Commission on Colleges and Universities; Southern Association of Colleges and Schools, Commission on Colleges; Western Association of Schools and Colleges, Accrediting Commission for Community and Junior Colleges; Western Association of Schools and Colleges, Accrediting Commission for Senior Colleges and Universities. A summary of the number of credits accepted will be listed on the official academic transcript along with the name of the institution and dates of attendance.

No grade point value will appear on the record; and no grade point average will be calculated for the coursework listed. Transfer students shall be accorded the same class standing and other privileges as all other students on the basis of the number of credits earned. All residency requirements must be completed successfully at the receiving institution prior to the granting of a degree.

CLEP or Advanced Placement Credit posted on transcripts from previously attended regionally accredited Ohio colleges and universities is eligible for credit at The University of Akron. CLEP or Advanced Placement credit posted on transcripts from previously attended regionally accredited non-Ohio colleges and universities is not eligible for credit at The University of Akron. Students must present original documentation attesting to scores earned prior to receiving alternative credit considerations.

The University of Akron does not guarantee that a transfer student automatically will be admitted to all majors, minors or fields of concentration at the institution. For courses that have been taken at an institution of higher education noted in the reference above, the dean of the college in which the student intends to obtain a degree will specify which courses, other than General Education courses, will apply toward the degree requirements of the University. University College will specify which courses listed will apply toward the General Education program requirements.

Transfer students must meet all University of Akron residency requirements.

For other types of transferable credit, please see the section on Alternative Credit Options.

Note: Official transcripts and/or documentation for alternative credit can be obtained from the following web sites:

www.acenet.edu

www.collegeboard.com

www.collegeboard.org/clep

www.getcollegecredit.com



Requirements for Baccalaureate and Associate Degrees

A candidate for the baccalaureate or the associate degree must:

- File an application for graduation online with the Office of the University Registrar. If the candidate plans to complete degree requirements at the end of the fall semester, submit an application by or before July 1. If the plan is to complete degree requirements at the end of the spring semester, submit an application by or before December 1. Submit an application by or before April 1 for Summer Commencement.
- Earn a minimum of 128 credits for a baccalaureate degree, 64 credits for an associate degree (some programs of study may require more credits) with a minimum 2.00 grade point average as computed by the Office of the University Registrar for work attempted at the University consistent with the Repeating Courses policy. Some of the colleges may have by action of their faculties, adopted a higher grade-point average for graduation with a degree from that college. The grade point average achieved at the time of completion of requirements for a degree will include repeated and reassessed courses which will be used to calculate graduation honors.
- Meet all degree requirements including grade-point averages that are in force at the time a transfer is made to a degree-granting college. If the student should transfer to another major, then the requirements should be those in effect at the time of the transfer. For a student enrolled in an associate degree program in Summit College, the requirements shall be those in effect upon entrance into the program.
- For purposes of meeting foreign language requirements, all foreign language and "American Sign Language" courses apply for those programs that have a non-specific foreign language requirement. However, for those major or programs that specify specific language requirements, the applicable specific language requirement must be met to satisfy graduation requirements for that major or program.
- Be approved for graduation by appropriate college faculty, Faculty Senate and Board of Trustees.
- Complete the requirements for a degree in not more than five calendar years from the date of transfer, as defined below. In the event the student fails to complete the degree requirements within five calendar years from the date of transfer, the University reserves the right to make changes in the number of credits and/or courses required for a degree.
- The date of transfer for a student in a baccalaureate program will be the date that the student is accepted by the degree-granting college. For a student enrolled in an associate degree program in Summit College, the date of transfer refers to the date of entrance into the program.
- Complete a minimum of 32 earned credits in the baccalaureate degree total or a minimum of 16 credits in the associate degree total in residence at The University of Akron unless excused in writing by the dean of the college in which the student is enrolled if at least 32 credits (baccalaureate) or 16 credits (associate) have been earned at The University of Akron.
- If a student who has transferred from another institution wishes to present for the student's major fewer than 14 credits earned at The University of Akron, written permission of both the dean and the head of the department concerned is required.
- Discharge all other obligations at the University.

Level Status

The level status of each student is dependent upon the number of credit hours earned. The University identifies the following levels:

Senior 96 credit hours or higher

Will be Designated If the Overall Credits Earned Are

Senior	96 credit hours or higher
Junior	64-95.99 credit hours earned
Sophomore	32-63.99 credit hours earned
Freshman	0-31.99 credit hours earned

Requirements for Additional Baccalaureate and Associate Degrees

- Meet the requirements given above - Requirements for Baccalaureate and Associate Degrees
- Earn a minimum of 32 credits which have not counted toward a baccalaureate degree, for an additional baccalaureate degree, or 16 credits which have not counted toward an associate degree,

for an additional associate degree. These credits shall be earned in residence at The University of Akron.

Change of Requirements

To better accomplish its objectives and serve our students, the University reserves the right to alter, amend or revoke any rule or regulation. The policy of the University is to give advance notice of such change, whenever feasible.

Unless the change in a rule or regulation specifies otherwise, it shall become effective immediately with respect to the student who subsequently enters the University, whatever the date of matriculation.

Without limiting the generality of its power to alter, amend or revoke rules and regulations, the University reserves the right to make changes in degree requirements of the student enrolled prior to the change by:

- Altering the number of credits and/or courses required in a major field of study
- Deleting courses
- Amending courses by increasing or decreasing the credits of specific courses, or by varying the content of specific courses
- Offering substitute courses in the same or cognate fields

The Dean of the college, in consultation with the Department or Division Head of the student's major field of study, may grant waivers in writing if a change in rules affects degree requirements of a student enrolled before the change was effective. The action of the Dean of the college in granting or refusing a waiver shall be reviewed by the Senior Vice President and Provost and Chief Operating Officer on his motion, at the request of the Dean of the college of the student affected, or at the request of the student.

Credit and grade-point requirements for graduation as adopted by the college faculties are listed in this bulletin.

When deemed necessary and only in rare and unique circumstances that do not undermine the overall integrity of the various graduation requirements, the Senior Vice President and Provost and Chief Operating Officer, in consultation with the President, may waive specific requirements contained in this rule and report such waivers to the Board of Trustees for its information.

Graduation with Honors

Honors announced at the commencement ceremony are determined from the Grade Point Average as of the end of the term prior to the graduation term. The number of credit hours for the commencement ceremony included the total number of credit hours completed at The University of Akron plus the number of credit hours in progress at The University of Akron. Official honors are determined after ALL final grades have been reported on the academic record. All graded courses, including repeated and reassessed courses, are including in both determinations. The official honors designation will be posted to the diploma and academic transcript.

A student who holds a baccalaureate degree from an accredited institution, including The University of Akron, and who earns subsequent baccalaureate degree at The University of Akron per the academic policy requirements for second degrees, is eligible to graduate with honors.

1. For a student who is being awarded a baccalaureate degree and who has completed 64 or more credits at The University of Akron, the degree

Will be Designated If the Overall Grade Point Average Is

Cum Laude	between 3.4 and 3.59
Magna Cum Laude	between 3.60 and 3.79
Summa Cum Laude	3.80 or higher

A student who holds an associate degree from an accredited institution, including The University of Akron, and who earns a subsequent associate degree at The University of Akron per the academic policy requirements for second degrees, is eligible to graduate with honors.

2. For a student who is being awarded an associate degree and who has completed 32 or more credits at the University, the degree

Will be Designated If the Overall Grade Point Average Is

with distinction	between 3.4 and 3.59
with high distinction	between 3.60 and 3.79
with highest distinction	3.80 and higher

3. Where deemed necessary, the Senior Vice President and Provost and Chief Operating Officer may waive these requirements for rare and unique circumstances and report such waivers to the Board of Trustees for its information.



AP Exam	AP Score	Course(s) Awarded	Credits Awarded
Art History	3	• 7100:210, Visual Arts Awareness	3
	4	• 7100:210, Visual Arts Awareness • 7100:100, Survey of History of Art I	3 3
	5	• 7100:210, Visual Arts Awareness • 7100:100, Survey of History of Art I • 7100:101, Survey of History of Art II	3 3 3
Biology	3	• 3100:103, Natural Science: Biology	4
	4	• 3100:100, Introduction of Botany • 3100:103, Natural Science: Biology	4 4
	5	• 3100:111, Principles of Biology I • 3100:112, Principles of Biology II	4 4
Calculus AB	3, 4, or 5	• 3450:221, Analytic Geometry-Calculus I	4
Calculus BC	3, 4 or 5	• 3450:221, Analytic Geometry-Calculus I	4
		• 3450:222, Analytic Geometry-Calculus II	4
Chemistry	3	• 3150:101, Chemistry for Everyone • 3150:152, Principles of Chemistry I lab	4 1
	4 or 5	• 3150:151, Principles of Chemistry I • 3150:152, Principles of Chemistry I lab	4 1
Chinese Language and Culture	3	• 3500:101, Beginning Chinese I • 3500:102, Beginning Chinese II	4 4
	4	• 3500:101, Beginning Chinese I • 3500:102, Beginning Chinese II • 3500:201, Intermediate Chinese I	4 4 3
	5	• 3500:101, Beginning Chinese I • 3500:102, Beginning Chinese II • 3500:201, Intermediate Chinese I • 3500:202, Intermediate Chinese II	4 4 3 3

AP Exam	AP Score	Course(s) Awarded	Credits Awarded
Comparative Government & Politics	3	<ul style="list-style-type: none"> • 3700:150, World Politics & Governments * or • 3700:300, Comparative Politics * 	3 4
	4 or 5	<ul style="list-style-type: none"> • 3700:300, Comparative Politics 	4
Computer Science A	3, 4, or 5	<ul style="list-style-type: none"> • 3460:209, Computer Science I 	4
Computer Science AB	3 or 4	<ul style="list-style-type: none"> • 3460:209, Computer Science I 	4
	5	<ul style="list-style-type: none"> • 3460:209, Computer Science I • 3460:210, Computer Science II 	4 4
English Language	3, 4, or 5	<ul style="list-style-type: none"> • 3300:111, English Composition I 	4
English Literature	3, 4, or 5	<ul style="list-style-type: none"> • 3300:111, English Composition I 	4
English Language & English Literature	3, 4, or 5	<ul style="list-style-type: none"> • 3300:111, English Composition I 	4
		<ul style="list-style-type: none"> • 3300:250, Classic and Contemporary Literature 	3
Environmental Science	3, 4, or 5	<ul style="list-style-type: none"> • 3370:211, Introduction to Environmental Science 	3
European History	3	<ul style="list-style-type: none"> • 3400:211, Humanities in the Western Tradition II 	3
	4, or 5	<ul style="list-style-type: none"> • 3400:210, Humanities in the Western Tradition I • 3400:211, Humanities in the Western Tradition II 	4 3
French Language	3	<ul style="list-style-type: none"> • 3520:101, Beginning French I • 3520:102, Beginning French II 	4 4
	4	<ul style="list-style-type: none"> • 3520:101, Beginning French I • 3520:102, Beginning French II • 3520:201, Intermediate French I 	4 4 3
	5	<ul style="list-style-type: none"> • 3520:101, Beginning French I • 3520:102, Beginning French II • 3520:201, Intermediate French I • 3520:202, Intermediate French II 	4 4 3 3
French Literature	3	<ul style="list-style-type: none"> • 3520:101, Beginning French I 	4
		<ul style="list-style-type: none"> • 3520:102, Beginning French II 	4
		<ul style="list-style-type: none"> • 3520:201, Intermediate French I 	3

AP Exam	AP Score	Course(s) Awarded	Credits Awarded
	4 or 5	<ul style="list-style-type: none"> • 3520:101, Beginning French I • 3520:102, Beginning French II • 3520:201, Intermediate French I • 3520:202, Intermediate French II 	4 4 3 3
German Language	3	<ul style="list-style-type: none"> • 3530:101, Beginning German I • 3530:102, Beginning German II 	4 4
	4	<ul style="list-style-type: none"> • 3530:101, Beginning German I • 3530:102, Beginning German II • 3530:201, Intermediate German I 	4 4 3
	5	<ul style="list-style-type: none"> • 3530:101, Beginning German I • 3530:102, Beginning German II • 3530:201, Intermediate German I • 3530:202, Intermediate German II 	4 4 3 3
Human Geography	3, 4, or 5	<ul style="list-style-type: none"> • 3350:275, Geography of Cultural Diversity 	2
Italian Language and Culture	3	<ul style="list-style-type: none"> • 3550:101, Beginning Italian I • 3550:102, Beginning Italian II 	4 4
	4	<ul style="list-style-type: none"> • 3550:101, Beginning Italian I • 3550:102, Beginning Italian II • 3550:201, Intermediate Italian I 	4 4 3
	5	<ul style="list-style-type: none"> • 3550:101, Beginning Italian I • 3550:102, Beginning Italian II • 3550:201, Intermediate Italian I • 3550:202, Intermediate Italian II 	4 4 3 3
Japanese Language and Culture	3	<ul style="list-style-type: none"> • 3560:101, Beginning Japanese I • 3560:102, Beginning Japanese II 	4 4
	4	<ul style="list-style-type: none"> • 3560:101, Beginning Japanese I • 3560:102, Beginning Japanese II • 3560:201, Intermediate Japanese I 	4 4 3
	5	<ul style="list-style-type: none"> • 3560:101, Beginning Japanese I • 3560:102, Beginning Japanese II • 3560:201, Intermediate Japanese I • 3560:202, Intermediate Japanese II 	4 3 3 3
Latin Literature	3	<ul style="list-style-type: none"> • 3510:101, Beginning Latin I • 3510:102, Beginning Latin II 	4 4
	4	<ul style="list-style-type: none"> • 3510:101, Beginning Latin I • 3510:102, Beginning Latin II • 3510:201, Intermediate Latin I 	4 4 3

AP Exam	AP Score	Course(s) Awarded	Credits Awarded
	5	• 3510:101, Beginning Latin I	4
		• 3510:102, Beginning Latin II	4
		• 3510:201, Intermediate Latin I	3
		• 3510:202, Intermediate Latin II	3
Latin: Vergil	3	• 3510:101, Beginning Latin I	4
		• 3510:102, Beginning Latin II	4
		• 3510:201, Intermediate Latin I	3
	4 or 5	• 3510:101, Beginning Latin I	4
		• 3510:102, Beginning Latin II	4
		• 3510:201, Intermediate Latin I	3
		• 3510:202, Intermediate Latin II	3
Macroeconomics	3, 4 or 5	• 3250:201, Principles of Macroeconomics	3
Microeconomics	3, 4 or 5	• 3250:200, Principles of Microeconomics	3
Music Theory	3	• 7500:201, Exploring Music: Bach to Rock	4
	4 or 5	• 7500:121, Theory and Musicianship I	4
Physics B	3, 4 or 5	• 2820:161, Tech Physics: Mech I/lab	2
		• 2820:162, Tech Physics: Mech II/lab	2
		• 2820:163, Tech Physics: Electricity & Magnetism/lab	2
		• 2820:164, Tech Physics: Heat and Light/lab	2
Physics C: Electricity & Magnetism	3, 4 or 5	• 3650:292, Elem. Classical Physics II	4
Physics C: Mechanics	3, 4 or 5	• 3650:291, Elem. Classical Physics I	4
Psychology	3, 4 or 5	• 3750:100, Introduction to Psychology	3
Spanish Language	3	• 3580:101, Beginning Spanish I	4
		• 3580:102, Beginning Spanish II	4
	4	• 3580:101, Beginning Spanish I	4
		• 3580:102, Beginning Spanish II	4
		• 3580:201, Intermediate Spanish I	3
	5	• 3580:101, Beginning Spanish I	4
		• 3580:102, Beginning Spanish II	4
		• 3580:201, Intermediate Spanish I	3
		• 3580:202, Intermediate Spanish II	3

AP Exam	AP Score	Course(s) Awarded	Credits Awarded
Spanish Literature	3	<ul style="list-style-type: none"> • 3580:101, Beginning Spanish I • 3580:102, Beginning Spanish II • 3580:201, Intermediate Spanish I 	4 4 3
	4 or 5	<ul style="list-style-type: none"> • 3580:101, Beginning Spanish I • 3580:102, Beginning Spanish II • 3580:201, Intermediate Spanish I • 3580:202, Intermediate Spanish II 	4 4 3 3
Stastics	3	<ul style="list-style-type: none"> • 3470:260, Basic Statistics 	3
	4 or 5	<ul style="list-style-type: none"> • 3470:261, Introductory Statistics I • 3470:262, Introductory Statistics II 	2 2
Studio Art: 2-D Design	3	<ul style="list-style-type: none"> • 7100:210, Visual Arts Awareness 	3
	4	<ul style="list-style-type: none"> • 7100:XXX, Studio Art Elective 	3
	5	<ul style="list-style-type: none"> • 7100:144, Foundation 2-D Design 	3
Studio Art: 3-D Design	3	<ul style="list-style-type: none"> • 7100:210, Visual Arts Awareness 	3
	4	<ul style="list-style-type: none"> • 7100:XXX, Studio Art Elective 	3
	5	<ul style="list-style-type: none"> • 7100:145, Foundation 3-D Design 	3
Studio Art: Drawing	3	<ul style="list-style-type: none"> • 7100:210, Visual Arts Awareness 	3
	4 or 5	<ul style="list-style-type: none"> • 7100:XXX, Studio Art Elective 	3
U.S. Government & Politics	3, 4, or 5	<ul style="list-style-type: none"> • 3700:100, Government & Politics in the US 	4
U.S. History	3, 4, or 5	<ul style="list-style-type: none"> • 3400:250, United States History to 1877 	4
		<ul style="list-style-type: none"> • 3400:251, United States History Since 1877 	4
World History	3, 4, or 5	<ul style="list-style-type: none"> • 3400:221, Humanities in the World since 1300 	4
		<ul style="list-style-type: none"> • 9999:884, GE Humanities credit 	3



Colleges and Programs

The University of Akron offers comprehensive programs of instruction leading to the associate (two-year), bachelor's (four-year), master's (graduate), and doctoral (graduate or professional) degrees.

Buchtel College of Arts and Sciences

Buchtel College of Arts and Sciences is the largest and oldest degree-granting college at The University of Akron. In addition to providing a world-class education in an array of bachelor's, master's and doctoral degree programs, Buchtel College provides the majority of general education courses for the University. E.J. Thomas Performing Arts Hall, the region's flagship performance venue, is also a prominent part of the college.

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

The Fine Arts Division includes the Mary Schiller Myers School of Art; the Schools of Dance, Theatre, and Arts Administration; Music; and Family and Consumer Sciences. The Humanities Division includes the Departments of Anthropology and Classical Studies; English; Modern Languages; and Philosophy. The Natural Sciences Division includes the Departments of Biology, Chemistry, Computer Science, Geology and Environmental Science, Physics, Mathematics; and Statistics. The Social Sciences Division includes the Departments of Economics, History, Political Science, Psychology, Public Administration and Urban Studies (graduate only), Sociology, and the School of Communication.

Qualified students seeking hands-on career exploration experiences can enroll in internships and co-op opportunities. Students wishing to enrich their majors by completing a certificate, a minor or a double major are encouraged to do so. Interdisciplinary studies are readily available to Arts and Sciences students through the Humanities Division major, the Natural Sciences Division major, the Social Sciences Division major and the Bachelor of Arts Interdisciplinary Studies program.

www.uakron.edu/bcas

College of Business Administration

The College of Business Administration (CBA) is a professional college of the University that is dedicated to teaching, business research and public service. The College is accredited by The Association to Advance the Collegiate Schools of Business (AACSB) and offers accredited baccalaureate and master's degree programs during the day and evening. It is home to the George W. Daverio School of Accountancy, Department of Finance, Department of Management and Department of Marketing.

www.uakron.edu/cba/cba-home

College of Education

The 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. It develops itself and others through continuous improvement and through a commitment to these core components of professional practice and scholarship: Knowledge, Technology, Diversity and Ethics.

The College is home to the departments of Counseling, Curricular and Instructional Studies, Educational Foundations and Leadership, and Sport Science and Wellness Education, as well as numerous centers and clinics. The College's programs include a balanced offering of a foundation in general education, intensive study in the content area and professional courses and other learning experiences which combine theory and practice.

www.uakron.edu/education

College of Engineering

The College of Engineering provides educational opportunities for students at both the undergraduate and graduate levels who wish to pursue careers in engineering. The faculty in the College of Engineering perform research with the purpose of contributing new knowledge to the fields encompassed by engineering principles.

The College offers Bachelor of Science degrees in Biomedical Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Computer Engineering, Mechanical Engineering, Mechanical Polymer Engineering, Corrosion Engineering, Aerospace Systems Engineering and Engineering.

The College's co-op program, one of the oldest in the nation, enables student engineers to integrate classroom learning with on-the-job experience while they earn their degrees. Students can alternate semesters of paid employment in their major fields of interest with semesters on campus after they have completed five semesters of study.

- [About the College and Programs of Instruction](#)
- [College Website](#)

College of Health Professions

The College of Health Professions brings an interprofessional educational and collaborative approach to health care. This bold new approach significantly improves patient outcomes as doctors, nurses, dietitians, social workers and other health providers work together to treat the whole patient.

Students in nursing, dietetics, audiology, speech-language pathology, social work and other fields learn side by side so that as professionals, it will be natural to treat patients collaboratively.

Students benefit from close college ties with such health systems as the Cleveland Clinic Foundation, Summa Health System, Akron Children's Hospital, the Northeast Ohio Medical University and the Austin BioInnovation Institute in Akron. Students engage in state-of-the-art simulation experiences, gain clinical experience and spend ample time learning collaboratively with fellow students and seasoned professionals in many disciplines.

<http://www.uakron.edu/health/>

Honors College

The Honors College supports high achieving and highly motivated students with challenging curriculum options, honors classes, academic scholarships, priority in registration, priority assignment to rooms in the honors residence, and enhanced computer and study facilities. Honors College students who complete the requirements of their academic majors and of the Honors College with cumulative grade-point averages of at least 3.40 are recognized at graduation as University Honors Scholars.

<http://www.uakron.edu/honors/>

Summit College

Summit College offers associate and baccalaureate degree programs in a variety of technical areas, many of which are nationally accredited. It also offers certificates and minors, is home to the UA Police Academy, the Training Center for Fire and Hazardous Materials, the Center for Emergency Management & Homeland Security, and Workforce Development & Continuing Education at the University.

The College helps to further the goals and purposes of the University by emphasizing the following objectives:

- The College serves the student by providing the means to examine academic and career opportunities considering interests, abilities and achievements
- The College provides for industry, business, government agencies, health-care establishments and human service occupations; pre-service and in-service training for entry-level positions and/or advancement in employment
- Consistent with the philosophy of learning as a life-long experience, the College provides educational opportunities for the student no matter the age, background or need; full- or part-time, day or evening
- The College provides quality instruction with qualified and experienced teachers who are encouraged to use the community as a "laboratory" for achieving educational goals

<http://www.uakron.edu/summitcollege/>

Wayne College

To meet the needs of the citizens of Wayne, Holmes and Medina counties, The University of Akron Wayne College opened its doors in 1972. Wayne College offers technical programs and certificate programs, as well as the first 64 credits of many baccalaureate programs. The following degrees are available from The University of Akron Wayne College: Associate of Arts; Associate of Science; Associate of Technical Studies; Associate of Applied Business in Business Management Technology; Health Care Office Management and Computer and Business Technology; Associate of Applied Science in Paraprofessional Education, Social Services Technology and Exercise Science Technology.

<http://wayne.uakron.edu/>

Graduate School

www.uakron.edu/gradsch

The Graduate School offers advanced study to students who wish further education beyond the baccalaureate degree with programs leading to the master's degree as well as the doctoral degree. A separate publication detailing admission procedures and individual study requirements for graduate work is available from the Graduate School.

The *Graduate Bulletin* may be obtained online at www.uakron.edu/gradsch

Graduate School,
The University of Akron,
Polsky Building, Room 469,
Akron, OH 44325-2101

School of Law

www.uakron.edu/law

The School of Law provides legal education through day and evening classes and full and part-time programs leading to the Juris Doctor degree. An applicant must take the Law School Admission Test and have a baccalaureate degree from an accredited college or university for J.D. admission. No particular course of undergraduate study is required for admission. A separate publication detailing admission requirements and the procedure for applying may be obtained by calling (330) 972-7331, or (800) 4-AKRON-U, or by e-mail: lawadmissions@uakron.edu.

You may also write to:

Assistant Dean of Admissions, Financial Aid & Student Services

School of Law
The University of Akron
Akron, OH 44325-2901

College of Polymer Science and Polymer Engineering
www2.uakron.edu/cpspe

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 Departments of Chemical Engineering and Mechanical Engineering for undergraduate students interested in the polymer industry. An option has been developed in the Buchtel 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 was started in fall 1995. Students in this program are admitted in the College of Engineering.

University - Additional Locations

<http://www.uakron.edu/provost/about/additional-locations.dot>

The University operates five educational centers in our surrounding communities.

Baccalaureate Programs

The University of Akron believes that the student should master basic courses in the humanities, social sciences, and physical sciences before proceeding to advanced work in the major. Both the University College concept and Summit College's College Success Program guarantee this mastery. Direct, Standard or Adult admit students seeking a baccalaureate degree and having attained less than 30 college semester credits study in the University College before transferring to a degree-granting college. General admit students seeking a baccalaureate degree study in Summit College's College Success Program before transferring to a degree-granting college. Studies in the University College develop students' abilities to understand and express ideas effectively and to comprehend the processes involved in accurate thinking. After completing the general studies phase, students are admitted to a degree-granting college, where they then concentrate on courses in their specific academic interests. Baccalaureate programs are offered in a variety of disciplines.

Associate Programs

Our fast-paced age of technological development needs persons specifically trained for work in the semiprofessional, technical, and highly skilled professions. Most critically needed are laboratory technicians, health technicians, engineering assistants, sales people, supervisors, secretaries, and management assistants.

Certificate Programs

Students may add a dimension of depth to their education beyond a chosen major by pursuing one of the University's interdisciplinary or interdepartmental programs, which provide concentrated work in the following areas.

For a full listing of Baccalaureate, Associate, and Certificate Programs: www.uakron.edu/academics_majors/undergraduate_programs/index.dot



College of Engineering

Objectives

The College of Engineering provides educational opportunities for students at both the undergraduate and graduate levels who wish to pursue careers in engineering. The faculty in the College of Engineering perform research with the purpose of contributing new knowledge to the fields encompassed by engineering principles. Professional service is in concert with the objectives of the University.

College Requirements

Admission

To be admitted to the College, the student must have a) completed 30 credits of coursework at UA; b) completed the second course of Analytical Geometry- Calculus 2; and c) received "C-" or better in all required math courses that were attempted less than three times, or at least a "B" for any such course attempted a third time. The student must have no more than three grades for any one course and no more than six "repeats for change of grade." The student must have a 2.3 grade-point average in three of the following areas: overall, engineering, math, and science.

Students accepted into the University Honors College as engineering majors are automatically admitted to the College of Engineering. Incoming freshmen with appropriate credentials may receive direct admission to the College upon application (See [University Admissions](#) in Support Services for Students).

Direct Admission

A new first-year student can be a Direct admit to the College of Engineering if they meet three out of four of the following requirements:

- Have a high school grade point average of 3.3 or higher
- Have ACT scores of at least 24 (composite) and 24 (math), or SAT scores of at least 1100 (composite) and 560 (math)
- Have taken four units of high school mathematics, including trigonometry, with a B average or better (if currently enrolled in trigonometry, they must have at least a 3.5 HS GPA), and
- Have taken a high school chemistry course with a B or better (if currently enrolled in chemistry, they must have at least a 3.5 HS GPA)

Transfer Students

Students transferring into the College of Engineering from universities other than The University of Akron must satisfy the same College of Engineering Admission requirements as those students from The University of Akron.

Continuation in the Baccalaureate Programs

Academic Warning/Probation/Suspension/Dismissal

A student's term and cumulative GPA determine if a student is in "good standing" or on "academic warning", "probation", "suspension" or dismissed from the College of Engineering. Evaluation is done at the end-of-term based on the term GPA and the cumulative GPA. Specific details on the process are found at http://www.uakron.edu/engineering/academics/images/COE_WPSD_policy.pdf

Students are on academic warning if their term GPA drops below a 2.0, but their cumulative GPA is above a 2.0. Continued poor performance or if a student's cumulative GPA drops below a 2.0, they are placed on academic probation. Students on academic probation may not register for classes without first consulting a faculty advisor and obtaining permission to take an approved group of courses. Those students will have academic "holds" placed on their account and cannot register for classes until such a meeting occurs. Students whose performance does not improve on academic probation are suspended from the College; while suspended, they are provided a contract (agreed to by the Associate Dean for Undergraduate Studies

and the student). If the student does not meet the terms of the contract, they are dismissed from the College of Engineering. If the student's cumulative GPA at the time of dismissal is below a 2.0, they are also dismissed from The University of Akron.

Degrees

The College offers Bachelor of Science degrees in Biomedical Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Computer Engineering, Mechanical Engineering, Mechanical Polymer Engineering, Corrosion Engineering, Aerospace Systems Engineering and Engineering.

Requirements for Graduation

- Compliance with [University requirements](#)
- Completion of the requirements in the appropriate list of courses and a minimum of 136-140 credits of coursework
- Recommendation of the student's department
- Achievement of 2.00 grade point average in all engineering coursework attempted with 4XXX course prefix

Engineering Accreditation

Engineering is a profession in which knowledge of mathematics and natural sciences, gained by study, experience, and practice, is applied, with judgement, to develop ways to economically utilize the materials and forces of nature for the benefit of mankind.

Admission to the engineering profession is normally through a university undergraduate program in one of the disciplines of engineering. Curricular criteria are established by academic and industrial representatives that sit on the accrediting board, ABET, Inc. The curricular criteria under which Akron's Engineering programs are currently accredited are:

- One year of mathematics and basic science
- One-half year of humanities and social sciences
- One year of engineering science
- One-half year of engineering design

In addition, the ABET Criteria requires that (1) each program shall make a formal assessment of each student's ABET Required Abilities and (2) that a process must exist by which the student assessments can be used to modify the educational delivery process. The ABET Required Student Abilities are:

- An ability to apply knowledge of mathematics, science, and engineering
- An ability to design and conduct experiments, as well as to analyze and interpret data
- An ability to design a system, component, or process to meet desired needs
- An ability to identify, formulate, and solve engineering problems
- An ability to communicate effectively
- An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
- An ability to function on multidisciplinary teams
- An understanding of professional and ethical responsibility
- The broad education necessary to understand the impact of engineering solutions in global and societal context
- A recognition of the need for, and an ability to engage in life-long learning
- A knowledge of contemporary issues

The Biomedical Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Mechanical Engineering and Mechanical Polymer Engineering programs are accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

Cooperative Education

The optional cooperative education program provides for a coordinated sequence of alternating periods of classroom instruction and employment during a five-year program.

The cooperative program simultaneously provides for the development of fundamental principles in the classroom and for their application in practice. The student has the opportunity to find the type of work and organization in which the student can best apply individual ability. The student gains an appreciation of the problems of labor and management by first-hand experience. The student develops mature judgement by coping with everyday problems. The employer of a coop student has the ability to train and select a student whose abilities and aptitudes can be adapted to the needs of technical staff requirements.

While a student is at work, all rules and regulations prescribed by the employer must be obeyed. In addition, the student is subject to all current labor laws and conditions. The student is considered a full-time student by the University while on industrial assignments.

The University does not guarantee employment, but makes every effort to place a student in the best learning situation that is consistent with the acquisition of sound professional experience.

Programs of Instruction

- **4200: Chemical Engineering**
- **4250: Corrosion Engineering**
- **4300: Civil Engineering**
- **4400: Electrical Engineering**
- **4450: Computer Engineering**
- **4600: Mechanical Engineering**
- **4700: Mechanical Polymer Engineering**
- **4800: Biomedical Engineering**
- **4900: Aerospace Systems Engineering**
- **Bachelor of Science in Engineering**



4200: Chemical Engineering

[Return to the College of Engineering](#)

The Department of Chemical & Biomolecular Engineering (CBE) helps students develop intellectual capacity and the ability to apply the principles of transport phenomena, thermodynamics, and chemical reaction kinetics to the creative resolution of technological problems.

All engineers are trained in the application of mechanics, materials, economics, systems, and controls. Chemical and biomolecular engineers, however, apply chemical principles to design, evaluate, build, and operate systems capable of converting inexpensive raw materials into marketable products via chemical reactions, biological processes, and physical separations.

Graduates of the CBE department find career opportunities in the chemical process industries, usually involving polymer production, petroleum refining, environmental remediation, materials research and development, process design and development, and process operations and control. In addition, chemical engineers are increasingly in demand in such areas of current interest as process simulations, biotechnology, supercritical fluid processes, and solids processing. Critical thinking skills developed throughout the curriculum enable chemical engineers to succeed in other fields including medicine, patent law, and international business.

The Chemical & Biomolecular Engineering Department maintains a balance between theory and practice to prepare students for careers in a highly technical global society. The curriculum stresses the integration of mathematics, science, and chemical engineering fundamentals throughout the program. At each level of the program, from freshman through seniors, students have the opportunity to gain experience in a wide range of emerging technologies through laboratory courses and design or research electives. Exciting work is performed in biocompatible polymeric materials, biological cellular and enzymatic processes, nanocomposite materials, chemical vapor deposition, computational molecular science, microscale separations, advanced process control, green chemistry, and novel catalytic reactions. Students are also encouraged to gain important practical experience through the optional cooperative education program.

Mission: The goal of the Chemical & Biomolecular Engineering Department is to prepare baccalaureate graduates with the necessary skills so that they can contribute to a highly technical global society through their professional careers. The philosophy of the Chemical & Biomolecular Engineering faculty is to provide a strong theoretical foundation supported by practical applications of that knowledge, which is consistent with the mission of The University of Akron.

The specific Program Educational Objectives of the chemical engineering program are that:

1. Our graduates will apply their technical proficiency to make positive contributions as chemical engineers or any other career path they choose.
2. Our graduates will continue life-long learning through professional activities and training, the pursuit of higher educational degrees, and individual professional improvement.
3. Our graduates will contribute to the professional practice of their chosen field through effective communication, leadership, teamwork and service, while exhibiting high ethical and professional standards.

The Chemical Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. The following student outcomes describe what students are expected to know and be able to do by the time of graduation with a B.S. degree in Chemical Engineering from The University of Akron:

- Have a good grounding in chemistry and working knowledge of advanced chemistry.
- Can relate chemical structure to material properties.
- Able to apply first principles to analyze and solve chemical engineering problems, including comprehensive open-ended design problems.
- Develop experiments from proposed hypotheses and interpret data.
- Pose and develop practical solutions to chemical engineering problems which include the limitations of environmental, safety, ethical, and economic issues.
- Design and select optimal processes for chemical production
- Select and use computational tools to design, analyze and solve chemical engineering problems.
- Work effectively in teams.

- Write and speak effectively in a technical setting.
- Independently assimilate new concepts to facilitate life-long learning.
- A knowledge of contemporary issues.

The Chemical Engineering program provides a unique opportunity to master teamwork and design project management skills. Teams of freshmen through senior Chemical Engineering undergraduates work on a realistic chemical engineering design project. Besides experience with a range of current chemical engineering topics, the projects allow students to develop teamwork, communication, presentation, project management and information technology skills. Many teams are mentored by practicing chemical engineers from industry. The Chemical Engineering curriculum consists of:

General Education — 29 credits including Credits

3250:244 Introduction to Economic Analysis 3

Natural Science

Credits

3150:151,2,3 Principles of Chemistry I, Chem I Lab, Principles of Chemistry II 7	
3150:151,2,3 Principles of Chemistry I, Chem I Lab, Principles of Chemistry II 7	
3150:154 Qualitative Analysis	2
3450:221,2,3 Analytic Geometry-Calculus I, II, III	12
3450:335 Introduction to Ordinary Differential Equations	3
3450:xxx Advanced Mathematics Elective	2
3650:291,2 Elementary Classical Physics I, II	8

Advanced Chemistry

Credits

3150:263,4 Organic Chemistry I, II	6
3150:265 Organic Chemistry Laboratory 2	
3150:313,4 Physical Chemistry I, II	6

Engineering Core

Credits

4200:121 Chemical Engineering Computations 2	
4200:305 Materials Science	2
4300:201 Statics	3
4400:320 Basic Electrical Engineering	4

Chemical Engineering

Credits

4200:101 Tools for Chemical Engineering	2
4200:110 Project Management and Teamwork I	1
4200:200 Material and Energy Balances	4
4200:210 Project Management and Teamwork II	1
4200:225 Equilibrium Thermodynamics	4
4200:310 Project Management and Teamwork III	1
4200:321 Transport Phenomena	3
4200:330 Chemical Reaction Engineering	3
4200:341 Process Economics	2
4200:351 Fluid and Thermal Operations	3
4200:353 Mass Transfer Operations	3
4200:360 Chemical Engineering Laboratory	3
4200:410 Project Management and Teamwork IV	1
4200:435 Process Analysis and Control	3
4200:441 Process Design I	3
4200:442 Process Design II	3

Electives

Credits

Advanced math elective	2
9871:407 or Advanced Chemistry Elective	3
Engineering Design Elective	3
Chemical Engineering Science Electives	3

Students are required to achieve a C- or better in course 4200:200 to continue taking 4200:353.

Biotechnology Specialization Certificate

Chemical Engineering students may choose to specialize in biotechnology. The goal of this program is to allow engineering students to prepare careers or graduate study in biotechnology or in the medical fields without reducing their potential for careers in traditional chemical engineering. Students will have ample opportunity to work with researchers in biotechnology through their engineering and design electives.

Students who complete this specialization are exempt from Credits

3150:313, 314	Physical Chemistry I, II
4200:305	Materials Science

Required courses

	Credits
3100:111, 112 Principles of Biology I, II	8
3100:311 Cell and Molecular Biology	4
or	
3100:331 Microbiology	4
3150:401 Biochemistry Lecture (satisfies Advanced Chemistry Elective)	3

Chemical Engineering elective (minimum 3 credits) must be chosen from the following list

	Credits
4200:194 Chemical Engineering Design I (with permission)	1
4200:294 Chemical Engineering Design II (with permission)	1-2
4200:394 Chemical Engineering Design III (with permission)	1-3
4200:472 Separation Processes in Biochemical Engineering	3
4200:473 Bioreactor Design	3
4200:494 Design Project (with permission)	3
4200:496 Topics in Chemical Engineering (with permission)	3
4200:497 Honors Project (with permission)	3
4200:499 Research Project (with permission)	1-3
4800:360 Biofluid Mechanics	3
4800:400 Biomaterials	3

Design Electives (minimum 3 credits)

	Credits
4200:194 Chemical Engineering Design I (with permission)	1
4200:294 Chemical Engineering Design II (with permission)	1-2
4200:394 Chemical Engineering Design III (with permission)	1-3
4200:473 Bioreactor Design	3
4200:494 Design Project (with permission)	3
4200:496 Topics in Chemical Engineering (with permission)	3
4200:497 Honors Project (with permission)	1-3
4200:499 Research Project (with permission)	1-3
4300:482 Special Projects (with permission)	3
4800:485 Special Topics in Biomedical Engineering	1-3

Polymer Engineering Specialization Certificate

Required Credits

4200:408 Polymer Engineering	3
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Chemical Engineering students must select one course from the Polymer Engineering group and one course from the Polymer Science group:

Polymer Engineering Group

	Credits
4200:461 Solids Processing	3
4700:425 Introduction to Blending and Compounding of Polymers	3
4700:427 Mold Design	3

Polymer Science Group

9871:401 Introduction to Elastomers	3
9871:402 Introduction to Plastics	3

Polymer Engineering Group**Credits**

9871:407 Polymer Science (satisfies Advanced Chemistry elective) 4

BS/MS in Chemical Engineering

The five-year BS/MS program in Chemical Engineering provides superior undergraduate students with the opportunity to complete a master's of science degree in Chemical Engineering with an additional year of study beyond their bachelors degree. The program is only available to bachelor of science Chemical Engineering students at The University of Akron. Applications are accepted in the spring of the junior year.

4200:600 Transport Phenomena	3
4200:605 Chemical Reaction Engineering	3
4200:610 Classical Thermodynamics	3
4200:631 Chemical Engineering Analysis	3
Chemical Engineering Electives	3
Approved Electives	6
Approved Mathematics	3
Master's Thesis	6



4250: Corrosion Engineering

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The corrosion engineering degree program is a comprehensive engineering program that incorporates the fundamental and applied aspects of aqueous and high temperature corrosion. The program incorporates laboratory and project management experiences throughout the curriculum. Students will be prepared to enter into the engineering workforce and make an impact in industries including Refining, Transportation Systems, Water Distribution, Energy, Food and Chemical Processing and others.

The corrosion engineering program is administered by the Department of Chemical and Biomolecular Engineering. The goal of the Chemical & Biomolecular Engineering Department is to prepare baccalaureate graduates with the necessary skills so that they can contribute to a highly technical global society through their professional careers. The philosophy of the department is to provide a strong theoretical foundation supported by practical applications of that knowledge, which is consistent with the mission of The University of Akron.

The specific educational objectives of the corrosion engineering program are that:

1. Our graduates will apply their technical proficiency to make positive contributions as chemical engineers or any other career path they choose
2. Our graduates will continue life-long learning through professional activities and training, the pursuit of higher educational degrees, and individual professional improvement
3. Our graduates will contribute to the professional practice of their chosen field through effective communication, leadership, teamwork and service, while exhibiting high ethical and professional standards

Graduates of the Corrosion Engineering Program must be able to:

- Apply knowledge of mathematics, science, and engineering
- Apply their knowledge of materials and mechanical properties of materials
- Design and conduct experiments, as well as analyze and interpret data
- Design a system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety manufacturability, and sustainability
- Function on multidisciplinary teams
- Identify, formulate and solve corrosion engineering problems
- Understand professional and ethical responsibility
- Communicate effectively
- Understand the impact of engineering solutions in a global, economic, environmental and societal context
- Recognize the need for, and an ability to engage in lifelong learning
- Demonstrate knowledge of contemporary issues
- To use the techniques, skills and modern engineering tools necessary for engineering practice.

The Corrosion Engineering curriculum consists of:

General Education — 29 credits

Natural Science	Credits
3150:151 Principles of Chemistry I	3
3150:152 Principles of Chemistry I Lab	1
3150:153 Principles of Chemistry II	3
3150:154 Qualitative Analysis	2
3450:221 Calculus I	4
3450:222 Calculus II	4
3450:223 Calculus III	4
3450:335 Differential Equations	3
3650:291 Elem. Classical Physics I	4
3650:292 Elem. Classical Physics II	4

Advanced Chemistry	Credits
3150:263 Organic Chemistry I	3
3150:264 Organic Chemistry II	3
3150:265 Organic Chemistry Lab 2	
3150:423 Analytical Chemistry I	3
Engineering Core	Credits
4300:201 Statistics	3
4200:320 Basic Electrical Eng.	4
4600:380 Mechanical Metallurgy	2
4200:225 Equilibrium Thermodynamics	4
Corrosion Engineering	Credits
4250:101 Tools for Corrosion Engineering	2
4250:105 Materials Science for Corrosion Engineering	2
4200:110 Proj. Mgt. & Teamwork I	1
4200:210 Proj. Mgt. & Teamwork II	1
4200:310 Proj. Mgt. & Teamwork III	1
4200:410 Proj. Mgt. & Teamwork IV	1
4250:200 Matter and Energy Balances	4
4250:300 Fund. of Aqueous Corrosion	3
4250:310 Fund. of Dry Corrosion	3
4250:311 High Temperature Corrosion Lab	1
4250:301 Aqueous Corrosion Lab 1	1
4250:305 Corrosion Prevention (Aq)	3
4250:306 Aqueous Corrosion Lab 2	1
4250:340 Corrosion Prevention (Dry)	3
4300:202 Mechanics of Solids	3
4250:440 Corrosion Management I	3
4250:441 Corrosion Management II	3
Electives	Credits
Corrosion Engineering Electives	6
Design Electives	6



4300: Civil Engineering

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Civil Engineers plan, design, build, and operate the infrastructure of modern society. This includes highways, bridges, buildings, power plants, industrial facilities, tunnels, seaports, airports, offshore structures and almost anything else needed as the basis of modern life. Civil engineers are also vigorously engaged in environmental activities, particularly creating safe water supplies and transporting it to where it is needed, collecting and treating wastewaters, cleanup of environmental problems, and insuring the safe disposal of solid wastes.

To achieve the high level of professional competence needed, an extensive study of mathematics, mechanics (both solids and fluids), engineering materials, structural design and environmental reactions is required. The civil engineering sub-topics that utilize these fundamentals are environmental, geotechnical, hydraulic, structural, and transportation engineering. The civil engineering curriculum at The University of Akron insures a firm grounding in all these sub-topic areas, while allowing a specialization, if desired, in the environmental, geotechnical, transportation, and structural areas. Engineering design problems are incorporated into courses in each area. The senior capstone design course presents a problem involving one, or possibly all, of these areas in the design of complex systems.

Most civil engineering graduates work for design consultants, construction companies, or governmental agencies. Others work for industrial firms and utilities. Many civil engineers own their own businesses.

Program Educational Objectives have been established that represent the projected abilities of a program graduate within a few years of graduation. The Civil Engineering Program Educational Objectives are the foundation of the program. The Civil Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

Program Objective #1: Successfully and accurately complete Civil Engineering projects as part of a team, on time and within budget, in an ethical and professional manner, and using modern engineering tools-software.

Program Objective #2: An ability to communicate effectively with written, oral, and visual means in both technical and non-technical settings.

Program Objective #3: Professional service as evidenced by participation in a professional society and/or educational outreach activities.

Program Objective #4: Engage in lifelong learning as evidenced by participation in continuing education courses, workshops, graduate courses, and by pursuing professional licensure.

Program Objective #5: A basic knowledge of the business of engineering including how the private and public sector operate separately and collectively.

The curriculum is designed to emphasize the fundamentals which place the graduate in a strong position to pursue further education, formally or informally, and to begin a career in any of the above areas. To meet the curriculum requirements specified by the American Society of Civil Engineers (ASCE) for ABET accreditation, the civil engineering program will prepare students who have the following attributes:

Foundational

- Solve problems in mathematics through differential equations and apply this knowledge to the solution of engineering problems
- Solve problems in calculus-based physics, chemistry, and one additional area of natural science and apply this knowledge to the solution of engineering problems
- Demonstrate the importance of the humanities in the professional practice of engineering
- Demonstrate the incorporation of social sciences knowledge into the professional practice of engineering

Technical

- Use knowledge of materials science to solve problems appropriate to civil engineering
- Analyze and solve problems in solid and fluid mechanics

- Specify an experiment to meet a need, conduct the experiment, and analyze and explain the resulting data
- Formulate and solve an ill-defined engineering problem appropriate to civil engineering by selecting and applying appropriate techniques and tools
- Evaluate the design of a complex system, component, or process and assess compliance with customary standards of practice, user's and project's needs, and relevant constraints
- Analyze systems of engineered works, whether traditional or emergent, for sustainable performance
- Analyze the impact of historical and contemporary issues on the identification, formulation, and solution of engineering problems and analyze the impact of engineering solutions on the economy, environment, political landscape, and society
- Analyze the loading and capacity, and the effects of their respective uncertainties, for a well-defined design and illustrate the underlying probability of failure (or nonperformance) for a specified failure mode
- Formulate documents to be incorporated into the project plan
- Analyze and solve well-defined engineering problems in at least four technical areas appropriate to civil engineering
- Evaluate the design of a complex system or process, or evaluate the validity of newly created knowledge or technologies in a traditional or emerging advanced specialized technical area appropriate to civil engineering

Professional

- Plan, compose, and integrate the verbal, written, virtual, and graphical communication of a project to technical and non-technical audiences
- Apply public policy process techniques to simple public policy problems related to civil engineering works
- Apply business and public administration concepts and processes
- Analyze engineering works and services in order to function at a basic level in a global context
- Organize and direct the efforts of a group
- Function effectively as a member of a multidisciplinary team
- Demonstrate attitudes supportive of the professional practice of civil engineering
- Plan and execute the acquisition of required expertise appropriate for professional practice
- Justify a solution to an engineering problem based on professional and ethical standards and assess personal professional and ethical development

General Education — 29 credits

Natural Science

	Credits
3150:151,2,3 Principles of Chemistry I, Chem I Lab, Principles of Chemistry II	7
3370:105 Physical Geology for Engineers	3
3450:221,2,3 Analytic Geometry-Calculus I, II, III	12
3450:335 Introduction to Ordinary Differential Equations	3
3650:291,2 Elementary Classical Physics I, II	8

Engineering Core

	Credits
4300:101 Tools for Civil Engineering	3
4300:201 Statics	3
4300:202 Introduction to Mechanics of Solids	3
4400:320 Basic Electrical Engineering	4
4600:203 Dynamics	3
4600:305 Thermal Science	2
4600:310 Fluid Mechanics	2

Civil Engineering

	Credits
4300:120 Introduction to Civil Engineering Design	2
4300:230 Surveying	3
4300:306 Theory of Structures	3
4300:313 Soil Mechanics	3
4300:314 Geotechnical Engineering	3
4300:321 Intro to Environmental Engineering	3
4300:323 Water Supply and Pollution Control	3
4300:341 Hydraulic Engineering	4
4300:361 Transportation Engineering	3
4300:380 Engineering Materials Laboratory	3
4300:390 Civil Engineering Seminar	1
4300:401 Steel Design	3

Civil Engineering	Credits
4300:403 Reinforced Concrete Design	3
4300:443 Applied Hydraulics	3
4300:471 Construction Administration	3
4300:490 Senior Design	3
Electives	Credits
Technical Electives	6
Statistics Elective (Choose one of the following):	
3470:401 Probability and Statistics for Engineers	2
3470:461 Applied Statistics	4
Approved Statistics course	2-3



4400: Electrical Engineering

[Return to the College of Engineering](#)

Electrical Engineering Fundamentals

Every aspect of modern life is influenced by electrical engineers. They design and develop systems ranging from massive power grids and global communications networks to tiny integrated circuits inside computers and personal electronics. Branches of electrical engineering include communications, controls, electromagnetics, electronics, and power systems. Important applications include power generation and distribution, sustainable energy systems, manufacturing automation, aerospace systems, robotics, sensors and instrumentation, imaging systems, and many others.

The Electrical Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. Our comprehensive curriculum prepares students to identify, formulate, and execute solutions to real-world problems. Students learn how to use modern engineering tools in well-equipped laboratories, with activities that reinforce the concepts learned in the classroom. The curriculum emphasizes design and teamwork, and culminates in a capstone senior design project that integrates the material learned in earlier courses. Our well-established co-op program enables students to strengthen the connections between theory and practice in a professional setting, and provides valuable industrial experience.

The educational objectives of the Electrical Engineering program are that its graduates:

- Achieve competitively compensated electrical engineering positions or entry into programs of advanced study, in areas of their interest
- Prove to be highly competent and productive in electrical engineering and related practice
- Continue to develop professionally through both practical experience and a lifelong commitment to learning, and
- Exhibit high standards of ethical conduct and societal responsibility in engineering.

In order to achieve these objectives, students graduating from the Electrical Engineering program:

- Are able to apply mathematics, science, and engineering knowledge to the identification, formulation, and solution of electrical engineering problems
- Have specialized engineering knowledge in areas of interest related to career objectives
- Are able to design systems, components, or processes to meet client needs
- Can design and conduct experiments and interpret technical data
- Are able to work effectively in interdisciplinary teams and within engineering organizations
- Are proficient in technical communications, oral, written, and visual
- Are able to use tools of modern engineering practice effectively, including standard instruments, computational and presentation software, engineering libraries and the Internet
- Have the ability and motivation to extend their competence into new areas
- Understand safety issues in electrical engineering
- Understand environmental issues in electrical engineering
- Understand intellectual property issues in electrical engineering
- Understand societal impact issues in electrical engineering
- Understand professional ethics in electrical engineering

General Education — 29 credits

Natural Science	Credits
3150:151,2 Principles of Chemistry I, Chem I Lab	4
3450:221,2,3 Analytic Geometry-Calculus I, II, III	12
3450:335 Introduction to Ordinary Differential Equations	3
3470:401 Probability and Statistics for Engineers	2
3650:291,2 Elementary Classical Physics I, II	8

Engineering Core	Credits
4200:305 Materials Science	2

or

Engineering Core	Credits
4600:305 Thermal Science	2
4300:201 Statics	3
4300:202 Introduction to Mechanics of Solids	3
or	
4600:203 Dynamics	3
4450:208 Programming for Engineers	3

Electrical Engineering	Credits
4400:101 Tools for Electrical Engineers	3
4400:231,332 Circuits I, II*	6
4400:230,330 Circuits Laboratory I, II	2
4400:309 Design Project Seminar - Electrical Engineering	1
4400:340 Signals and Systems	4
4400:341 Introduction to Communication Systems	3
4400:353,4 Electromagnetics I, II	7
4400:360 Physical Electronics	3
4400:361 Electronic Design	4
4400:371 Control Systems I	4
4400:381 Energy Conversion	4
4400:401,2 Senior Design Project - Electrical Engineering I, II+	5
4450:220 Digital Logic Design	4

Electives Credits

Electrical Engineering electives** 18

* Electrical Engineering majors must achieve C- or better in 4400:231 Circuits I to take 4400:332 Circuits II.

+ Enrollment requires completion of 4400:341, 4400:354, 4400:361 and 4400:371 with a combined average grade of 2.0 or higher.

** These electives are to be chosen according to the requirements for breadth and depth set by the department.



4450: Computer Engineering

Return to the College of Engineering

In addition to traditional large computer applications, devices containing some form of embedded computing system are becoming pervasive in our society. Computer engineers design and develop hardware and software for all of these systems, ranging from software applications to communication networks to components in computing systems to small embedded sensors. Branches of computer engineering include operating systems, embedded systems design, digital circuits, algorithms, software design, and computer architecture among others. Important applications include wired and wireless networks, simulation, automation, digital control, sensing, robotics, “apps,” data management, and many others.

The Computer Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. Our comprehensive curriculum prepares students to identify, formulate, and execute solutions to real-world problems. Students learn how to use modern engineering tools in well-equipped laboratories, with activities that reinforce the concepts learned in the classroom. The curriculum emphasizes design and teamwork, and culminates in a capstone senior design project that integrates the material learned in earlier courses. Our well-established co-op program enables students to strengthen the connections between theory and practice in a professional setting, and provides valuable industrial experience.

The educational objectives of the Computer Engineering program are that its graduates:

- Achieve competitively compensated computer engineering positions or entry into programs of advanced study, in areas of their interest
- Prove to be highly competent and productive in computer engineering and related practice
- Continue to develop professionally through both practical experience and a lifelong commitment to learning, and
- Exhibit high standards of ethical conduct and societal responsibility in engineering.

In order to achieve these objectives, students graduating from the Computer Engineering program:

- Are able to apply mathematics, science, and engineering knowledge to the identification, formulation, and solution of computer engineering problems
- Have specialized engineering knowledge in areas of interest related to career objectives
- Are able to design systems, components, or processes to meet client needs
- Can design and conduct experiments and interpret technical data
- Are able to work effectively in interdisciplinary teams and within engineering organizations
- Are proficient in technical communications, oral, written, and visual
- Are able to use tools of modern engineering practice effectively, including standard instruments, computational and presentation software, engineering libraries and the Internet
- Have the ability and motivation to extend their competence into new areas
- Understand safety issues in computer engineering
- Understand environmental issues in computer engineering
- Understand intellectual property issues in computer engineering
- Understand societal impact issues in computer engineering
- Understand professional ethics in computer engineering

General Education — 29 credits

Natural Science

	Credits
3150:151,2 Principles of Chemistry I, Chem I Lab	4
3450:208 Introduction to Discrete Mathematics	4
3450:221,2,3 Analytic Geometry-Calculus I,II,III	12
3450:335 Introduction to Ordinary Differential Equations	3
3470:401 Probability and Statistics for Engineers	2
3650:291,2 Elementary Classical Physics I,II	8

Computer Engineering

	Credits
4400:231,332 Circuits I, II*	6
4400:230,330 Circuits Laboratory I, II	2

Computer Engineering		Credits
4400:340	Signals and Systems	4
4400:360	Physical Electronics	3
4450:101	Tools for Computer Engineering	3
4450:220	Digital Logic Design	4
4450:309	Design Project Seminar - Computer Engineering	1
4450:320	Computer Systems	3
4450:325	Operating Systems Concepts	3
4450:367	VLSI Design	3
4450:401	Senior Design Project I - Computer Engineering+	2
4450:402	Senior Design Project II - Computer Engineering	3
4450:420	Computer Systems Design	3
4450:422	Embedded Systems Interfacing	3
4450:427	Computer Networks	3
4450:440	Digital Signal Processing	3

Computer Science	Credits
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3460:209,210 Computer Science I,II 8

Electives	Credits
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Computer Engineering Electives** 18

* Computer Engineering majors must achieve C- or better in 4400:231 Circuits I to take 4400:332 Circuits II.

+ Enrollment requires completion of 4450:367, 4450:420, 4450:427 and 4450:440 with a combined average grade of 2.0 or higher.

** These electives are to be chosen according to the requirements for breadth and depth set by the department.



4600: Mechanical Engineering

[Return to the College of Engineering](#)

Mechanical engineers design and analyze physical systems and are employed in a variety of industries in different capacities. Mechanical engineers play important roles in many types of companies, including automotive, petroleum, energy generation and conversion, aerospace, tire, consulting, chemical, electronic, and manufacturing.

The Mechanical Engineering curriculum at The University of Akron is designed to give the student knowledge of fundamental principles of the (1) thermal/fluids stem, (2) structures and motion stem, and (3) controls stem of mechanical engineering, as well as the application of these principles to pertinent problems. A significant measure of the mechanical engineering education is the degree to which it has prepared the graduate to pursue a productive engineering career that is characterized by continued professional growth.

The Mechanical Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. The Mechanical Engineering program identifies program educational objectives that describe what their graduates are expected to attain within a few years of graduation. They are as follows:

1. Practice the mechanical engineering discipline successfully within community accepted standards.
2. Acquire teamwork and communications skills to develop a successful career in mechanical engineering.
3. Fulfill professional and ethical responsibilities in the practice of mechanical engineering, including social, environmental and economic considerations.
4. Engage in professional service, such as participation in professional society and community service.
5. Engage in life-long learning activities, such as graduate studies or professional workshops.
6. Develop a professional career in the prevailing market that meets personal goals, objectives and desires.

To meet those program educational objectives as well as the curricular requirements specified by the American Society of Mechanical Engineers (ASME) for accreditation, the Mechanical Engineering program identifies student outcomes, which are what students are expected to know and be able to do by the time of graduation. They are as follows:

- A. Apply knowledge of mathematics, science and engineering in a logical and discerning manner.
- B. Design and perform laboratory experiments for thermal, fluid, materials and mechanical systems; know how to analyze and interpret results.
- C. Design thermal, fluid, mechanical, materials, and control systems to meet specifications within environmental, social, political, ethical, health and safety, manufacturability and sustainability constraints.
- D. Participate effectively in teams involving several disciplines.
- E. Identify, formulate, and solve thermal, fluid, materials, and mechanical problems by applying first principles, including open-ended problems.
- F. Develop practical solutions for mechanical engineering problems under professional and ethical constraints.
- G. Communicate effectively with written, oral, and visual means in a technical setting.
- H. Understand the impact of engineering in a global, economic, environmental, and societal context.
- I. Be prepared for a lifetime of continuing education.
- J. Know about contemporary issues in engineering.
- K. Have an ability to use modern modeling and simulation techniques, and computing tools.

General Education — 29 credits

Natural Science

3150:151,2,3 Principles of Chemistry I, Chem I Lab, Principles of Chemistry II	7
3450:221,2,3 Analytic Geometry-Calculus I, II, III	12
3450:335 Introduction to Ordinary Differential Equations	3
3650:291,2 Elementary Classical Physics I, II	8

Engineering Core

	Credits
3470:401 Probability and Statistics for Engineers	2
4300:201 Statics	3

Credits

Engineering Core	Credits
4300:202 Introduction to Mechanics of Solids	3
4400:307 Basic Electrical Engineering	4
4600:165 Tools for Mechanical Engineering	3
4600:203 Dynamics	3
4600:260 Engineering Analysis I	2
4600:300 Thermodynamics I	3
4600:310 Fluid Mechanics I	2

Mechanical Engineering	Credits
4600:301 Thermodynamics II	2
4600:311 Fluid Mechanics II	3
4600:315 Heat Transfer	3
4600:321 Kinematics	2
4600:336 Analysis of Mechanical Components	3
4600:337 Design of Mechanical Components	3
4600:340 Systems Dynamics and Response	3
4600:360 Engineering Analysis II	2
4600:380 Mechanical Metallurgy	2
4600:400 Thermal Systems Components	3
4600:402 Senior Seminar	1
4600:431 Fundamentals of Mechanical Vibrations	3
4600:441 Control Systems Design	3
4600:460 Concepts of Design	3
4600:461 ME Senior Design Project I	2
4600:471 ME Senior Design Project II	2
4600:483 Mechanical Engineering Measurements Laboratory	2
4600:484 Mechanical Engineering Laboratory	2

Electives

Electives must include three credits from Mechanical Engineering Design Electives, three credits from Technical Electives, and three credits from Mechanical Engineering Technical Electives.

Polymer Engineering Specialization Certificate

Mechanical Engineering students may earn a Polymer Engineering Specialization Certificate by taking one of the following courses:

Courses	Credits
9871:401 Introduction to Elastomers	3
9871:402 Introduction to Plastics	3
9871:407 Polymer Science	4

And the two following courses:

Courses	Credits
4700:425 Introduction to Blending and Compounding Polymers	3
4700:427 Mold Design	3

A mechanical engineering student may choose a Design of Energy Systems or Design of Mechanical Systems polymer-related project in lieu of one of the above 4700 polymer engineering courses with approvals from the chairs of the Department of Mechanical Engineering and the Department of Polymer Engineering.

Motion and Control Specialization Certificate

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 more than five years old obsolete. The primary purpose of the Motion and Control Specialization certificate program is to provide graduating engineers with a focused expertise in motion and control and to furnish the necessary tools to enable them to follow the changes in technology after graduation. In addition, the program will also serve practicing

engineers and life-long learners who come back to school to refresh their skills through the certificate program.

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

Credits

Students should successfully complete all three courses listed below:

4600:442/542 Industrial Automatic Control	3
4600:444/544 Robot Design and Control Applications	3
4600:670 Integrated Flexible Manufacturing Systems*	3

* Undergraduate students must obtain permission to take this course.



4700: Mechanical Polymer Engineering

[Return to the College of Engineering](#)

The Department of Mechanical Engineering in cooperation with the Department of Polymer Engineering has developed the undergraduate program in Mechanical Polymer Engineering. This program integrates mechanical engineering science and design with polymer processing science and technology.

The Mechanical Polymer Engineering curriculum at The University of Akron is designed to give the student knowledge of fundamental principles as well as the application of these principles to polymer processing problems. A significant measure of the Mechanical Polymer Engineering education is the degree to which it has prepared the graduate to pursue a productive engineering career in the polymer industry that is characterized by continued professional growth.

The Mechanical Polymer Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. The Mechanical Polymer Engineering program identifies program educational objectives that describe what their graduates are expected to attain within a few years of graduation. They are as follows:

1. Practice the mechanical or mechanical-polymer engineering discipline successfully within community accepted standards.
2. Acquire teamwork and communications skills to develop a successful career in mechanical or mechanical-polymer engineering.
3. Fulfill professional and ethical responsibilities in the practice of mechanical or mechanical-polymer engineering, including social, environmental and economic considerations.
4. Engage in professional service, such as participation in professional society and community service.
5. Engage in life-long learning activities, such as graduate studies or professional workshops.
6. Develop a professional career in the prevailing market that meets personal goals, objectives and desires.

To meet those program educational objectives for accreditation, the Mechanical Polymer Engineering program identifies student outcomes, which are what students are expected to know and be able to do by the time of graduation. They are as follows:

- A. Apply knowledge of mathematics, science and engineering in a logical and discerning manner.
- B. Design and perform laboratory experiments for thermal, fluid, materials and mechanical systems; know how to analyze and interpret results.
- C. Design thermal, fluid, mechanical, materials, and control systems to meet specifications within environmental, social, political, ethical, health and safety, manufacturability and sustainability constraints.
- D. Participate effectively in teams involving several disciplines.
- E. Identify, formulate, and solve thermal, fluid, materials, and mechanical problems by applying first principles, including open-ended problems.
- F. Develop practical solutions for mechanical polymer engineering problems under professional and ethical constraints.
- G. Communicate effectively with written, oral, and visual means in a technical setting.
- H. Understand the impact of engineering in a global, economic, environmental, and societal context.
- I. Be prepared for a lifetime of continuing education.
- J. Know about contemporary issues in engineering.
- K. Have an ability to use modern modeling and simulation techniques, and computing tools.

Requirements

General Education **29 Credits**

Natural Science	Credits
3150:151,2,3 Principles of Chemistry I, Chem I Lab, Principles of Chemistry II	7
3450:221,2,3 Analytic Geometry-Calculus I, II, III	12
3450:335 Introduction to Ordinary Differential Equations	3
3650:291,2 Elementary Classical Physics I, II	8

Engineering Core	Credits
3470:401 Probability and Statistics for Engineers	2
4300:201 Statics	3
4300:202 Introduction to Mechanics of Solids	3
4400:307 Basic Electrical Engineering	4
4600:165 Tools for Mechanical Engineering	3
4600:203 Dynamics	3
4600:260 Engineering Analysis I	2
4600:300 Thermodynamics I	3
4600:310 Fluid Mechanics I	2
Mechanical Engineering	Credits
4600:315 Heat Transfer	3
4600:336 Analysis of Mechanical Components	3
4600:337 Design of Mechanical Components	3
4600:340 Systems Dynamics and Response	3
4600:360 Engineering Analysis II	2
4600:380 Mechanical Metallurgy	2
4600:400 Thermal Systems Components	3
4600:402 Senior Seminar	1
4600:431 Fundamentals of Mechanical Vibrations	3
4600:441 Control Systems Design	3
4600:460 Concepts of Design	3
4600:483 Mechanical Engineering Measurements Laboratory	2
Polymer Engineering	Credits
4700:321 Polymer Fluid Mechanics	3
4700:422 Polymer Processing	3
4700:425 Intro to Blending and Compounding of Polymers	3
4700:427 Mold Design	3
4700:450 Engineering Properties of Polymers	3
4700:451 Polymer Engineering Laboratory	2
4700:499 Polymer Engineering Design Project	2
or	
4700:497 Honors Project	

The 4700 courses are taught and administered for course content and faculty assignments by the College of Polymer Science and Polymer Engineering.



4800: Biomedical Engineering

[Return to the College of Engineering](#)

Biomedical Engineering is a highly interdisciplinary field of engineering which combines a fundamental understanding of engineering principles with an appreciation of the life sciences. Biomedical Engineers are prepared to solve problems in the health care industry and interact equally with other engineers and health care professionals. Students are prepared to embark on careers in research, design and development of medical devices, instrumentation, analysis tools, clinical evaluation methods, systems and processes, and other forms of medical technology.

The development of an in-depth understanding of the fundamentals of engineering is essential and therefore a degree in Biomedical Engineering focuses first on core engineering coursework, followed by advanced applications specific to the field of Biomedical Engineering. To maintain a core understanding of engineering, the program is divided into three tracks: Biomechanics; Instrumentation, Signals and Imaging; and Biomaterials and Tissue Engineering. The Biomechanics track is designed for those students who would pursue a Mechanical Engineering background with specialization in the areas of cardiovascular, orthopedic, rehabilitation engineering or system simulations. The Instrumentation, Signals and Imaging track is designed for those students who wish to pursue an Electrical Engineering background with specialization in biomedical instrumentation, signal and image processing, imaging devices, detectors, or system simulations. The Biomaterials and Tissue Engineering track is designed for those students who desire to focus on the cellular aspects of Biomedical Engineering with specialization in the areas of material interactions with the human body, design and development of biomaterials, including tissue engineering and drug delivery systems.

Students in the Department of Biomedical Engineering receive individual advising in their areas of interest. Graduates of the program will be prepared to apply their knowledge of engineering and medicine to design, test and evaluate systems or system components to be used in the health care industry, to design and develop research projects, including the analysis and interpretation of data and the dissemination of results, and to participate in other biomedical engineering problem solving activities. Graduates will also be well prepared to enter graduate study in Biomedical Engineering or Medical School.

The Biomedical Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. The Biomedical Engineering program identifies program educational objectives that describe what their graduates are expected to attain within a few years of graduation. Accordingly, the educational objectives of the Biomedical Engineering program are to educate biomedical engineers who:

1. Are viewed as technically competent at the interface between engineering and medicine as evidenced by:
 - a. Creative and innovative problem solving
 - b. Performance as a contributing team member
 - c. Ethical and professional actions
 - d. An ability to interface with diverse constituencies
 - e. A knowledge of intellectual property and federal regulations
2. Possess an ability to communicate effectively with written, oral and visual means in both technical and non-technical settings.
3. Exhibit continual professional development as evidenced by:
 - a. Attendance at conferences, workshops or other training courses
 - b. Enrollment in graduate, medical or other professional schools
 - c. Active participation in professional societies.
4. Exhibit continual professional service as evidenced by:
 - a. Active participation in professional societies
 - b. Service as a mentor.
5. Are advancing on their chosen career path.

Evaluation of the Bachelor's Degree Program in Biomedical Engineering is ensured through the use of exit-interviews and alumni tracking and survey procedures. The Department of Biomedical Engineering has

established the following student outcomes. Graduates of the undergraduate program in Biomedical Engineering will possess:

- The ability to demonstrate a basic knowledge of biology, anatomy, and physiology, fundamental engineering conservation laws and track-specific engineering principles as applied to biomedical engineering
- The ability to devise, design, and conduct biomedical engineering experiments and analyze the results
- The ability to design medical devices, systems or techniques to meet specific goals
- The ability to participate effectively as a member of a multi-disciplinary team
- The ability to recognize, define, evaluate and solve biomedical engineering problems
- An understanding of professional and ethical responsibility in biomedical engineering
- The ability to communicate effectively with multi-disciplinary groups using written, oral and visual means
- The ability to appreciate the impact of biomedical engineering on society
- The ability to pursue/sustain active professional growth
- A knowledge of contemporary issues in medicine and engineering, as well as an awareness of current developments in society and technology
- An ability to use modern techniques, skills and tools for biomedical engineering practice
- The ability to apply advanced mathematics (including differential equations and statistics), science and engineering to solve problems at the interface of engineering and biology
- The ability to make measurements on and interpret data from living systems, and
- The ability to address the problems associated with the interaction between living and non-living materials and systems

The Biomechanics track

General Education - 29 credits including: Credits

3250:244 Introduction to Economic Analysis 3

3600:120 Introduction to Ethics 3

Mathematics

Credits

3450:221,2,3 Analytic Geometry-Calculus I, II, III 12

3450:335 Introduction to Ordinary Differential Equations 3

3670:461 Applied Statistics 4

Natural Science

Credits

3100:200,1,2,3 Human Anatomy and Physiology I, II and Labs 8

3150:151,2,3 Principles of Chemistry I, II/Lab I 7

3650:291,2 Elementary Classical Physics I, II 8

Engineering Core

Credits

4300:201 Statics 3

4300:202 Mechanics of Solids 3

4400:307 Basic Electrical Engineering 4

4600:203 Dynamics 3

4600:300 Thermodynamics I 3

4600:315 Heat Transfer Process 3

4600:321 Kinematics of Machines 2

4600:420 Introduction to the Finite Element Method 3

Biomedical Engineering

Credits

4800:101 Tools for Biomedical Engineering 3

4800:111 Introduction to BME Design 3

4800:201 Sophomore Seminar in Biomedical Engineering 1

4800:220 Biomedical Computing 3

4800:305 Introduction to Biophysical Measurement 4

4800:310 Modeling & Simulation in Biomedical Systems 3

4800:360 Biofluid Mechanics 3

4800:365 Mechanics of Biological Tissues 3

4800:400 Biomaterials 3

4800:460/560 Experimental Techniques in Biomechanics 3

4800:491 BME Design I 2

4800:492 BME Design II 2

Electives - 9 Credits

Electives include three credits from Biomedical Engineering (4800) and six credits from a list of approved electives from Biomedical Engineering, Mathematics, Physics, Polymer Engineering, Electrical Engineering or Mechanical Engineering

Total Credits: 137

The Instrumentation, Signals and Imaging track**General Education - 29 credits including: Credits**

3250:244 Introduction to Economic Analysis 3

3600:120 Introduction to Ethics 3

Mathematics**Credits**

3450:221,2,3 Analytic Geometry-Calculus I, II, III 12

3450:335 Introduction to Ordinary Differential Equations 3

3670:461 Applied Statistics 4

Natural Science**Credits**

3100:200,1,2,3 Human Anatomy and Physiology I, II and Labs 8

3150:151,2,3 Principles of Chemistry I, II/Lab I 7

3650:291,2 Elementary Classical Physics I, II 8

Engineering Core**Credits**

4300:201 Statics 3

4400:230,1 Circuits I and Lab 4

4400:330,2 Circuits II and Lab 4

4400:340 Signals and Systems 4

4400:360 Physical Electronics 3

4450:220 Digital Logic Design 4

4600:305 Thermal Science 2

4600:203 Dynamics 3

Biomedical Engineering**Credits**

4800:101 Tools for Biomedical Engineering 3

4800:111 Introduction to BME Design 3

4800:201 Sophomore Seminar in Biomedical Engineering 1

4800:220 Biomedical Computing 3

4800:305 Introduction to Biophysical Measurement 4

4800:310 Modeling & Simulation in Biomedical Systems 3

4800:325 Design of Medical Devices 3

4800:400 Biomaterials 3

4800:420 Biomedical Signals and Image Processing 3

4800:430/530 Design of Medical Imaging Systems 3

4800:491 BME Design I 2

4800:492 BME Design II 2

Electives - 9 Credits

Electives include three credits from Biomedical Engineering (4800) and six credits from a list of approved electives from Biomedical Engineering, Mathematics, Physics, Polymer Engineering, Electrical Engineering or Mechanical Engineering

Total Credits: 140

The Biomaterials and Tissue Engineering track**General Education - 29 credits including: Credits**

3250:244 Introduction to Economic Analysis 3

3600:120 Introduction to Ethics 3

Mathematics**Credits**

3450:221,2,3 Analytic Geometry-Calculus I, II, III 12

3450:335 Introduction to Ordinary Differential Equations 3

Mathematics	Credits
3670:461 Applied Statistics	4

Natural Science	Credits
3150:151,2,3 Principles of Chemistry I, II/Lab I	7
3150:154 Qualitative Analysis	2
3150:263,5 Organic Chemistry I, Lab	5
3650:291,2 Elementary Classical Physics I, II	8
3100:200,1,2,3 Human Anatomy and Physiology I, II, Labs	8

Engineering Core	Credits
4200:321 Transport Phenomena	3
4300:201 Statics	3
4300:202 Mechanics of Solids	3
4400:307 Basic Electrical Engineering	4
4600:203 Dynamics	3
4600:300 Thermodynamics I	3

Biomedical Engineering	Credits
4800:101 Tools for Biomedical Engineering	3
4800:111 Introduction to BME Design	3
4800:201 Sophomore Seminar in Biomedical Engineering	1
4800:220 Biomedical Computing	3
4800:305 Introduction to Biophysical Measurement	4
4800:360 Biofluid Mechanics	3
4800:365 Mechanics of Biological Tissues	3
4800:400 Biomaterials	3
4800:440 Advanced Biomaterials	3
4800:445 Experimental Techniques in Biomaterials and Tissue Engineering	3
4800:491 BME Design I	2
4800:492 BME Design II	2

Electives - 9 Credits

Electives include three credits from Biomedical Engineering (4800) and six credits from a list of approved electives from Chemistry, Mathematics, Physics, Polymer Engineering, Electrical Engineering or Mechanical Engineering

Total Credits: 139



4900: Aerospace Systems Engineering

The Bachelor of Science in Aerospace Systems Engineering degree program is intended to produce engineers who possess both a broad, interdisciplinary knowledge of aerospace engineering fundamentals and who will be able to move quickly into the role of project managers, the precursor position to program managers and ultimately, senior managers. These engineers can lead multidisciplinary teams and bring about the integration of components in a variety of systems. The program includes basic engineering and aerospace courses and will also include specific non-engineering courses, selected to meet the goal of developing future senior technical leaders for our aerospace industries. The program features a mandatory co-op component that begins following the sophomore year. The co-op requirement is expected to fill out the student's technical background as well as provide a basis for broad personal growth that is part of the aim of the General Education requirement. Three fewer hours of General Education courses are required for Aerospace Systems Engineering due to the mandatory co-op.

To meet the curriculum requirements specified by the American Institute of Aeronautics and Astronautics for ABET accreditation, the undergraduate program in Aerospace Systems Engineering must satisfy the following program outcomes:

- Apply knowledge of mathematics, science and engineering in a logical and discerning manner
- Design and perform laboratory experiments for thermal, fluid, mechanical, and aerospace systems; know how to analyze and interpret results
- Design thermal, fluid, mechanical and control systems as well as airborne structures or propulsion systems to meet specifications within environmental, social, political, ethical, health and safety, manufacturability and sustainability constraints
- Participate effectively in teams involving several disciplines
- Identify, formulate, and solve thermal, fluid, mechanical and aerospace systems problems by applying first principles, including open-ended problems
- Develop practical solutions for aerospace systems engineering problems under professional and ethical constraints
- Communicate effectively with written, oral, and visual means in a technical setting
- Understand the impact of engineering in a global, economic, environmental, and societal context
- Be prepared for a lifetime of continuing education
- Know about contemporary issues in engineering
- Have an ability to use modern modeling and simulation techniques, and computing tools

Requirements

3300:111 English Composition I	4
3300:112 English Composition II	3
3250:244 Intro to Economic Analysis	3
3400:210 Humanities in Western Tradition I	4
5540:xxx Physical Education	1
xxxx:xxx Social Science Elective	3
xxxx:xxx Humanities Elective I	3
xxxx:xxx Area Studies/Cult. Diversity	2
6200:201 Accounting Principles I	3
7600:105 Public Speaking	3
or	
7600:106 Effective Oral Communication	3

Natural Science	Credits
3150:151 Principles of Chemistry I	3
3150:152 Principles of Chemistry Lab	1
3450:221 Analytical Geom. & Calculus I	4
3450:222 Analytical Geom. & Calculus II	4
3450:223 Analytical Geom. & Calculus III	4
3450:335 Differential Equations	3

Natural Science	Credits
3650:291 Elemental Classical Physics I	4
3650:292 Elemental Classical Physics II	4

Engineering Core	Credits
4300:201 Statics	3
4300:202 Intro: Mechanics of Solids	3
4400:320 Basic Electrical Engineering	4
4600:203 Dynamics	3
4600:260 Engineering Analysis I	2
4600:300 Thermodynamics I	3
4600:310 Fluid Mechanics I	2
4600:315 Heat Transfer	3
4600:337 Design of Mechanical Components	3
4600:360 Engineering Analysis II	2
4600:400 Thermal Systems Components	3
4600:411 Compressible Fluid Mech.	3
4600:412 Fundamentals of Flight	3
4600:413 Intro. to Aerodynamics	3
4600:414 Intro to Aerospace Propulsion	3
4600:460 Concepts of Design	3
4600:483 Measurements Lab	2

Aerospace Systems Engineering	Credits
4800:470 Human Factors Engineering	3
4900:165 Tools for Aerospace Systems Engineering	2
4900:166 Aerospace Systems Project Management	1
4900:240 Aerospace Systems Engineering I	3
4900:320 Aerospace Systems Engineering II	3
4900:336 Aerospace Structures	3
4900:420 Object Oriented Design & Management	3
4900:340 Avionics I & Lab	3
4900:380 Aerospace Materials	3
4900:440 Avionics II & Lab	3
4900:450 Aerospace Computations	3
4900:460 Aerospace Systems Manufacturing	3
4900:490 Aerospace Design Project	2
4900:497 Aerospace Honors Project	2



Bachelor of Science in Engineering

[Return to the College of Engineering](#)

This degree program was established to introduce flexibility into the College of Engineering. Within the 66 credits of the option portion of the program, a student can pursue a focused curriculum in areas such as business administration, industrial management, environmental engineering, biomedical engineering, and pre-medicine. The program of study may be very narrow as in the case of a student wishing to specialize in structural design, foundation and soil mechanics. For another student interested in patent law, the program may be broad, touching on chemical, mechanical, and electrical engineering subjects. The individual's program is designed to meet each student's goals.

Admission

Admission to the program is restricted. A student requests admission by letter to the associate dean of the College of Engineering, outlining in some detail the particular objective and how the Bachelor of Science in Engineering program may enable the student prepare for career goals. The mathematics, physics, and chemistry requirements are identical to those of the ABET accredited programs in Chemical Engineering, Civil Engineering, Electrical Engineering, and Mechanical Engineering.

General Curriculum Requirements Credits

General Education and Science Core	61
Program Options Engineering	40
Program Options	26
Free Electives, advisor approval	10



Student Support and Success

Students attend the University to learn and grow in all aspects of their lives. The University delivers programs and services that are designed to assist our diverse student body to maximize opportunities for academic, social, cultural, personal and physical growth and development. Sensitive to the changing needs of today's college student, The University is committed to helping students meet their individual academic and personal goals. This responsibility will be accomplished by our commitment to these objectives:

- Creating a civil, supportive learning environment
- Providing academic support systems to increase student persistence and encourage satisfactory educational progress
- Moving beyond tolerance to embrace and celebrate the rich dimensions of difference within each individual and within each culture, subculture and identity group, diversity is a core value that embodies inclusiveness and excellence within the University community
- Collaborating with all constituencies within the University to increase enrollment and improve the quality of the student experience
- Encouraging students to assume responsibility for their educational decisions and experiences
- Identifying and addressing student needs in an evolving environment
- Addressing the student and community needs through programs, activities and services

▶ **[Student Life and Living](#)**

▶ **[Support Services for Students](#)**



Student Life and Living

Off Campus Student Services

www.uakron.edu/offcampus

Phone - 330-972-5500

Off-Campus Student Services (OCSS) is a resource center and an administrative office dedicated to helping commuter and off-campus students. OCSS is located in the Student Union, near the commuter lounge. Students may stop in for assistance during posted hours or reach them by phone.

Residence Life and Housing

www.uakron.edu/reslife

Phone - 330-972-7800

Email - reslife@uakron.edu

The Department of Residence Life and Housing is administratively responsible for managing the University's student housing program. The University provides reasonably priced, clean, convenient and secure residence hall facilities. In addition, the residence hall program is committed to providing a meaningful living/learning environment which directly supports the educational, social, and personal development of each student. The Department of Residence Life and Housing supervises and manages 12 on-campus residence hall facilities accommodating approximately 3,200 students. Students are encouraged to apply for residence hall accommodations as soon as possible.

Freshman Residential Policy Requirement

The University of Akron is committed to providing a learning environment supportive of its academic mission complementary to its academic programs. The University acknowledges that national studies find that first-year freshman uniquely benefit from a residence hall experience. Social integration and access to faculty, staff, and institutional resources are enhanced through an on-campus residential experience. The University considered and accepted the findings that living on-campus positively influences academic persistence and success, including degree completion. For all these reasons, all first-year freshman students at The University of Akron are required to reside in University residence halls for the duration of their freshman academic year at the University as long as space is available. Upon admission to the University, all first-year freshman students will be required to make application for residence in University housing and will be assigned and assessed appropriate room and board fees, so long as space is available and/or unless the student is subject to one of the exemptions below:

Exemptions to the Freshman Residential policy include:

- Permanent home residence with parents or legal guardians who reside in: Summit, Portage, Stark, Wayne or Medina counties
- Registered for fewer than 6 credit hours
- 21+ years of age
- Military experience 1+ years
- Married (proof of marriage required)
- Student is parent with custodial care responsibilities (proof of custody care required)
- Other extenuating circumstances, including but not limited to, special dietary needs or conditions, cultural or religious needs or accommodations, undue hardship, or any other circumstance(s) in support of an exemption which, if not granted, would undermine or contravene the purpose of the Freshman Residential Requirement Policy.

Students seeking exemption from the Freshman Residential Policy should contact the Department of Residence Life and Housing 330-972-7800 to request the Freshman Residential Requirement Policy and Exemption Procedures and Petition packet, or can visit the [Residence Life and Housing web site](#) and download the necessary forms.

Housing Options and Rates

<http://www.uakron.edu/reslife/housing/housing-optionsrates.dot>

Residence hall room and board rates for 2012-2013 are listed below. All rates quoted are for the full academic year (vacation periods excluded).

Spanton, Orr, Ritchie, Sisler-McFawn	\$6,306.00
Bulger and Quacker Square.....	\$6,625.00
Honors Complex, Exchange, Spicer, & South Doubles.....	\$7,058.00
Honors Complex, Exchange, Spicer & South Singles.....	\$8,484.00
Exchange Street Apartments.....	\$8,864.00
Gallucci Doubles.....	\$5,830.00
Gallucci Triples.....	\$5,410.00
Townhouses.....	\$6,432.00

http://www.uakron.edu/college_life/housing_dining/meal_plan_rates.dot

All residence hall students must have a dining plan except residents of Townhouses and Exchange Street Apartments where kitchen facilities are available. Non-resident students, staff and faculty may also purchase a dining plan at any Zip Card Office location. All dining plans are valid for one semester only. The University ID Card, "The Zip Card," is activated as a debit card.

Traditional Dining Plans	Cost/semester	Cost/academic year
19-meal plan	\$1,786	\$3,572
15-meal plan	\$1,727	\$3,454
10-meal plan	\$1,531	\$3,062
Gold Dining Plan	Cost/semester	Cost/academic year
Gold Plan	\$2,041	\$4,082
Unlimited Dining Plan	Cost/semester	Cost/academic year
Unlimited Plus	\$1,757	\$3,514
Other options *	Cost/semester	Cost/academic year
Any three meals Choose 3 meals a week at Rob's Café, Union Market, Summit Bistro, Trackside Grille and Zee's Convenience Stores. Meals will reset each week on your Zip Card.	\$348	\$696
Any five meals Choose 5 meals a week at Rob's Café, Union Market, Summit Bistro, Trackside Grille and Zee's Convenience Stores. Meals will reset each week on your Zip Card.	\$455	\$910
300 Townhouse Receive \$300 in Dining Dollars per semester	\$311	\$622

*Available only to commuter students; residents of the Exchange Street Apartments with kitchens and the Townhouses; and faculty and staff.
Rates as of fall 2012; changes are subject to Board of Trustees' approval.

Student Judicial Affairs

www.uakron.edu/sja
Phone - 330-972-6380
Email - sja@uakron.edu

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.

Student Life

www.uakron.edu/studentlife/
Phone - 330-972-7866

The Department of Student Life is committed to building community through collaborative learning experiences for students that provide them with the opportunity to engage, serve, and lead. Student Life encompasses 1) Student Union 2) Center for Service and Leadership, 3) Zips Programming Network, 4)

Civic Engagement, 5) Leadership Programs, 6) All Campus Programming and 7) Fraternity and Sorority Life.

- Student Union
www.uakron.edu/studentunion
Phone - 330-972-7866
The Student Union, located in the center of campus, houses numerous functions of student life and student engagement, and serves the students, faculty, and staff. This facility offers various food venues, ballroom and meeting rooms, theater, game room, student organization offices, Student Judicial Affairs, Computer Solutions — the computer technology store, DocuZip copy center, bank, Information Center, Planet Underground, Starbucks, Zip Card Office, and Barnes & Noble Bookstore. Visit our Web site at www.uakron.edu/studentunion.
- Greek Life
www.uakron.edu/studentlife/greek
Phone - 330-972-7909
The Greek community at The University of Akron consists of a group of diversified men and women belonging to 24 different fraternities and sororities. Our Greek community provides its members with opportunities for growth and excellence in academic, leadership, service learning, and social arenas. Fraternity and sorority membership can offer a more well-rounded, co-curricular college experience.
- Student Organization Resource Center (SOuRCe)
www.uakron.edu/studentlife/source
Phone - 330-972-2483
Email - source@uakron.edu
The Student Organization Resource Center (SOuRCe) is located within the Center for Service and Leadership, on the first floor of the Student Union, across from the Game Room. The Hub houses offices for Greek leaders, Zips Programming Network, Undergraduate Student Government, Graduate Student Government, Student Trustees, and numerous student organization pods or work stations. The SOuRCe provides services for registered student organizations regarding finances, leadership programming, social activities, constitution revisions, and performance agreements.
- Zips Programming Network
www.uakron.edu/studentlife/zpn
Phone - 330-972-7014
Email - zpn@uakron.edu
The Zips Programming Network (ZPN) is the all-campus activities board responsible for providing educational, cultural, social, recreational and musical events for the campus community.

Undergraduate Student Government

www.uakron.edu/asg

Phone - 330-972-5801

Email - usg@uakron.edu

The Undergraduate Student Government (USG), the representative governing body for undergraduate students, provides services and forums to address student needs, participates in University governance, and decides funding allocations to registered undergraduate student groups.

University Dining Services

www.uakron.edu/dining



Support Services for Students

Academic Advising

www.uakron.edu/advising

Phone - 330-972-7430

Inter-college Transfer (ICT)

www.uakron.edu/advising/how-do-i/ict

Phone - 330-972-7430

Career Center

www.uakron.edu/career

Phone - 330-972-7747

Email - career@uakron.edu

The Career Center's mission is to provide career services to all students and alumni of The University of Akron. Students also may participate in the Career Advantage Network (CAN) program, which provides opportunities to gain major-related work experiences prior to graduation for eligible students, regardless of academic major.

- Student Employment

The Career Center also houses the Office of Student Employment. Student Employment helps students find part-time job opportunities both on and off campus. While these jobs may or may not relate to a student's major, they are designed to work with academic class schedules. Gaining work experience while going to school is an excellent way to develop marketable skills, refine career interests and goals, network with people, work in a professional environment, and earn money to assist with college and living expenses. Student Employment works with and maintains relationships with employers from many sectors of the marketplace that recruit students for part-time employment and campus work study opportunities.

Counseling Center

www.uakron.edu/counseling

Phone - 330-972-7082

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 psychologists and psychology trainees. Counseling services are free and confidential to enrolled students. There is a fee for testing services.

Office of Accessibility

www.uakron.edu/access

Phone - 330-972-7928

TDD: 330-972-5764

E-mail: access@uakron.edu

The goal of the Office of Accessibility 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. 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 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.

Student Health Services

www.uakron.edu/healthservices

Phone - 330-972-7808

Student Health Services, located in Suite 260 of the Student Recreation and Wellness Center, assists students in achieving their educational and personal goals by addressing their health care concerns while they are enrolled at The University of Akron.

Student Recreation and Wellness Services

www.uakron.edu/srws/

Phone: 330-972-2348

Fax: 330-972-6715

With Student Recreation & Wellness Services, there is so much to explore! Their mission is to serve and engage all students to learn, develop and succeed through innovative recreation and wellness opportunities that encourage healthy and balanced lifestyles. The department includes the following: 1) Club Sports, 2) Aquatics, 3) Intramurals, 4) Outdoor Adventure Center, 5) Fitness & Wellness.

SRWS are comprised of two facilities:

- Student Recreation & Wellness Center (SWRC): Amenities include a leisure pool with a current river and vortex, spa, jogging track, cardio and strength equipment, five multi-function gyms, group exercise studios, climbing wall and adventure gear rental.
- Ocasek Natatorium (ONAT): Amenities include an Olympic-size swimming pool, racquetball courts and fitness area. This facility is still available at no cost for all enrolled students, faculty and staff.

Tutoring & Writing Centers

www.uakron.edu/tutoring

The University has two tutoring centers on campus that provide free assistance to currently enrolled students. The centers are located in Bierce Library and The Polsky Building.

Bierce:

- Bierce Writing Commons: For students seeking assistance with a paper assignment for any of their courses, including help with citation styles, visit Bierce Writing Lab. Bierce Writing Commons serves students from entry-level courses through graduate school.
- Bierce Math Lab: Bierce Math Lab offers support for students having difficulty in entry-level math classes. Drop-in hours are available every weekday.
- Tutorial Services: Peer tutors are available to students in a wide variety of General Education courses, with emphasis on classes in math and the sciences.
- Learning Assistants Program: Specific sections of many courses include a trained Learning Assistant, who holds regular study sessions for students. The Learning Assistant Program provides assistance in the classroom throughout the semester, with professors and learning assistants working as a team encourage student success.

Polsky:

- Polsky Writing Lab: [The Polsky Writing Lab](#) can assist with all phases of writing, including subject development, grammar and citations.
- Polsky Math Lab: [The Polsky Math Lab](#) provides assistance to students having difficulty in most basic mathematics courses.
- College Reading and Study Skills: The center helps students develop stronger studying skills such as comprehension, test prep, vocabulary, note taking, time management and memory techniques.

General Student Services

Admissions

www.uakron.edu/admissions

Phone - 800-655-4884

Email - admissions@uakron.edu

New Student Orientation

www.uakron.edu/nso

Phone - 330-972-2622

Email - orientation@uakron.edu

Bursar

www.uakron.edu/student-accounts

Phone - 330-972-5100

Email - cashier@uakron.edu

Office of Financial Aid

www.uakron.edu/finaid

Phone - 800-621-3847

Email - finaid@uakron.edu

Information Technology Services

<http://www.uakron.edu/it/>

Phone - 330-972-6888



Additional Academic Programs and Services

Office of International Programs

www.uakron.edu/oip/

Phone - 330-972-6349

Email - international@uakron.edu

As a supporting unit to The University of Akron, the staff in the Office of International Programs undertakes the following:

- To provide admission services to all prospective undergraduate international students as well as financial verification and immigration documents for undergraduate and graduate international students
- To aid in the transition/integration of international students, scholars, and scientists through the provision of services, such as providing orientation programs, undergraduate academic advising, and evaluating international undergraduate academic credentials
- To provide information and advising services for The University of Akron students who wish to study, work, or travel abroad through the Education Abroad Program
- To provide immigration counseling services for international students, scholars, and faculty members
- To develop and support campus and community resources and activities designed to promote international understanding and appreciation of cultural diversity both on and off campus
- To assist faculty and/or departments who have an interest in establishing exchange agreements abroad
- To facilitate contacts between The University of Akron faculty members and departments with their foreign university contacts to assure that meaningful, mutually beneficial, reciprocal agreements are maintained

Education Abroad

<http://www.uakron.edu/oip/studyabroad/>

Global awareness, international experience, and ability to appreciate languages and cultures are critical for the university graduate. Education Abroad enhances the student's academic background; develops critical thinking and decision making skills; increases intercultural, political and economic understanding; and enhances self-esteem. The University of Akron has Education Abroad direct exchanges and affiliations with universities in Denmark, France, Germany, Japan, Mexico, The Netherlands, the People's Republic of China, Peru, Romania, Russia, South Korea, and the United Kingdom. In addition, UA has affiliation agreements with the American Institute for Foreign Study (AIFS), GlobaLinks, the Institute for Study Abroad at Butler University, Cultural Experiences Abroad (CEA), and the Ohio International Consortium. Programs are available to all students regardless of major, language, training or financial means. Education Abroad may be undertaken for an academic year, a semester, or a summer, depending upon the host institution. Short-term education abroad programs also are available through UA. For additional information, attend a special event such as "Study Abroad 101," one of the "Education Abroad Forums" (each semester) or the "Education Abroad Fair" (October).

Learning Communities

<http://www.uakron.edu/admissions/undergraduate/learning-communities/>

A Learning Community is a group of students who take two to four classes together. Faculty members integrate topics and assignments across the courses so that what is being learned in one course reinforces and complements what is being learned in the other courses. Many courses in Learning Communities apply toward baccalaureate and associate degree requirements; some courses fulfill General Education requirements. Students in any major are welcome to participate in a Learning Community.

Academic Achievement Programs

<http://www.uakron.edu/aap/>

Phone - 330-972-6804

Academic Achievement Programs is dedicated to the mission of preparing students for personal success. It provides various academic, social, and cultural experiences for Akron-area students. Through five distinct programs, it expands and enhances academic instruction and adds value to the development of students through intensive summer components as well as academic year activities. These experiences are intended to empower students to make good decisions at home, in school, and in personal relationships, which will

improve their self-worth, impact high school graduation rates, and facilitate the successful admission to and graduation from post-secondary educational institutions.

Officer Training Programs (ROTC)

http://www.uakron.edu/academics_majors/undergraduate_programs/rotc.dot

The University of Akron supports and promotes a robust officer training program — Army Reserve Officer Training Corps. ROTC produces leaders for the Army while building better citizens for America. ROTC is a military educational program designed to give men and women the opportunity to become officers while earning a college degree. ROTC offers scholarships, leadership training, and many other experiences simply not available to your average college student. ROTC classes and leadership training will help you sharpen your analytical skills. You'll learn to evaluate changing conditions and make appropriate decisions. Being in ROTC requires you to take an added class and lab in addition to your other college courses. Typically, ROTC class credits can be applied as general elective credits toward your degree, and if you complete all four years of ROTC courses, you can earn a minor in the respective discipline.

Office of Multicultural Development

<http://www.uakron.edu/omd/>

The mission of the Office of Multicultural Development at The University of Akron is to prepare students to live and excel in a global society. As an advocate for equity and social justice, they ensure that students of diverse ethnic, social and cultural backgrounds achieve their fullest potential in an affirming environment which supports access, retention, and successful completion of goals. This mission is characterized by extensive student-focused collaboration with all segments of the campus community.

Adult Focus

<http://www.uakron.edu/uaaf/>

Adult Focus is an academic support service for adult learners. An adult learner is any student who satisfies one of the following conditions:

- 25 years old or older
- Assumes multiple life roles such as parent, spouse/partner, employee, caregiver, and students
- Returns to school after four or more years of employment, homemaking, or other activity
- Veteran of the armed forces

Any student, regardless of age, whose primary life roles and responsibilities exist independent of the University and take precedence over the role of student in times of crisis or stress is considered to be an adult student.

Workforce Development and Continuing Education

<http://www.uakron.edu/ce/>

Workforce Development and Continuing Education offers quality noncredit classes to area businesses and to people in our community. Workforce Development and Continuing Education serves your educational needs:

- Through noncredit and certification courses offered in our catalog and on its Web site
- By offering a wide variety of online courses for career development and certification, personal enrichment, and professional development re-certification credits
- With customized on-site training for employees

More than 300 classroom and online courses are available each semester. Many courses are approved by professional, national and state organizations for certificate and license re-certification. Graduate credit online workshops are available for teachers.

University - Additional Locations

<http://www.uakron.edu/provost/about/additional-locations.dot>

The University operates five educational centers in our surrounding communities.

University Partnership Program - Lorain County Community College (LCCC)

<http://www.lorainccc.edu/UP>

The University Partnership Program brings colleges and universities, including The University of Akron, to the LCCC campus to offer the coursework and programs that students need for bachelor's and master's degrees. Degrees offered parallel those that LCCC offers, enabling students to move into higher level degrees without leaving LCCC. More information is available by calling the Center at 800-995-5222 ext. 4949.



Fees and Expenses

Fees subject to change without notice.

Student Expenses

Following are comprehensively outlined fees for students at the University who are studying for credit and noncredit in all areas of instruction. Included also are the additional expenses required for special academic services available to students and other miscellaneous fees, such as application fees. It is the responsibility of the student to know the correct amount of all fees, including the non-Ohio resident surcharge.

In any question concerning fees, surcharges or residence, it is the responsibility of the student, parents or court-appointed guardian to furnish such proof as may be required by The University of Akron. A student who is in doubt about residency status should consult with the University registrar.

It is the responsibility of the registrar to assess fees and surcharges at the time of registration; information given by the student at that time is used in the assessment. Each registration is later audited by the University auditor, and appropriate additional charges or refunds will be made.

All fees and surcharges are due at the time of registration or on the specified fee payment deadline. The status of the student as of the opening day of the semester or session will determine the final, correct amount of fees and surcharges.

An Installment Payment Plan for tuition and fees is available to all students.

Tuition and Fees

Tuition and fee information for Undergraduate and associate degree programs is available on the [Office of Admissions website](#).

Admission Application Fees (Nonrefundable)

Undergraduate	\$40
Entering postbaccalaureate or graduate	\$40
Transient students (first enrollment only)	\$40
International Students (non-refundable)	\$60
Graduate Foreign Language Reading Proficiency Exam	\$50

Orientation Program Fees

New Student Orientation and University Confirmation (Confirms new student intent to attend orientation and enroll in classes for next academic term. Placement tests taken on UA campuses are included in this fee.)	\$100
International Student Orientation	\$100
Placement Test Fees: Individual retesting and external users	\$25/test

Registration and Other Related Fees

Administrative Fees	
Assessed each term (all students except high school students taking University courses; transient, unclassified and special students; and undergraduate students who have completed 96 credits or more)	\$12/term
Late Payment Fees (charged to students who have not paid for tuition and mandatory fees by the invoice due date)	\$50
Transcripts	\$10 each
Co-op Course Fee	\$55
Alternative Credit Fees	
Bypassed Credit, per credit	\$5
CLEP, per test	\$80 (plus ETS fee paid to ETS)

Registration and Other Related Fees

Credit by Examination (undergraduate and postbaccalaureate) per credit \$30

Facility Fee

Student Facility Fee \$18.55/credit hour up to a maximum of 12 credit hours

General Service Fee

Akron Campus & Summit College pursuing a bachelor's degree \$35/credit hour up to a maximum of 12 credit hours

Akron Campus pursuing an associate's degree in Summit College \$27.60/credit hour up to a maximum of 12 credit hours

Medina County University Center / Wayne College \$7.34/credit hour up to a maximum of 12 credit hours

Technology FeeAcademic Level: 0-95 Credits \$13.20/credit hour
96 Credits or More Exempt
Graduate and Law \$16.25/credit hour**Audit and Non-Credit (Developmental) Courses**

The cost is the same whether a course is taken for credit non-credit (developmental) or audit.

Miscellaneous Fees**Audiology and Speech Center Fees**[Click here to view Audiology and Speech Center fees](#)**Career Advantage Services Fees**

Assessed to all sophomore, junior and senior level students \$3/credit hour

Career Services

Registration Fee for alumni and reciprocity (covers 12-month cost of employer referrals) \$45

Center for Child Development (Child care facility)[Click here to view Center for Child Development \(Child care facility\) fees](#)**College of Education**

Tk20 Portfolio \$100

Counseling Center

Cognitive Functioning and Academic Achievement Tests \$55

Learning Disability Battery \$115

ACT Residual Test \$45

ACT Residual Test Standby (\$20 plus \$40 ACT fee) \$65

College Level Examination Program (CLEP) \$25 (plus ETS fee paid to ETS)

Educational Testing Services Fee (Currently \$80; subject to change throughout the year. Fee is paid directly to ETS.)

Correspondence Testing \$20/hr

Miller Analogies Test \$90

Professional Consultation Fee per hour \$120

Individual Administration of A.C.T. Residual Test \$155

Psychological and Career Tests \$12/fiscal year

Attention Deficit Disorder (ADD/ADSD) Assessment \$160

CDs (compact discs for relaxation, stress management, etc.) \$1

[Fees continued >>](#)



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Fees and Expenses continued

Dance Institute Fees

[Click here to view Dance Institute Fees](#)

Developmental Support Fees

Charged to all students enrolled in Developmental courses \$10/credit hour

Engineering Infrastructure Fee - All Engineering Courses

Infrastructure Fee - all engineering courses \$20/credit hour

English Language Institute

Late Registration \$50

Application fee \$50

Materials fee, per level, per semester/8-week session \$50/40

Health Services

Allergy injections \$6

Immunizations \$24-\$61

Laboratory Tests \$6-\$196.80

Physical Examinations \$15

Prescribed Medications/Treatments \$3.60-\$43.20

Visit fee \$15

ID Fees

ZipCard Replacement \$15

Insufficient Funds Fees

"Insufficient Funds" or returned check charge and VISA/Mastercard returns for Insufficient Funds \$20

International Programs

Archive document search \$50

International Student/Teacher Identity Cards \$22

Processing Post-Completion OPT \$35

Replace Lost Immigration Form \$50

Guest Travel Abroad Participant Fee \$300

Request to retain Int'l Undergraduate Application \$60

J-1 Visiting Scholar Processing Fee \$150

Liability Fees

Liability Insurance Fee, Student Nursing \$15

Liability Insurance Fee, Allied Health Technology/Surgeon's Assistant \$61.50

Liability Insurance Fee, Allied Health Technology/Other than Surgeon's Assistant \$15

Library Fees (Bierce, Auburn Science and Wayne)

Library Fee (sophomores & above) \$3/credit hour

Photocopies and printing charges \$.07/page

Overdue Materials

UA students, undergraduate (\$20 maximum) .10/day

Non-University borrowers (\$5 maximum) .25/day

Replacement Cost plus \$20 surcharge

Fines for recalled materials \$1/day

Fines for hourly reserve materials \$2/hour (\$50 max.)

Fines for daily reserve materials \$2/hour (\$50 max.)

Fines for OhioLINK loans \$.50/day (\$50 max.)

Fines for laptop computer late fee \$10/hour (\$100 max.)

Archival Services

Photograph for personal use \$5 + costs

Photograph for commercial use \$75 + costs

Research time by assistant (min. 2 hrs) \$20/hour

Photocopying time by assistant (min. 2 hrs) \$15/hour + copies

Photocopies \$.25/copy + postage

Film footage for commercial use (price varies) \$45/second

Research Service (1-hour minimum charged)

UA students, faculty and staff At cost

Others \$90/hour + costs

Computer-Based Search Service (\$5 minimum, no refunds)

UA students, faculty and staff At cost

Others \$60/hour + costs

Nutrition Center

Minimum Fee \$5



Fees and Expenses continued

Student Recreation and Wellness Services

Full details including the full list of membership and guest fees can be found at the [Student Recreation and Wellness Services](#) website

Student Union

Bowling: Academic Class (class + 2 hours per week practice time)	\$60/student
Billiards: Academic Class (class + 2 hours per week practice time)	\$60/student

University Police Department

Police Service Calls (for vehicle assistance)	No Charge
Special Events Detail (3 hour minimum)	\$41.72/hour
Police Report - 1-5 pages	No Charge
6 or more pages	.05/page
Fingerprinting - Students, faculty and staff	\$5/card
All others	\$15/card
Photo	\$5
Web-based records check: BCI only/FBI only/BCI and FBI	\$27/\$29/\$52

Parking and Transportation Fees

Complete student transportation information and instructions and costs of obtaining a parking permit can be found on the Parking Services website.

Students and employees who desire a twenty-four hours per day, seven days per week parking privilege may apply for a permit and be assessed an optional parking permit fee for such privilege. The University may limit the locations that such permit shall be valid, and may limit the number of such permits that will be issued per year, per academic term, or other period. Qualified residence hall students will receive this parking privilege pursuant to the terms of their residence hall contract, without the necessity of paying an additional optional parking permit fee.

Course Materials Fee Schedule

A course materials fee is assessed to cover the cost of instructional materials for some of The University's undergraduate courses.

Enrollment Cancellation

An undergraduate student whose financial account shows an amount due after their assigned due dates risks having all or part of their registration for current and/or future terms cancelled; however, non-payment of fees does not guarantee enrollment cancellation. If a student enrolls in classes and then decides not to attend, it is still the student's responsibility to drop their classes to ensure the proper credit toward fees for the term, as defined by the current refund policy.

How to drop a class

Payment Plans and Options

Payment plans are available to help those students who cannot pay the full charges for tuition, on-campus housing and/or the meal plan at the start of the semester. To read more and sign up, visit the Payment options portion of the Office of Student Accounts website.

Student Health and Accident Insurance

All registered students taking six or more credit hours, doctoral students, ELI students and other special academic program students are eligible to enroll in a student health insurance plan offered by the Leonard Insurance Company on behalf of the University. All registered international students taking credit hours are

required to purchase this insurance plan unless proof of comparable coverage is furnished. Visit the Student Health Insurance page located within the Student Health Services website.

Veterans Information

Full veteran information can be found at the Military Services Center website. The mission of the Center is to provide comprehensive enrollment and referral services to veterans and their families, making the transition to The University of Akron as smooth as possible.

Regulations Regarding Refunds

The Office of Student Accounts helps students and parents by addressing questions and concerns about refunds if needed. Complete details are located on that website.

Residence Hall Refunds

Refund/Release and Forfeiture Policy

A contract for housing accommodations at The University of Akron upon being breached by the student or otherwise terminated by The University of Akron is subject to the following refund provisions:

A **full refund** of room fees and the Prepayment under the following circumstances:

- Graduation of the student from The University of Akron;
- Academic dismissal of the student from The University of Akron;
- Non-attendance or complete withdrawal by the student from The University of Akron prior to the start of the Contract term (except Prepayment which shall be forfeited). Prepayment will be refunded for new entering students and new transfer students when notification of intent to break Contract is received prior to the fifteenth of May for the following fall semester; or
- In the event mandatory or recommended participation in academic programs of The University of Akron requires the student to commute regularly beyond the Akron metropolitan area (i.e., student teaching or co-op assignments).

A **partial refund** of paid room and board fees, except the Prepayment fee, once occupancy has been established (e.g., acceptance of room keys and/or signing occupancy document) will be prorated beginning on the date the student officially surrenders use of University housing and returns all appropriate keys (room and apartment keys) to University staff and satisfies University-mandated housing separation requirements and procedures under the following circumstances:

- Cancellation of the entire Contract term after the start of the fall semester and subsequent spring semester; or
- Cancellation of a single semester Contract after the start of that semester.

A **partial refund** of paid room and board fees when the student has fulfilled fall semester obligations and breaches the Contract for spring semester, except when under any dismissal or suspension. The student shall pay, as administrative fee for breach of the terms of the Contract, an amount of \$200.00.

The student shall not be liable for further forfeitures and shall be released of further financial liability beyond the date of termination as per the refund/release and forfeiture policy if the University, in its sole discretion, terminates the contract:

- For reasons related to the orderly operation of the residence halls, or for reasons relating to the health, physical or emotional safety and well-being of the student, or for reasons relating to the health and well-being of the persons or property of other students, faculty, staff or University property; or
- In the event that the student is dismissed or suspended from The University of Akron for disciplinary reasons in accordance with laws or rules and regulations of the Board of Trustees, or, if the student is placed on terms of disciplinary probation in accordance with laws or rules and regulations of the Board of Trustees, whereby such terms of probation prohibit the student from residing in University housing accommodations.

Contract cancellations for a current semester received after the 12th week of that semester will be assessed the full semester fees.

The student is financially responsible for fees incurred through the date of such termination, dismissal, suspension or probation or until the student has completed the check-out process with the appropriate University employee, whichever date is later.

Notice requirements. All notices of intent to break this contract must be submitted in writing to the department of residence life and housing. If the student is under the age of eighteen years, the written notification of termination must be co-signed by the student's parent or legal guardian.

No-Show Policy. The University will hold a student's assignment until close of business on Wednesday of the first week of each semester. At that time the room will be reassigned, student's Contract will be cancelled and Prepayment will be forfeited, or cancellation fee incurred, whichever is applicable.

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Audiology and Speech Center Fees

Fee Description	Amount
Evaluation of Speech/Voice Device (per hour)	\$95.00
Modification of Speech/Voice Device (per hour)	\$70.00
Assistive Technology for Literacy: Assessment	\$130.00
Assistive Technology for Literacy: Intervention	\$70.00
Speech-Language and/or Hearing Screening	\$20.00
92506 Evaluation of Speech, Language, Voice, Communication, and/or Auditory Processing	\$125.00
Office Consultation (per hour)	\$80.00
92507 Treatment of Speech, Language, Voice, Communication, and/or Auditory Processing Disorder; Individual	\$70.00
92508 Treatment of Speech, Language, Voice, Communication and/or Auditory Processing Disorder; Group 2, or more (per hour)	\$35.00
92610 Evaluation of Oral and Pharyngeal Swallowing Function (per hour)	\$200.00
92526 Treatment of Swallowing Dysfunction and/or Oral Function for Feeding (per hour)	\$65.00
92601 Diagnostic Analysis of Cochlear Implant, Patient Younger Than 7 Years of Age; With Programming (per hour)	\$70.00
92602 Diagnostic Analysis of Cochlear Implant, Patient Younger than 7 Years of Age; with Subsequent Programming (per hour)	\$70.00
92603 Diagnostic Analysis of Cochlear Implant, Age 7 or Older; with Programming (per hour)	\$70.00
92604 Diagnostic Analysis of Cochlear Implant, Age 7 or Older; with Subsequent Programming (per hour)	\$70.00
96105 Assessment of Aphasia (Includes Assessment of Expressive and Receptive Speech and Language Function, Language Comprehension, Speech Productions Ability, Reading, Spelling, Writing, e.g. by Boston Diagnostic Aphasia Exam) with Interpretation and Report, per Hour	\$75.00
96110 Developmental (Screening), with Interpretation and Report (Per Standardized Instrument Form)	\$20.00
96111 Developmental Testing, (Includes Assessment of Motor, Language, Social, Adaptive, and/or Cognitive Functioning by Standardized Developmental Instruments) with Interpretation and Report	\$125.00
96125 Standardized Cognitive Performance Testing (e.g. Ross Information Processing Assessment) per Hour of a Qualified Health Care Professional's Time, Both Face to Face Time Administering Tests to the Patient and Time Interpreting These Test Results and Preparing the Report *Must Be Billed with "GN" Modifier	\$105.00
Modification of Speech/Voice Device (per hour)	\$70.00
97532 Development of Cognitive Skills to Improve Attention, Memory, Problem Solving (Includes Compensatory Training), Direct (One-on-One) Patient Contact by the Provider, Each 15 Minutes	\$15.00
92607 Evaluation for Prescription for Speech-Generating Augmentative and Alternative Communication Device, Face-to-Face with the Patient; First Hour	\$175.00
92608 Evaluation for Prescription for Speech-Generating Augmentative and Alternative Communication Device, Face-to-Face with the Patient; Each Additional 30 Minutes	\$75.00
92605 Evaluation for Prescription of Non-Speech Generating Augmentative and Alternative Communication Device, Face-to-Face with the Patient; First Hour	\$125.00
92618 Evaluation for Prescription of Non-Speech Generating Augmentative and Alternative Communication Device, Face-to-Face with the Patient; Each Additional 30 Minutes	\$80.00
92609 Therapeutic Service(s) for the Use of Speech-Generating Device, Including Programming and Modification	\$70.00

Fee Description	Amount
92606 Therapeutic Service(s) for the Use of Non-Speech Generating Device, Including Programming and Modification	\$70.00
Assistive Technology for Literacy: Assessment	\$130.00
Assistive Technology for Literacy: Intervention	\$70.00
92551 Screening Test, Pure Tone, Air Only	\$20.00
92552 Pure Tone Audiometry (Threshold); Air Only	\$20.00
92553 Pure Tone Audiometry Air & Bone	\$35.00
92556 Speech Audiometry Threshold; with Speech Recognition	\$35.00
92557 Comprehensive: Audiometry Threshold Evaluation and Speech and Speech Recognition (92553 and 92556 Combined)	\$70.00
92558 Evoked Otoacoustic Emissions, Screening (Qualitative Measurement of Distortion Product or Transient Evoked Otoacoustic Emissions), Automated Analysis	\$20.00
92626 Evaluation of Auditory Rehabilitation; First Hour	\$125.00
92627 Evaluation of Auditory Rehabilitation Status; Each Additional 15 Minutes	\$25.00
92630 Auditory Rehabilitation; Pre-Lingual Hearing Loss	\$65.00
92633 Auditory Rehabilitation; Post-Lingual Hearing Loss	\$70.00
92567 Tympanometry (Impedance Testing)	\$20.00
92550 Tympanometry and Reflex Threshold Measurements	\$30.00
92585 Auditory Evoked Potentials for Evoked Response Audiometry and/or Testing of the Central Nervous System; Comprehensive	\$125.00
92586 Auditory Evoked Potentials for Evoked Response Audiometry and/or Testing of the Central Nervous System; Limited	\$60.00
92587 (Distortion Product) Evoked Otoacoustic Emissions; Limited (Evaluation) (To Conform the Presence or Absence of Hearing Disorder, 3-6 Frequencies) (Or Transient Evoked Otoacoustic Emissions, with Interpretation and Report)	\$40.00
92588 (Distortion Product) Evoked Otoacoustic Emissions; Comprehensive or Diagnostic Evaluation (Quantitative Analysis of Outer Hair Cell Function by Cochlear Mapping, Minimum of 12 Frequencies) (with Interpretation and Report)	\$80.00
92563 Tone Decay Test	\$20.00
92565 Stenger Test, Pure Tone	\$20.00
92568 Acoustic Reflex Testing; Threshold	\$20.00
92577 Stenger Test, Speech	\$20.00
92570 Acoustic Immittance Testing Includes Tympanometry (Impedance Testing), Acoustic Reflex Threshold Testing, and Acoustic Reflex Decay Testing (Do Not Report 92570 in Conjunction with 92567, 92568)	\$40.00
Off-Site Consultation (per hour)	\$80.00
HEARING AID SERVICES	
97755 ALD Exam & Selection	\$70.00
92590 Hearing Aid Exam & Selection: Monaural	\$65.00
92591 Hearing Aid Exam & Selection: Binaural	\$65.00
92592 Hearing Aid Check: Monaural	\$30.00
92593 Hearing Aid Check: Binaural	\$30.00
V5014 Repair Aid - Hearing Aid Repair/Service: Out of Warranty	Cost x 1.5
V5014 Repair Aid - Hearing Aid Extended Warranty	Cost x 1.5
92594 Electroacoustic Analysis: Monaural	
92595 Electroacoustic Analysis: Binaural	
97703 Hearing Aid: Fit/Orientation/Check	
V5010 Hearing Aid Assessment	
V5020 Conformity Check/Real Ear Measurement	
Hearing Aids (Conventional)	*Acquisition Cost x 2.8
Hearing Aid Monaural V5060 BTE/ V5050 ITE/ V52343 ITC/ V5242 CIC	*Acquisition Cost x 2.8
Hearing Aid Binaural V5140 BTE/ V5130 ITE/ V5249 ITC/ V5248 CIC	*Acquisition Cost x 2.8
HA CROS V5170 ITE/ V5180 BTE	*Acquisition Cost x 2.8

Fee Description	Amount
HA BICROS V5210 ITE/ V5220 BTE	*Acquisition Cost x 2.8
Hearing Aids (Programmable)	*Acquisition Cost x 2.0
HA Prog. Analog Monaural V5247 BTE/ V5246 ITE/ V5245 ITC/ V5244 CIC	*Acquisition Cost x 2.0
HA Prog. Analog Binaural V5253 BTE/ V5252 ITE/ V5251 ITC/ V5250 CIC	*Acquisition Cost x 2.0
Hearing Aids (Digital Signal Processing)	*Acquisition Cost x 1.7
HA Digital Monaural V5257 BTE/ V5256 ITE/ V5255 ITC/ V5254 CIC	*Acquisition Cost x 1.7
HA Digital Binaural V5261 BTE/ V5260 ITE/ V5259 ITC/ V5258 CIC	*Acquisition Cost x 1.7
Assistive Listening Devices (ALDs)	Mfr. Sug. Retail Price
V5268 ALD Telephone Amplifier	Mfr. Sug. Retail Price
V5269 ALD Alerting	Mfr. Sug. Retail Price
V5270 ALD TV Amplifier	Mfr. Sug. Retail Price
V5272 ALD TDD	Mfr. Sug. Retail Price
V5273 ALD for US with CI	Mfr. Sug. Retail Price
V5275 Ear Impression	Mfr. Sug. Retail Price
V5299 Miscellaneous Service	Mfr. Sug. Retail Price
Miscellaneous	*Acquisition Cost x 2.0
V5090 Dispensing Fee Unspecified	\$200.00
V5160 Dispensing Fee HA Binaural	\$300.00
V5262 Disposable Hearing Aid	*Acquisition Cost x 2.0
V5264 Earmold Services (Swim Plugs or Earmolds)	*Acquisition Cost x 2.0
V5264 Earmold Services (Musician)	*Acquisition Cost x 1.5
V5265 Earmold Disposable Hearing Aid	*Acquisition Cost x 2.0
V5266 Batteries	* Acquisition Cost x 2.0
V5267 Hearing Aid Accessory	*Acquisition Cost x 2.0
Tinnitus Maskers	*Acquisition Cost x 2.0
Central Auditory Processing Educational Report	\$60.00
92620 Evaluation of Central Auditory Function, with Report; Initial 60 minutes	\$100.00
92621 - Each Additional 15 Minutes	\$20.00
92625 Assessment of Tinnitus (Including pitch, Loudness Matching and Masking) - (Do not report 92625 in Conjunction with 92562) (For Unilateral Assessment, Use Modifier 52)	\$65.00
Hyperacusis Evaluation	\$65.00
97112 Therapeutic Procedure, One or More Areas, Each 15 Minutes; Neuromuscular Reeducation of Movement, Balance, Coordination, Kinesthetic sense, Posture, and/or Proprioception for Sitting and/or Standing Activities - Vestibular Rehabilitation (per hour)	\$15.00

Fee Description	Amount
92540 Basic Vestibular Evaluation, Includes Spontaneous Nystagmus Test with Eccentric Gaze Fixation Nystagmus with Recording, Positional Nystagmus Test, Minimum of 4 Positions, with Recording, Optokinetic Nystagmus Test, Bidirectional Foveal and Peripheral Stimulation, with Recording, and Oscillating Tracking Test, with Recording. (Do Not Report 92540 in Conjunction with 92541, 92542, 92544 and 92545)	\$180.00
92541 Spontaneous Nystagmus Test, Including Gaze and Fixation Nystagmus, with Recordings - Spontaneous Nystagmous Test	\$45.00
92542 Positional Nystagmus Test, Minimum of 4 Positions, with Recording	\$65.00
Evaluation of Speech/Voice Device (per hour)	\$95.00
92543 Caloric Vestibular Test, Each Irrigation (Binaural, Bithermal Stimulation Constitutes four Tests), with Recording	\$12.00
92532 Positional Nystagmous Test	\$45.00
92543 Caloric Vestibular Test, Each Irrigation (Binaural, Bithermal Stimulation Constitutes four Tests), with Recording	\$12.00
92534 Optokinetic Nystagmous Test	\$45.00
92545 Oscillating Tracking Test, with Recording	\$45.00
92547 Use of Verical Electrodes (Used in Conjunction with 92541-92546) (For Unlisted Vestibular Tests, Use 92700)Use of Electrodes	\$45.00

*Acquisition Cost refers to single-unit cost.

A sliding scale, or the Health & Human Services guidelines on poverty, will be used if the client has no insurance and if the family income and the number of dependents indicates there is a need. The sliding scale is detailed in Appendix A.

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Dance Institute Fees

Fee Description	Period	Amount
Placement Fee		\$20.00
New Student Registration Fee		\$10.00
Summer Curriculum (1-4 weeks)		
Advanced	4 weeks	\$1,020.00
	3 weeks	\$800.00
	2 weeks	\$538.00
	1 week	\$318.00
Intermediate II	4 weeks	\$900.00
	3 weeks	\$710.00
	2 weeks	\$510.00
Intermediate I	4 weeks	\$848.00
	3 weeks	\$662.00
	2 weeks	\$476.00
Beginner/Advanced-Beginner	2 weeks	\$311.00
Afternoon Beginner/ Advanced-Beginner Arts Camp w/ dance (2 weeks)		\$128.00
Afternoon Arts Camp only (2 weeks)		\$192.00
Pre-Ballet/Storybook Dance (one 45-minute classes/week)	4 weeks	\$55.00
Tap (2 classes/week)		\$112.00
Adults:(one class/week)	5 weeks	
Ballet/ Jazz/ Modern		\$72.00
Pilates -based Mat Exercise/Hip-Hop		\$58.00
Summer Single Classes		\$15.00
Program Discounts (only one type of discount may be applied)		
UA Faculty & Staff Family		20% off per person
Multiple Child/Family Member Attending		25% off 2nd, 30% off 3rd
UA Dance Majors/Minors		20% off full summer program and/or single class
Academic Year Curriculum (two 16-week semesters total)		
Advanced	9 classes/ week	\$3,100.00
Intermediate II	7 classes/ week	\$2,624.00
Intermediate I	7 classes/ week	\$2,318.00
Advanced-Beginner	4 classes/ week	\$1,722.00
Beginner B	3 classes/ week	\$1,304.00
Beginner A	2 classes/ week	\$872.00
Pre-Ballet	1 class/ week	\$438.00
Storybook Dance	1 class/ week	\$438.00
Tap	1 class/ week	\$438.00

Adults:

Ballet/Jazz/Modern	1 class/ week	\$448.00
Pilates-based Mat Exercise/Hip-Hop	1 class/ week	\$360.00
Academic Year Single Classes		\$15.00
Singles Classes for UA Dance students		\$7.50
Program Discounts		
UA Faculty & Staff Family		20% off per person
Multiple Child/Family Member Attending Dance Institute		25% off 2nd, 30% off 3rd
Refund Service Charge (per refund)		\$25.00
This fee would be charged to any student or student's parent who has paid tuition and requests a refund due to an injury or an extenuating circumstance. (No charge would be incurred for crediting the tuition to the time period when the student returns.)		
Late Pick-up Fees (beginning 10 minutes after the end of the last class)		\$15 per hour
(for students who are not picked up following the last class of the day-- must be paid at the time of pickup or before the beginning of the next scheduled class)		

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Center for Child Development Fees

Fee Description	Period	Amount
Registration (Academic Year / one time)		\$75
Insurance (Per child/per year)		\$35
Enrollment (Preschool and School Age --Full Day)		
	University Full-Time, per week (up to 45 hours, then hourly)	\$205
	Community Full-Time, per week (up to 45 hours, then hourly)	\$210
	Part Time - 3 days/week	\$160
	Part Time - 2 days/week	\$115
Schedule Changes		
	One Change	No Charge
	Subsequent Changes	\$6
Toddler Program		
	University Full-Time, per week (up to 45 hours, then hourly)	\$230
	Community Full-Time, per week (up to 45 hours, then hourly)	\$235
	Part Time - 3 days/week	\$173
	Part Time - 2 days/week	\$120
Activity Fee (Fall/Spring/annual/per child)		\$75
Field Trip T-Shirt		\$15
Late Pick-up Fees (for children who are not picked up by the Center's stated closing time)		
	1 - 15 minutes after closing	\$25
	16 - 30 minutes after closing	\$50
	Late Fee Payment (assessed if weekly tuition is not paid by the second school day of the week)	\$10/week

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Financial Aid

Financial aid programs were developed by federal and state governments, as well as by institutions of postsecondary learning to assist students from families with limited resources in meeting their educational expenses. The primary purpose of financial aid is to ensure that no person is denied the opportunity of attending college because of financial need.

Generally, financial aid is provided in four forms: scholarships, grants, loans and work. To apply for all types of state and federal aid and programs, complete the Free Application for Federal Student Aid (FAFSA). You will be required to complete a separate application for University and non-university scholarships.

Mission Statement

The Mission of The University of Akron's Office of Student Financial Aid is to help students achieve their educational potential. This office accomplishes this by:

- Adhering to state and federal regulations as well as University policies regarding the awarding of aid funds
- Being committed to removing financial barriers for those who wish to pursue postsecondary learning
- Making every effort to assist students with financial need
- Having an awareness of the issues affecting our students and advocating for our students' interests at the institutional, state and federal levels
- Educating our students and their families by providing quality consumer information
- Respecting the dignity and diversity of each one of our students by providing services that do not discriminate on the basis of race, gender, ethnicity, sexual orientation, religion, disability, age or economic status
- Ensuring the confidentiality of our students' information
- Assuring the uniform application of all needs analysis formulas consistently across The University of Akron's full population of financial aid applicants
- Committing to the highest level of ethical behavior by avoiding conflict of interest or the appearance of such a conflict

Maintaining the highest level of professionalism reflects the Student Financial Aid office's commitment to the goals and mission of The University of Akron.

The [Financial Aid website](#) will serve as your guide. It has all the information you need to get started with financial aid applications and learn about the process of using aid to pay for college.



About General Education

The General Education Program of The University of Akron is the core of courses which provides the skills and knowledge considered essential for all graduates of the University. The General Education Program is designed to ensure, insofar as possible, that our graduates will possess:

- The capacity for critical, independent thought
- A personal sense of values, tempered by tolerance and a regard for the rights of others
- The ability to use language effectively as a medium of both thought and expression
- The analytical skills necessary to make sound qualitative and quantitative judgements
- The ability to describe and explain differences in civilizations and cultures
- An understanding of the conditions that affect them as individuals and as members of society
- The capacity to evaluate intellectual and artistic achievements
- A knowledge of science, technology and mathematics and their effects on human activities
- A knowledge of positive mental and physical health practices

Recommended Core Curriculum

Students pursuing a baccalaureate degree must complete the General Education Program, which consists of 42 credits distributed among eight categories. Students are advised to select General Education courses in conjunction with courses needed for their major during their first few years of study. Students must complete their English, Mathematics, and Speech requirements during the first 48 credit hours. All students are responsible for meeting prerequisites for the necessary courses listed in the General Education Program. NOTE: Specific departmental requirements may vary, so students are encouraged to consult an adviser for specific information about selecting appropriate General Education courses from the recommended core curriculum.

English Composition: 7 credits - 2 courses

Take one of the following three courses:

	Credits
2020:121 English	4
3300:111 English Composition I	4
3300:113 African-American Language and Culture I: College Composition	4

Take one of the following three courses:

2020:222 Technical Report Writing	3
3300:112 English Composition II	3
3300:114 African-American Language and Culture II: College Composition	3

Mathematics - 3 credits

Students enrolling in a higher-level math course may use this course to meet their General Education requirement.

		Credits
2030:152,153	Technical Mathematics II, III*	4
*Must complete BOTH courses. Only 3 credits apply toward fulfilling General Education requirement.		
2030:161	Math for Modern Technology	4
3450:135	Excursions in Mathematics	3
3450:145	College Algebra	4
3450:210	Calculus with Business Applications	3
3450:240	Mathematical Foundations for Early Childhood Educations	3
3470:250	Statistics for Everyday Life	4
3470:260	Basic Statistics	3
3470:261	Introduction to Statistics I	2
3470:262	Introduction to Statistics II	2

Natural Science: 8 credit minimum - At least two courses, one of which must be a lab

Students in higher-level science courses with a lab may use those courses to meet their General Education requirements. Select one course each from a minimum of two different sets:

Credits**Anthropology**

3230:151	Human Evolution/Lab	4
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Biology

2780:106	Anatomy and Physiology for Allied Health I	3
2780:107	Anatomy and Physiology for Allied Health II	3
3100:100	Introduction to Botany/Lab	4
3100:101	Introduction to Zoology/Lab	4
3100:103	Natural Science Biology/Lab	4
3100:104	Introduction to Ecology Lab	1
3100:105	Introduction to Ecology	2
3100:108	Introduction to Biological Aging (Wayne College only)	3

Chemistry

2820:105	Basic Chemistry/Lab	3
2820:111	Introduction to Chemistry	3
2820:112	Introductory and Analytical Chemistry	3
3150:100	Chemistry and Society	3
3150:101	Chemistry for Everyone/Lab	4

Environmental Studies

3370:211	Introduction to Environmental Science	3
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Geology

3370:100	Earth Science	3
3370:101	Introduction to Physical Geology	4
3370:102	Introductory Historical Geology/Lab	4
3370:103	Natural Science Geology	3
3370:121-141	Concepts in Geology	1
3370:171	Introduction to Oceans	3
3370:200	Environmental Geology	3
3370:201	Exercises in Environmental Geology/Lab1	1
3370:203	Exercises in Environmental Geology II/Lab	1

Physics

2820:161	Technical Physics: Mechanics I	2
2820:162	Technical Physics: Mechanics II	2
2820:163	Technical Physics: Electricity and Magnetism	2
2820:164	Technical Physics: Heat and Light	2
3650:130	Descriptive Astronomy/Lab	4
3650:133	Music, Sound and Physics/Lab	4
3650:137	Light/Lab	4

Oral Communication: 3 credits**Credits**

2540:263 Professional Communications and Presentations	3
7600:105 Introduction to Public Speaking	3
7600:113 Effective Oral Communication	3

Social Sciences: 6 credits

One course from two different sets for a minimum of 6 credits **Credits**

Set 1 - Economics

2040:247	Survey of Basic Economics	3
3250:100	Introduction to Economics	3
3250:200	Principles of Microeconomics	3
3250:244	Introduction to Economic Analysis	3

Set 2 - Geography

Social Sciences: 6 credits

3350:100 Introduction to Geography 3

Set 3 - Government/Politics

2040:242 American Urban Society 3

3700:100 Government and Politics in the United States 3

3700:150 World Politics and Government 3

Set 4 - Psychology

2040:240 Human Relations 3

3750:100 Introduction to Psychology 3

Set 5 - Sociology/Anthropology

2040:244/344 Death and Dying 2

3230:150 Human Cultures 3

3850:100 Introduction to Sociology 4

5100:150 Democracy in Education 3

Set 6 - United States History

3400:250 U.S. History to 1877 4

3400:251 U.S. History since 1877 4

Set 7 - Science/Technology/Society

2040:241 Technology of Human Values 2

2040:243 Contemporary Global Issues 3

3240:100 Introduction to Archaeology 3

3600:125 Theory and Evidence 3

Humanities: 10 credits - 3 courses

All students are required to complete:

Credits3400:210 Humanities in the Western Tradition I 4
or

3400:221 History in the World Since 1300 4

Students must select one course from two different sets below for a minimum of six additional credits:

Set 1 - Fine Arts

7100:201 Visual Arts Awareness 3

7500:201 Exploring Music: Bach to Rock 3

7800:301 Introduction to Theatre through Film 3

7900:200 Viewing Dance# 3

Set 2 - Philosophy/Classics

3200:220 Introduction to the Ancient World 3

3200:230 Sports and Society in Ancient Greece and Rome 3

3200:289 Mythology of Ancient Greece 3

3600:101 Introduction to Philosophy 3

3600:120 Introduction to Ethics 3

3600:170 Introduction to Logic 3

Set 3 - Literature

3300:250 Classic and Contemporary Literature 3

3300:252 Shakespeare and His World 3

3300:281 Fiction Appreciation 3

Other literature in English translation:

3200:361 Literature of Greece 3

3580:350 Literature of Spanish-America in Translation 3

Set 4 - History/General Humanities3400:210 Humanities in the Western Tradition I 4
or

3400:221 History of the World Since 1300 4

Area Studies & Cultural Diversity: 4 credits - 2 courses**Credits**

2040:254 The Black Experience from 1619 to 1877 2

Area Studies & Cultural Diversity: 4 credits - 2 courses

2040:256	Diversity in American Society	2
2040:257	The Black Experience 1877 to 1954	2
2040:258	The Black Experience 1954 to Present	2
3001:200	Introduction to Women's Studies	3
3002:201	Introduction to Pan African Studies	3
3230:251	Human Diversity	3
3350:275	Geography of Cultural Diversity	2
3400:285	World Civilization: China	2
3400:286	World Civilization: Japan	2
3400:287	World Civilization: SE Asia	2
3400:288	World Civilization: India	2
3400:289	World Civilization: Middle East	2
3400:290	World Civilization: Africa	2
3400:291	World Civilization: Latin America	2
3501:210	Arabic Culture Through Film	2
3502:210	Chinese Culture Through Film	2
3560:201	Japanese Culture Through Film	2
7600:325	Intercultural Communication	3

Note: A student majoring in the College of Engineering is only required to take two credits from the Area Studies & Cultural Diversity area of General Education requirements.

Physical Education/Wellness: 1 credit

		Credits
2740:122	Emergency Responder I	1
5500:100	Introduction to Sports Studies	3
5540:120-183,190	Physical Education	.5-1
5550:150	Concepts of Health and Fitness	3
5550:194	Sports Officiating	2
5550:211	First Aid and Cardiopulmonary Resuscitation	2
5570:101	Personal Health	2
7400:133	Nutrition Fundamentals	3
7510:126	Marching Band	1
7900:119/120	Modern Dance I/II	2
7900:124/125	Ballet I/II	2
7900:130/230	Jazz Dance I/II	2
7900:144	Tap Dance I/II	2

Note: Dance Technique courses do not meet this requirement for dance majors.

7900:200 does not meet this requirement for dance majors or dance minors.



About General Education in Summit College*

All terminal associate degree programs currently within Summit College will contain 18 hours of general education course work (4 hours of which must be English) to be selected from the areas and courses designated in the table below. This course work must be approved by the General Education Advisory Committee and, therefore be accepted as part of the state-wide Ohio Transfer Module. Students are encouraged to select approved course work from Summit College.

Core Curriculum for Summit College

Note: Course work with HIGHER numbers are accepted as General Education courses (e.g. **Technical Math IV** meets General Education requirements even though only **Technical Math II & III** are listed).

English Area: 4 credits - 1 course

Credits

2020:121 English 4

Oral Communication: 3 credits - 1 course

Credits

2540:263 Professional Communications and Presentations 3

Mathematics: 3 credits - 1 to 2 courses

Credits

2030:152 Technical Math II 2

2030:153 Technical Math III 2

2030:161 Math for Modern Technology 4

Social Science/Interpersonal Skills - 6 credits

Credits

2040:240 Human Relations 3
and

3 credits - 1 to 2 courses:

2040:242 American Urban Society 3

2040:247 Survey of Basic Economics 3

2040:243 Contemporary Global Issues 3

2040:241 Technology and Human Values 2

Natural Science: 3 credits - 1 to 2 courses

Credits

2820:105 Basic Chemistry 3

2820:111 Introductory Chemistry 3

2820:112 Introductory and Analytical Chemistry 3

2780:106 Anatomy & Physiology for Allied Health I 3

2780:107 Anatomy & Physiology for Allied Health II 3

2820:110 Physical Science for Technicians 3

2820:161 Technical Physics: Mechanics I 2

2820:162 Technical Physics: Mechanics II 2

2820:163 Technical Physics: Electricity & Magnetism 2

2820:164 Technical Physics: Heat & Light 2

Area Studies/Cultural Diversity: 2 credits

Credits

2040:254 The Black Experience from 1619 to 1877 2

2040:256 Diversity in American Society 2

2040:257 The Black Experience from 1877 to 1954 2

2040:258 The Black Experience 1954 to Present 2

*Approved by Summit College Faculty on 11/14/2006



General Education/Transfer Program

Wayne College offers the first two years of general baccalaureate education for transfer to the Akron campus of The University of Akron or to any other college or university. General courses in communications, the humanities, cultural diversity, social sciences, mathematics and natural sciences are required, along with basic courses in the student's chosen field. For undecided students, this is the time to take courses from several areas in order to select a major.

The following outlines represent the first two years of study for various bachelor's degree programs of The University of Akron. Some courses not currently available at Wayne College may also need to be completed in the first two years of selected University programs to assure proper course sequencing and timely completion of degree requirements. These programs are marked with an asterisk (*). Please see a Wayne College adviser for further details.

Finally, completion of the courses listed may also qualify a student to receive either the Associate of Arts or the Associate of Science degree. Please consult a Wayne College adviser for further details.

- [3100: Biology](#)
- [3150: Chemistry](#)
- [3250: Economics](#)
- [3300: English*](#)
- [3350: Geography and Planning*](#)
- [3370: Geology and Environmental Science*](#)
- [3400: History](#)
- [3450: Mathematics*](#)
- [3460: Computer Science*](#)
- [3470: Statistics*](#)
- [3700: Political Science*](#)
- [3850: Psychology*](#)
- [3850: Sociology*](#)
- [4200: Chemical Engineering*](#)
- [4300: Civil Engineering*](#)
- [4400: Electrical Engineering*](#)
- [4600: Mechanical Engineering*](#)
- [5200: Early Childhood Education*](#)
- [5250: Middle Level Education](#)
- [5300: Secondary Education*](#)
- [5610: Special Education*](#)
- [6000: Business Administration Options](#)
- [7400: Family and Consumer Sciences*](#)
- [7600: Communication](#)
- [7750: Social Work](#)
- [8200: Nursing \(Basic Program\)](#)

3100: Biology

First Year

	Credits
3100:111 Principles of Biology I	4
3100:112 Principles of Biology II	4
3150:151 Principles of Chemistry I	3
3150:152 Principles of Chemistry I Lab	1
3150:153 Principles of Chemistry II	3
3150:154 Qualitative Analysis	2
3300:111 English Composition I	4
3300:112 English Composition II	3
3450:145 College Algebra	4
3450:149 Precalculus Mathematics	4
	32

Second Year

3100:211 General Genetics	3
3150:263 Organic Chemistry Lecture I	3
3150:264 Organic Chemistry Lecture II	3
3150:265 Organic Chemistry Laboratory I	2
3150:266 Organic Chemistry Laboratory II	2
3400:210 Humanities in the Western Tradition I	4
Physical Education/Wellness	1
Humanities Requirement	6
Area Studies/Cultural Diversity Requirement	4

3100: Biology	
Social Science Requirement	6
	34

3150: Chemistry

First Year	Credits
3150:151 Principles of Chemistry I	3
3150:152 Principles of Chemistry I Lab	1
3150:153 Principles of Chemistry II	3
3150:154 Qualitative Analysis	2
3300:111 English Composition I	4
3300:112 English Composition II	3
3450:149 Precalculus Mathematics	4
3450:221 Analytic Geometry - Calculus I	4
7600:106 Effective Oral Communication	3
Physical Education/Wellness	1
Social Science Requirement	6
	34

Second Year

3150:263 Organic Chemistry Lecture I	3
3150:264 Organic Chemistry Lecture II	3
3150:265 Organic Chemistry Laboratory I	2
3150:266 Organic Chemistry Laboratory II	2
3400:210 Humanities in the Western Tradition I	4
3450:222 Analytic Geometry - Calculus II	4
3450:223 Analytic Geometry - Calculus III	4
3650:291 Elementary Classical Physics I	4
3650:292 Elementary Classical Physics II	4
Humanities Requirement	6
	36

3250: Economics

First Year	Credits
3300:111 English Composition I	4
3300:112 English Composition II	3
3450:145 College Algebra	4
3450:215 Concepts of Calculus	4
7600:106 Effective Oral Communication	3
Beginning Foreign Language	8
Natural Science Requirement	8
Physical Education/Wellness	1
	35

Second Year

3400:210 Humanities in the Western Tradition I	4
3250:200 Principles of Microeconomics	3
3250:215 Principles of Macroeconomics	3
Area Studies/Cultural Diversity Requirement	4
Humanities Requirement	6
Intermediate Foreign Language	6
Social Science Requirement	3
Electives	3
	32

3300: English*

First Year	Credits
3300:111 English Composition I	4
3300:112 English Composition II	3

3300: English*

3450:145 College Algebra	4
3450:215 Concepts of Calculus	4
7600:106 Effective Oral Communication	3
Beginning Foreign Language	8
Mathematics Requirement	3
Physical Education/Wellness	1
Social Science Requirement	3
Electives	3
	32

Second Year

3400:210 Humanities in the Western Tradition I	4
Area Studies/Cultural Diversity Requirement	4
Humanities Requirement	6
Intermediate Foreign Language	6
Natural Science Requirement	8
Electives	4
	32

3350: Geography and Planning*

First Year	Credits
3300:111 English Composition I	4
3300:112 English Composition II	3
3350:100 Introduction to Geography	3
Mathematics Requirement	3
7600:106 Effective Oral Communication	3
Beginning Foreign Language	8
Physical Education/Wellness	1
Social Science Requirement	3
Electives	4
	32

Second Year

3400:210 Humanities in the Western Tradition I	4
Area Studies/Cultural Diversity Requirement	4
Humanities Requirement	6
Intermediate Foreign Language	6
Natural Science Requirement	8
Electives	4
	32

3370: Geology and Environmental Science**

First Year	Credits
3300:111 English Composition I	4
3300:112 English Composition II	3
3150:151 Principles of Chemistry I	3
3150:152 Principles of Chemistry I Lab	1
3150:153 Principles of Chemistry II (optional for B.A.)	3
3150:154 Qualitative Analysis (optional for B.A. and B.S.)	2
3370:101 Introduction to Physical Geology	4
3450:149 Precalculus Mathematics	4
3450:221 Analytic Geometry-Calculus I (for B.S.)	4
Physical Education/Wellness	1
Social Science Requirement	6
Electives (for B.A.)	4-9
	35

Second Year

3370: Geology and Environmental Science**	
3450:222 Analytic Geometry-Calculus II (for B.S.)	4
3370:102 Introductory Historical Geology	4
3400:210 Humanities in the Western Tradition I**	4
7600:106 Effective Oral Communication	3
Area Studies/Cultural Diversity Requirement	4
Humanities Requirement**	6
Beginning Foreign Language	8
	33

3400: History

First Year	Credits
3300:111 English Composition I	4
3300:112 English Composition II	3
3400:250 U.S. History to 1877	4
3400:251 U.S. History since 1877	4
7600:106 Effective Oral Communication	3
Beginning Foreign Language	8
Mathematics Requirement	3
Physical Education/Wellness	1
Social Science Requirement	3
	33

Second Year

3400:210 Humanities in the Western Tradition I	4
3400:323 Europe: From Revolution to World War, 1789-1914	3
3400:324 Europe: From World War I to the Present	3
Area Studies/Cultural Diversity Requirement	4
Humanities Requirement	6
Intermediate Foreign Language	6
Natural Science Requirement	8
	34

**3450: Mathematics (and Applied Mathematics)*
(see 3480: Statistics)**

3460: Computer Science*

First Year	Credits
3300:111 English Composition I	4
3300:112 English Composition II	3
3450:221 Analytic Geometry-Calculus I	4
3460:209 Computer Science I	4
Beginning Foreign Language	8
Physical Education/Wellness	1
Natural Science Requirement	8
	32

Second Year

3400:210 Humanities in the Western Tradition I	4
3450:222 Analytic Geometry-Calculus II	4
7600:106 Effective Oral Communication	3
Area Studies/Cultural Diversity Requirement	4
Humanities Requirement	6
Intermediate Foreign Language	6
Social Science Requirement	6
	33

3470: Statistics*

First Year	Credits
3300:111 English Composition I	4

3470: Statistics*

3300:112	English Composition II	3
3450:221	Analytic Geometry-Calculus I	4
3450:222	Analytic Geometry-Calculus II	4
7600:106	Effective Oral Communication	3
	Natural Science Requirements	8
	Physical Education/Wellness	1
	Social Science Requirements	6
	or	4
	Beginning Foreign Language	8
		33-35

Second Year

Students attending part time, or who are ineligible to take 3450:221 during the first year can take additional requirements at Wayne College during the second year. Students attending full time should go to the Akron campus in the second year to take required mathematics prerequisite courses. Please consult a Wayne College adviser.

3700: Political Science*

First Year	Credits
3300:111 English Composition I	4
3300:112 English Composition II	3
3700:100 Government and Politics in the U.S.	4
7600:106 Effective Oral Communication	3
Beginning Foreign Language	8
Mathematics Requirement	3
Physical Education/Wellness	1
Social Science Requirement	3
Electives	3
	32

Second Year

3400:210 Humanities in the Western Tradition I	4
Area Studies/Cultural Diversity Requirement	4
Humanities Requirement	6
Intermediate Foreign Language	6
Natural Science Requirement	8
Electives	4
	32

3750: Psychology*

First Year	Credits
3300:111 English Composition I	4
3300:112 English Composition II	3
3750:100 Introduction to Psychology	3
3750:105 Professional and Career Issues in Psychology	1
3850:100 Introduction to Sociology	4
7600:106 Effective Oral Communication	3
Beginning Foreign Language	8
Mathematics Requirement	3
Physical Education/Wellness	4
Electives	2
	32

Second Year

3400:210 Humanities in the Western Tradition I	4
Area Studies/Cultural Diversity Requirement	4
Humanities Requirement	6
Intermediate Foreign Language	6
Natural Science Requirement	8

3750: Psychology*	
Electives	4
	32
3850: Sociology*	
First Year	Credits
3300:111 English Composition I	4
3300:112 English Composition II	3
3850:100 Introduction to Sociology	4
7600:106 Effective Oral Communication	3
Beginning Foreign Language	8
Mathematics Requirement	3
Physical Education/Wellness	1
Social Science Requirement	3
Electives	4
	33
Second Year	
3230:150 Human Cultures	3
3400:210 Humanities in the Western Tradition I	4
Area Studies/Cultural Diversity Requirement	4
Humanities Requirement	6
Intermediate Foreign Language	6
Natural Science Requirement	8
	31
4200: Chemical Engineering*	
First Year	Credits
3150:151 Principles of Chemistry I	3
3150:152 Principles of Chemistry I Laboratory	1
3150:153 Principles of Chemistry II	3
3150:154 Qualitative Analysis	2
3300:111 English Composition I	4
3300:112 English Composition II	3
3450:221 Analytic Geometry-Calculus I	4
3450:222 Analytic Geometry-Calculus II	4
4100:101 Tools for Engineering	3
7600:106 Effective Oral Communication	3
Social Science Requirement	3
Physical Education/Wellness	1
	34
Second Year	
3150:263 Organic Chemistry Lecture I	3
3150:264 Organic Chemistry Lecture II	3
3150:265 Organic Chemistry Laboratory I	2
3150:244 Introduction to Economic Analysis	3
3400:210 Humanities in the Western Tradition I	4
3450:223 Analytic Geometry-Calculus III	4
3450:335 Introduction to Ordinary Differential Equations	3
3650:291 Elementary Classical Physics I	4
3650:292 Elementary Classical Physics II	4
4300:201 Statics	3
	33
4300: Civil Engineering*	
First Year	Credits
3150:151 Principles of Chemistry I	3
3150:152 Principles of Chemistry I Laboratory	1

4300: Civil Engineering*

3150:153 Principles of Chemistry II	3
3300:111 English Composition I	4
3300:112 English Composition II	3
3450:221 Analytic Geometry-Calculus I	4
3450:222 Analytic Geometry-Calculus II	4
4100:101 Tools for Engineering	3
7600:106 Effective Oral Communication	3
Social Science Requirement	3
Physical Education/Wellness	1
	32

Second Year

3250:244 Introduction to Economic Analysis	3
3400:210 Humanities in the Western Tradition I	4
3450:223 Analytic Geometry-Calculus III	4
3450:335 Introduction to Ordinary Differential Equations	3
3650:291 Elementary Classical Physics I	4
3650:292 Elementary Classical Physics II	4
4300:201 Statics	3
4300:202 Introduction to Mechanics of Solids	3
4600:203 Dynamics	3
Humanities Requirement	3
	34

4400: Electrical Engineering***First Year** **Credits**

3150:151 Principles of Chemistry I	3
3150:152 Principles of Chemistry I Laboratory	1
3150:153 Principles of Chemistry II	3
3300:111 English Composition I	4
3300:112 English Composition II	3
3450:221 Analytic Geometry-Calculus I	4
3450:222 Analytic Geometry-Calculus II	4
4100:101 Tools for Engineering	3
7600:106 Effective Oral Communication	3
Social Science Requirement	3
Physical Education/Wellness	1
	32

Second Year

3250:244 Introduction to Economic Analysis	3
3400:210 Humanities in the Western Tradition I	4
3450:223 Analytic Geometry-Calculus III	4
3450:335 Introduction to Ordinary Differential Equations	3
3650:291 Elementary Classical Physics I	4
3650:292 Elementary Classical Physics II	4
4300:201 Statics	3
4300:202 Introduction to Mechanics of Solids	3
or	
4600:203 Dynamics	3
Humanities Requirement	6
Area Studies/Cultural Diversity Requirement	2
	36

4600: Mechanical Engineering***First Year** **Credits**

3150:151 Principles of Chemistry I	3
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4600: Mechanical Engineering*

3150:152 Principles of Chemistry I Laboratory	1
3150:153 Principles of Chemistry II	3
3300:111 English Composition I	4
3300:112 English Composition II	3
3450:221 Analytic Geometry-Calculus I	4
3450:222 Analytic Geometry-Calculus II	4
4100:101 Tools for Engineering	3
7600:106 Effective Oral Communication	3
Social Science Requirement	3
Physical Education/Wellness	1
	32

Second Year

3250:244 Introduction to Economic Analysis	3
3400:210 Humanities in the Western Tradition I	4
3450:223 Analytic Geometry-Calculus III	4
3450:335 Introduction to Ordinary Differential Equations	3
3650:291 Elementary Classical Physics I	4
3650:292 Elementary Classical Physics II	4
4300:201 Statics	3
4300:202 Introduction to Mechanics of Solids	3
4600:203 Dynamics	3
Humanities Requirement	6
	37

5200: Early Childhood Education***Early Childhood Licensure Option** (age three through grade three inclusive)

First Year	Credits
3100:103 Natural Science-Biology	4
3300:111 English Composition I	4
3300:112 English Composition II	3
3350:100 Introduction to Geography	3
3400:250/251 U.S. History to 1877/Since 1877	4
or	
3700:100 Government and Politics in U.S.	4
3450:140 Fundamentals of Mathematics for Primary Educators	3
3450:240 Mathematical Foundations for Early Childhood Educators	3
7400:106 Child Development	3
7600:106 Effective Oral Communication	3
Natural Science Requirement	4
Physical Education/Wellness	1
	35
Second Year	
3400:210 Humanities in the Western Tradition I	4
5100:200 Introduction to Education	3
5100:220 Educational Psychology	3
5200:215 The Child, Family and the School	3
5500:230 Educational Technology	3
5500:245 Understanding Literacy Development and Phonics	3
5500:286 Teaching Multiple Texts through Genre	3
5610:450 Special Education Programming in Early Childhood	3
5610:459 Collaboration and Consultation in Schools	3
7400:270 Theory and Guidance of Play	3
7400:280 Early Childhood Curriculum Methods	3
	37

5250: Middle Level Education***Middle Level Licensure Option** (grades 4-9 inclusive)

First Year	Credits
3300:111 English Composition I	4
3300:112 English Composition II	3
3350:100 Introduction to Geography	3
3400:250/251 U.S. History to 1877/Since 1877	4
or	
3700:100 Government and Politics in U.S.	4
3470:260 Basic Statistics	3
7600:106 Effective Oral Communication	3
Natural Science Requirement	8
Physical Education/Wellness	1
Area of Concentration Course or Electives	3

32**Second Year**

3400:210 Humanities in the Western Tradition I	4
5100:200 Introduction to Education	3
5100:220 Educational Psychology	3
5500:230 Educational Technology	3
5500:245 Understanding Literacy Development and Phonics	3
5500:286 Teaching Multiple Texts through Genre	3
5610:225 Introduction to Exceptionalities	4
Area Studies/Cultural Diversity Requirement	4
Humanities Requirement	6

32**5300: Secondary Education*****Adolescent to Young Adult Licensure Option** (Middle, Junior and Senior High School)

First Year	Credits
3300:111 English Composition I	4
3300:112 English Composition II	3
7600:106 Effective Oral Communication	3
Mathematics Requirement	3
Natural Science Requirement	8
Physical Education/Wellness	1
Social Science Requirement	6
Teaching Field(s) Course or Electives	4

32**Second Year**

3400:210 Humanities in the Western Tradition I	4
5100:200 Introduction to Education	3
5100:220 Educational Psychology	3
5500:230 Educational Technology	3
5610:225 Introduction to Exceptionalities	4
Area Studies/Cultural Diversity Requirement	4
Humanities Requirement	6
Teaching Field(s) Courses or Electives	6

32**5610: Special Education***

First Year	Credits
3100:265 Introduction to Human Physiology/Lab	4
3150:101 Chemistry for Everyone/Lab	4
or	
3150:110 Introduction: General, Organic, and Biochemistry I	3

5610: Special Education*

and

3150:111 Introduction: General, Organic, and Biochemistry Lab	1
3300:111 English Composition I	4
3300:112 English Composition II	3
3450:145 College Algebra	4
3750:100 Introduction to Psychology	3
3850:100 Introduction to Sociology	4
5550:211 First Aid & CPR	2
7400:265 Child Development	3
7600:105 Introduction to Public Speaking	3
or	
7600:106 Effective Oral Communication	3
	34

Second Year

3400:210 Humanities in the Western Tradition I	4
5100:200 Introduction to Education	3
5100:220 Educational Psychology	3
5500:230 Educational Technology	3
5500:245 Understanding Literacy Development and Phonics	3
5500:286 Teaching Multiple Texts through Genre	3
5610:225 Introduction to Exceptionalities	4
5610:450 Special Education Programming: Early Childhood	3
5610:459 Collaboration & Consultation in Schools and Community	3
5610:467 Management Strategies in Special Education	3
7100:210 Visual Arts Awareness	3
or	
7500:201 Exploring Music: Bach to Rock	3
Humanities Requirement	3
	37

6000: Business Administration Options***Accounting, Finance, Management, Marketing, Advertising, International Business****First Year****Credits**

3300:111 English Composition I	4
3300:112 English Composition II	3
3450:145 College Algebra	4
3450:210 Calculus with Business Applications	3
or	
3450:215 Concepts of Calculus	4
3750:100 Introduction to Psychology	3
or	
3850:100 Introduction to Sociology	4
or	
3230:150 Human Cultures	3
7600:106 Effective Oral Communication	3
Natural Science Requirement	8
Physical Education/Wellness	1
Electives	1-4
	31-32

Second Year

3250:200 Principles of Microeconomics	3
3250:201 Principles of Macroeconomics	3
3400:210 Humanities in the Western Tradition I	4
6200:201 Accounting Principles I	3

6000: Business Administration Options*

6200:202	Accounting Principles II	3
6200:250	Spreadsheet Modeling & Decision Analysis	3
6400:220	Legal and Social Environment of Business (<i>except Accounting majors</i>)	3
	Area Studies/Cultural Diversity Requirement	4
	Humanities Requirement	6
		32

7400: Family and Consumer Sciences***Options****Dietetics*****First Year**

		Credits
3150:110	Introduction to General, Organic and Biochemistry I	3
3150:111	Introduction to General, Organic and Biochemistry I, Laboratory	1
3150:112	Introduction to General, Organic and Biochemistry II	3
3150:113	Introduction to General, Organic and Biochemistry II, Laboratory	1
3300:111	English Composition I	4
3300:112	English Composition II	3
3470:260	Basic Statistics	3
3750:100	Introduction to Psychology	3
3850:100	Introduction to Sociology	4
7400:265	Child Development	3
7600:106	Effective Oral Communication	3
	Physical Education/Wellness	1
		32

Second Year

3100:130	Principles of Microbiology	3
3100:200,201	Human Anatomy and Physiology I, Lab	4
3100:202,203	Human Anatomy and Physiology II, Lab	4
3400:210	Humanities in the Western Tradition I	4
6200:201	Accounting Principles I	3
	or	
2420:211	Basic Accounting I	3
	Area Studies/Cultural Diversity Requirement	4
	Humanities Requirement	6
	Electives	4
		32

Family and Child Development**First Year**

3300:111	English Composition I	4
3300:112	English Composition II	3
3750:100	Introduction to Psychology	3
3750:230	Developmental Psychology (Family Development Option only)	4
3850:100	Introduction to Sociology	4
7400:265	Child Development	3
7600:106	Effective Oral Communication	3
	Mathematics Requirement	3
	Physical Education/Wellness	1
	Electives	4
		32

Second Year

3400:210	Humanities in the Western Tradition I	4
7400:270	Theory and Guidance of Play (Child Development Option only)	3
7400:280	Early Childhood Curriculum Methods (Child Development Option only)	3
7750:276	Introduction to Social Welfare (Family Development Option only)	3
	Area Studies/Cultural Diversity Requirement	4

7400: Family and Consumer Sciences*		
Humanities Requirement		6
Natural Science Requirement		8
		31

Food and Environmental Nutrition

First Year

3150:110	Introduction to General, Organic and Biochemistry I	3
3150:111	Introduction to General, Organic and Biochemistry II, Laboratory	1
3150:112	Introduction to General, Organic and Biochemistry II	3
3150:113	Introduction to General, Organic and Biochemistry II, Laboratory	1
3300:111	English Composition I	4
3300:112	English Composition II	3
3470:260	Basic Statistics	3
3750:100	Introduction to Psychology	3
3850:100	Introduction to Sociology	4
7400:133	Nutrition Fundamentals	3
7600:106	Effective Oral Communication	3
	Economics Requirement	3
		34

Second Year

3100:130	Principles of Microbiology	3
3100:200,201	Human Anatomy and Physiology I, Lab	4
3100:202,203	Human Anatomy and Physiology II, Lab	4
3400:210	Humanities in the Western Tradition I	4
6200:201	Accounting Principles I	3
6300:201	Introduction to Entrepreneurship	3
	Area Studies/Cultural Diversity Requirement	4
	Humanities Requirement	6
		31

7600: Communication

First Year

Credits

3300:111	English Composition I	4
3300:112	English Composition II	3
7600:106	Effective Oral Communication	3
7600:102	Survey of Mass Communication	3
7600:115	Survey of Communication Theory	3
7600:200	Careers in Communication	1
	Mathematics Requirement	3
	Physical Education/Wellness	1
	Social Science Requirement	6
	Elective (typing/word processing recommended)	5
		32

Second Year

3400:210	Humanities in the Western Tradition I	4
	Area Studies/Cultural Diversity Requirement	4
	Communication Major Emphasis Courses	6
	Foreign Language Courses	
	or	
	Language Alternative Courses	8
	Humanities Requirement	6
	Natural Science Requirement	8
		36

7750: Social Work

First Year

Credits

7750: Social Work

3300:111 English Composition I	4
3300:112 English Composition II	3
3470:260 Basic Statistics	3
3700:100 Government and Politics in the U.S.	4
3750:100 Introduction to Psychology	3
3850:100 Introduction to Sociology	4
7750:270 Poverty and Minority Issues	3
7750:275 Introduction to Social Work Practice	3
7750:276 Introduction to Social Welfare	3
Economics Requirement	3
Physical Education/Wellness	1
	34

Second Year

3100:103 Natural Science-Biology	4
3400:210 Humanities in the Western Tradition I	4
7600:106 Effective Oral Communication	3
7750:xxx Social Work Requirements	8
Area Studies/Cultural Diversity Requirement	4
Humanities Requirement	6
Natural Science Requirement	4
	33

8200: Nursing (Basic Program)**First Year**

		Credits
3100:200,201	Human Anatomy and Physiology I, Lab	4
3100:202,203	Human Anatomy and Physiology II, Lab	4
3150:110	Introduction to General, Organic and Biochemistry I	3
3150:111	Introduction to General, Organic and Biochemistry I, Laboratory	1
3150:112	Introduction to General, Organic and Biochemistry II	3
3150:113	Introduction to General, Organic and Biochemistry II, Laboratory	1
3300:111	English Composition I	4
3300:112	English Composition II	3
3470:250	Statistics for Everyday Life	3
	or	
3470:260	Basic Statistics	3
3750:100	Introduction to Psychology	3
7600:106	Effective Oral Communication	3
8200:100	Introduction to Nursing	1
		34

Students are eligible to apply to the School of Nursing during spring semester of the first year if they have completed all of the courses listed above with a minimum grade of "C" or higher and have attained a grade point average of 2.75 or higher. If the student is accepted into the school, attendance at the Akron campus is necessary during the second year in required clinical courses. The following list of courses may be taken at Wayne College during the second year by students who do not satisfy the admission requirements.

Second Year

3100:130	Principles of Microbiology	3
3400:210	Humanities in the Western Tradition I	4
3600:120	Introduction to Ethics	3
3750:230	Developmental Psychology	4
3850:100	Introduction to Sociology	4
	or	
3230:150	Human Cultures	3

8200: Nursing (Basic Program)

7400:316	Science of Nutrition	4
	Area Studies/Cultural Diversity Requirement	4
	Humanities Requirement	3
	Physical Education/Wellness	1
		30

**Geophysics majors must take 3650:291 and 292, Elementary Classical Physics I and II during the second year instead of the humanities credits.

Minor Areas of Study

REQUIREMENTS

The University of Akron has approved minor fields of study that may be placed on a student's record when all requirements have been completed.

The following rules apply to all minors:

- The student must complete at least 18 credits. (Note: some minors may require additional credits).
- At least six of the 18 credits must be at the 300/400 level, except where the department does not offer 300/400 level courses.
- A minimum grade-point average of 2.0 in each minor is required.
- A minor may be designated at any time during the student's career up to and including the time the degree clearance is processed.
- A minor will be placed on the student's record only at the time the student receives a baccalaureate degree and only if an application was processed.
- Courses to be applied toward the granting of a minor may not be taken credit/non-credit. A maximum of 6 bypassed credits may be used, but all other credits must be earned.
- The student must earn at least nine credits at The University of Akron in courses approved by the faculty granting the minor. Written permission of the dean and the head of the department which grants the minor is required for an exception.
- Courses required for a minor may carry prerequisites, which must be honored before the student may enroll.

ADVISING

Although not required to do so, students are advised to contact faculty in the department(s) in which they may wish to earn minors early in their undergraduate programs.

PROGRAM REQUIREMENTS

Addiction Services

- Total number of credits required for a minor in Addiction Services: 20
- Required core courses:

	<i>Credits</i>
2260:260 Introduction to Addiction**	3
2260:240 Drug Use and Abuse*	3
2260:267 Addiction Assessment and Treatment Planning	3
2260:261 Addiction Treatment	4
2260:286 Addiction Services Internship	2

- Electives: Select 5 credits from the following:

2260:210 Addiction Education and Prevention*	3
2260:263 Group Principles in Addiction	3
2260:264 Addiction and the Family*	3
2260:265 Women and Addiction*	3
2260:268 Co-Occurring Disorders*	3
2260:269 Criminal Justice and Addiction	3
2260:270 Relapse Prevention*	3
2260:271 Behavioral Addictions	3

Anthropology (Interdisciplinary)

- Required core courses:

3230:150 Human Cultures	3
3230:151 Human Evolution	4
- Six additional credits of Anthropology (3230) or Archaeology courses (3240).
- Six additional credits from the Interdisciplinary Anthropology Program of Study.
- Twenty total credits are required and at least 6 credits must be at the 300/400 level.

* Offered as a Web-based course

** Offered as a Web-based course or in the classroom.

Art

- Foundations curriculum need not be completed.
- Prerequisites must be honored.

Art History

		<i>Credits</i>
7100:100	Survey of Art History I	3
7100:101	Survey of Art History II	3
7100:102	Survey of Art History III	3

- Nine credits from the following list:

7000:401	History of Performance/New Media	3
7100:300	Art Since 1945	3
7100:301	Medieval Art	3
7100:302	Art in Europe 17th and 18th Centuries	3
7100:303	Renaissance Art in Italy	3
7100:306	Renaissance Art in Northern Europe	3
7100:307	History of Graphic Design	3
7100:308	Art of the African Diaspora	3
7100:309	Greek Art	3
7100:355	Contemporary Art Issues	3
7100:370	History of Photography	3
7100:401	ST. History of Art	1-3
7100:402	Museology	3
7100:403	Art and Critical Theory	3
7100:405	History of Art Symposium 3	1-3
7100:407	Methods of Art History	3
7100:413	Survey of Asian Art	3
7100:498	SP: History of Art 3	1-3

Total **18**

Ceramics

7100:254	Introduction to Ceramics	3
7100:353	Throwing	3
7100:454	Advanced Ceramics (to be repeated for a total of 12 credits) or	3
7100: 453	Advanced Throwing 3 and	
7100:454	Advanced Ceramics (to be repeated for a total of 9 credits) or	3
7100: 453	Advanced Throwing (to be repeated for a total of 6 credits) and	3
7100:454	Advanced Ceramics (to be repeated for a total of 6 credits)	3

Total **18**

Computer Imaging

7100:185	Introduction to Computer Graphics or	3
7100:289	Production I	3
7100:280	Digital Imaging	3
7100:383	Multimedia Production	3

- Nine credits from the following:

7100:281	Designing for the Web and Devices I	3
7100:381	Digital Imaging II	3
7100:385	Computer 3-D Modeling and Animation	3
7100:486	Interactive Multimedia Development	3

Total **18**

Drawing

- Student must complete:

7100: 131	Foundation Drawing	3
7100: 233	Foundation Life Drawing	3
7100:231	Intermediate Drawing	3

- And select 3 courses from the following

7100: 283	Drawing Techniques	3
7100: 335	Intermediate Life Drawing	3
7100:450	Advanced Life Drawing	3
7100:489	Special Topics (in Drawing)	3

Total **18**

Illustration

7100:185	Introduction to Computer Graphics or	3
7100:289	Production I	3
7100:283	Drawing Techniques	3
7100:335	Intermediate Life Drawing	3
7100:480	Advanced Graphic Design	3
7100:484	Illustration	3
7100:485	Advanced Illustration (to be repeated)	6

Total **18**

Metalsmithing

- Select from the following:

7100:266	Introduction to Metalsmithing	3
7100:268	Color in Metals	3
7100:366	Metalsmithing II	3
7100:368	Color in Metals II	3
7100:466	Advanced Metalsmithing (may be repeated)	3

Total **18**

Painting

- Requirements:

7100: 243	Introduction to Painting	3
7100: 231	Intermediate Drawing or	3
7100: 246	Introduction to Water-based Media or	3
7100: 335	Intermediate Life Drawing	3
7100: 348	Intermediate Painting (repeat two times)	6

- Select two of the following:

7100: 450	Advanced Life Drawing	3
7100: 455	Advanced Painting	3
7100: 489	Special Topics in Studio Art	3

Total **18**

Photography

- Select from the following:

7100:275	Introduction to Photography	3
7100:276	Introduction to Professional Photography	3
7100:370	History of Photography	3
7100:375	Photography II	3
7100:475	Advanced Photography (may be repeated)	3
7100:477	Advanced Photography: Color	3
7100:479	Professional Photographic Practices	3

Total **18**

Photography for Non-Art Majors

7100:274	Photography I for Non-art majors	3
7100:374	Photography II for Non-art majors	3
7100:474	Advanced Photography for Non-art majors (may be repeated)	3

- Select 3 courses from the following:

7100:370	History of Photography	3
7100:276	Introduction to Professional Photography	3
7100:477	Advanced Photography: Color	3
7100:474	Advanced Photography for Non-art majors (may be repeated)	3

Total **18**

Printmaking

- Prerequisites:

7100:131	Foundation Drawing I	3
7100:144	Foundation 2D Design	3
- Required:

7100:213	Introduction to Printmaking	3
7100:214	Relief/Screenprint	3
7100:216	Intaglio/Lithography	3
7100:317	Print Matrix (may repeat)	3
- Two courses from the following:

7100:317	Print Matrix (may repeat)	3
7100:418	Multiples & Multiplicity (may repeat)	3
7100:419	Special Topics in Print (may repeat)	3
- Two courses must be at the 300- or 400- level.
- A 2.0 grade point average must be maintained.

Total **18**

Professional Photography

Credits

- Required core courses:

7100:185	Introduction to Computer Graphics	3
7100:275	Introduction to Photography	3
7100:276	Introduction to Professional Photography	3
7100:280	Digital Imaging	3
7100:318	Portrait/Fashion Photography	3
7100:320	Illustration Advertising Photography	3
7100:479	Professional Photographic Practices	3

Total **18**

Sculpture

- Select from the following:

7100:222	Introduction to Sculpture	3
7100:322	Sculpture II	3
7100:422	Advanced Sculpture (May be repeated)	3
7100:254	Introduction to Ceramics	3
	or	
7100:266	Introduction to Metalsmithing	3
7100:321	Figurative Sculpture	3
7100:323	Lost Wax Casting	3
7100:223	Sculpture: Stone	3
7100:224	Installation Art	3

Total **18**

Athletic Coaching Education

This minor is only available for students not majoring in a Department of Sport Science and Wellness Education program.

- A total of 18 credits are required for the athletic coaching education minor

Required coursework — 15 credits:		
5550:160	Introduction to Coaching	3
5550:375	Sport Performance Principles	3
5550:409	Sport Behavior	3
5550:410	Sport Sociology	3
5550:453	Principles of Coaching	3

Select 3 credits from the following courses:		
5550:395	Field Experience	1-6
5550:440	Injury Management for Teachers and Coaches	2
5550:480	Special Topics: Physical Education (Approved coaching classes)	1-4

Biology

- Total credits required for a minor in biology: 23-24.

3100:111,2	Principles of Biology I, II	8
3100:211	General Genetics	3
3100:217	General Ecology	3
3100:311	Cell and Molecular Biology	4
	or	
3100:331	Microbiology	4
3100:316	Evolutionary Biology	3
3100:xxx	Any 300/400-level course	—

Business Administration for Non-Business Majors

- Total credits required for a minor in Business Administration: 18
- Required Courses:

		<i>Credits</i>
6140:300	Introduction to Finance	3
6200:201	Accounting Principles I	3
6500:301	Management: Principles and Concepts	3
6600:300	Marketing Principles	3
- Electives: Select 2 courses (6 credits) from the following:

6200:xxx	Any three credit Accountancy course for which the student has the appropriate prerequisites	3
6300:xxx	Any three credit Entrepreneurship course for which the student has the appropriate prerequisites	3
6400:220	The Legal and Social Environment of Business	3
6500:xxx	A 300/400 level course in Management for which the student has the appropriate prerequisites	3
6800:305	International Business	3
- Prerequisites must be honored.
- When an honors section of the core curriculum is available non-business honor students are required to enroll in that section.

Business Management Technology

- Required core courses:

2040:247	Survey of Basic Economics	3
2420:103	Essentials of Management Technology	3
2420:202	Elements of Human Resource Management	3
2420:211	Basic Accounting I	3
2420:280	Essentials of Business Law	3
2420:xxx	Elective	3
2520:101	Essentials of Marketing Technology	3
- Choose elective from the following:

2420:170	Applied Mathematics for Business	3
	or	
2420:212	Basic Accounting II	3
	or	
2420:243	Survey in Finance	3

Business Minor for Engineering Students

- Required courses:

4100:400	Engineering Management and Leadership	3
6200:201	Accounting Principles I	3
6500:301	Management: Principles and Concepts	3
6600:300	Marketing Principles	3
- Two courses must also be taken from the following list:

6200:250	Spreadsheet Modeling & Decision	
6200:260	Micorcomputer Applications for Business	3
6400:220	Legal and Social Environment of Business	3
6400:301	Corporate Finance	3
3250:244	Introduction to Economic Analysis	3
- When an honors section of the core curriculum is available non-business honor students are required to enroll in that section.
- Total credits required for the Business Minor for Engineering: 18

Chemistry

- Total credits required for a minor in chemistry: 19-22.

- Core comprised of the following: Credits

3150:151	Principles of Chemistry I	3
3150:152	Principles of Chemistry I Laboratory	1
3150:153	Principles of Chemistry II	3
3150:263,4	Organic Chemistry Lecture I, II	6

- An additional six credits from 300/400-level chemistry courses. For example, a pre-med, medical technology, or biology student might take 3150:401,2 Biochemistry (three credits each). An engineering or physics major might select 3150:313,4 Physical Chemistry (three credits each). Analytical or instrumental courses might be attractive to students in other fields.
- Chemical engineering majors automatically fulfill the requirements for a minor in chemistry.
- Students who intend to minor in chemistry should seek advice from the Chemistry Department about the 300/400-level courses that would be most relevant to their interests.

Classical Studies

- Total credits required for a minor in classical studies: 18
- At least 6 credits must be at the 300/400 level.

Required core courses:

- Any 2 of the following:

3200:230	Sports and Society in Ancient Greece and Rome	3
3200:220	Introduction to the Ancient World	3
3200:289	Mythology of Ancient Greece	3

- Electives: (12 hours)

3200:361	Literature of Greece	3
3200:362	Literature of Rome	3
3200:363	Women in Ancient Greece and Rome	3
3200:480	Reading and Research in Classical Studies	1-3
3240:100	Introduction to Archaeology	3
3240:313	Archaeology of Greece	3
3240:314	Archaeology of Rome	3
3240:360	Ancient Near Eastern Archaeology	3
3240:400	Archaeological Theory	3
3400:308	Greece	3
3400:317	Roman Republic	3
3400:318	Roman Empire	3
3400:404	Studies in Roman History	3
3510:201	Intermediate Latin	3
3510:202	Intermediate Latin	3
3510:303	Advanced Latin	3
3510:304	Advanced Latin	3
3510:497	Latin Reading And Research	3
3510:498	Latin Reading And Research	3
3600:211	History of Ancient Philosophy	3
3600:411	Plato	3
3600:432	Aristotle	3

Communication

The minors offered in the School of Communication are designed for non-communication majors only.

Interpersonal and Group Communication

- Required: Credits

7600:115	Survey of Communication Theory	3
7600:235	Interpersonal Communication	3
7600:344	Group Decision Making	3
- Select 9 credits from among the following (at least 3 credits must be 300/400 level)

7600:226	Interviewing	3
7600:227	Nonverbal Communication	3
7600:245	Argumentation	3
7600:252	Persuasion	3
7600:325	Intercultural Communication	3
7600:454	Theory of Group Process	3
7600:450	Special Topics	3

(Depends on topic; only with prior approval of School Director)

Mass Communication

- Required

7600:102	Survey of Mass Communication	3
7600:388	Broadcast History	
	or	
7600:400	History of Journalism in America	3
- Electives - 12 credits (at least 3 credits at the 300-400 level) selected from:

7600:270	Voice Training for Media	3
7600:280	Media Production Techniques	3
7600:282	Radio Production	3
7600:283	Studio Production	3
7600:284	Legal Issues in Media	3
7600:287	Radio and TV Writing	3
7600:300	Newswriting	3
7600:301	Advanced Newswriting	3
7600:302	Broadcast Newswriting	3
7600:304	Editing	3
7600:308	Feature Writing	3
7600:368	Basic Audio and Video Editing	3
7600:372	Single Camera Production	3
7600:375	Web Production	3
7600:378	Topics in Media History/Genre	3-9
7600:396	Programming & Audience Analysis	3
7600:408	Women, Minorities and News	3
7600:410	Journalism Management	3
7600:420	Magazine Writing	3
7600:425	Commercial Electronic Publishing	3
7600:462	Advanced Media Writing	3
7600:468	Advanced Audio and Video Editing	3
7600:486	Broadcast Sales and Management	3

Mass Media Production

- Required

7600:280	Media Production Techniques	3
7600:368	Basic Audio and Video Editing	3
7600:372	Single Camera Production	3
- Electives - 9 credits selected from:

7600:228	ZTV	1-8
	and/or	
7600:230	WZIP	1-8
7600:282	Radio Production	3
7600:283	Studio Production	3
7600:284	Legal Issues in Media	3
7600:287	Radio & TV Writing	3
7600:375	Web Production	3
7600:378	Topics in Media History/Genre	3
7600:468	Advanced Audio and Video Editing	3

Media History

- Required *Credits*

7600:102	Survey of Mass Communication	3
7600:388	History of Broadcasting	3
7600:400	History of Journalism in America	3
- Electives - 9 credits selected from the following:

7600:378	Topics in Media History/Genre	3-9
7600:355	Freedom of Speech	3
7600:408	Women, Minorities and News	3
7600:481	Film as Art	3

News

- Required

7600:300	Newswriting	3
7600:301	Advanced Newswriting	3
7600:304	Editing	3
7600:308	Feature Writing	3
- Electives - 6 credits selected from the following:

7600:302	Broadcast Newswriting	3
7600:400	History of Journalism in America	3
7600:408	Women, Minorities and News	3
7600:416	New Media Writing	3
7600:420	Magazine Writing	3
7600:425	Commercial Electronic Publishing	3

Organizational Communication

- Required:

7600:115	Survey of Communication Theory	3
7600:435	Communication in Organizations	3
7600:436	Analyzing Organizational Communication	3
- 9 credits selected from the following:

7600:235	Interpersonal Communication	3
7600:325	Intercultural Communication	3
7600:344	Group Decision Making	3
7600:345	Business and Professional Speaking	3
7600:437	Training Methods in Communication	3
7600:454	Theory of Group Process	3
7600:450	Special Topics	3

(Depends on topic; only with prior approval of School Director)

Public Communication

- Required:

7600:115	Survey of Communication Theory	3
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- Select 15 credits from among the following (at least 6 credits at 300/400 level):

7600:245	Argumentation	3
7600:252	Persuasion	3
7600:345	Business and Professional Speaking	3
7600:346	Advanced Public Speaking	3
7600:355	Freedom of Speech	3
7600:457	Public Speaking in America	3
7600:470	Analysis of Public Discourse	3
7600:471	Theories of Rhetoric	3
7600:475	Political Communication	3
7600:450	Special Topics	3

(Depends on topic; only with prior approval of School Director)

Public Relations

- Required:

7600:115	Survey of Communication Theory	3
7600:406	Contemporary Public Relations	3
- Select 12 credits from among the following:

7600:303	Public Relations Writing	3
7600:309	Public Relations Publications	3
7600:403	Public Relations Strategies	3
7600:404	Public Relations Cases	3
7600:450	Special Topics in Public Relations	3

Community Services Technology

- Required core courses: *Credits*

2040:240	Human Relations	3
2260:100	Introduction to Community Services	3
2260:150	Introduction to Gerontological Services	3
2260:260	Introduction to Addiction	3
2260:240	Drug Use and Abuse	3
2260:278	Techniques of Community Work	4

Computer Forensics

The computer forensics minor provides an educational foundation in both the legal and technical aspects of computer crime investigation. Students explore the criminology of high technology crime, criminal law as it applies to digital evidence, the investigative process, and professional communication. Students will gain hands-on experience with contemporary forensic tools and receive technical instruction in computer hardware, networks, and operating systems. Individuals working in the legal and investigative fields that seek to enhance their technical skills and beginners with a general interest in the subject area are welcome.

- | | | |
|----------|----------------------------------|---|
| 2220:100 | Introduction to Criminal Justice | 3 |
| 2220:280 | Cybercrime | 3 |
| 2440:145 | Operating Systems | 3 |
| 2440:201 | Networking Basics | 3 |
| 2220:281 | Computer Forensic Methods | 3 |
| 2220:286 | Courtroom Communication | 3 |
| 2440:247 | Hardware Support | 3 |

TOTAL: 21 credit hours

- Pre-req for the computer courses is 2440:105 Introduction to Computers and Application Software or a placement test.

Computer Information Systems

- Students must achieve a "C" or better in their technical courses (2440/2600)

Programming Specialist Minor

- Required core courses:

2440:121	Introduction to Logic/Programming	3
2440:140	Internet Tools	3
2440:160	JAVA Programming	3
2440:170	Visual BASIC	3
2440:180	Database Concepts	3
2440:xxx	Computer Information Systems Electives	6
- Electives:

2440:145	Operating Systems	3
2440:210	Client/Server Programming	3
2440:234	Business Programming	3
2440:241	Systems Analysis and Design	3
2440:251	CIS Projects	3
2440:256	C++ Programming	3
2440:290	Special Topics: Computer Information Systems	1-3

Computer Maintenance and Network Technology

Students must pass a departmental exam (CISBR) or successfully complete 2440:105 (as needed as a result of the department placement exam) before enrolling in Computer Information Systems courses.

Students may elect one of two options.

All students must achieve at least a "C" in each course to be eligible for this minor.

	<i>Credits</i>
• Bridge courses:	
2440:105 Introduction to Computers	3
• Required core courses (18 credits):	
2440:145 Operating Systems	3
2440:268 Network Concepts (MS option)	3
2440:201 Networking Basics (CISCO option)	3
or	
2600:240 Microsoft Networking I (MS option)	3
2440:202 Router and Routing Basics (Cisco option)	3
or	
2600:242 Microsoft Networking II (MS option)	3
2440:203 Switching Basics and Wireless (Cisco option)	3
or	
2600:244 Microsoft Networking III (MS option)	3
2440:204 WAN Technologies (Cisco option)	3
2440:247 Hardware Support	3

Computer Science

To qualify for the Computer Science Minor Program, a student must be in good academic standing in the major department, must have completed four credits of mathematics in the Department of Mathematics and must submit to the department chair of Computer Science a written request for admission to the program. The request will outline the student's reasons and goals for enrolling in the program. A minimum grade-point average of 2.00 in the minor is required. The credits earned in the minor program cannot be counted towards the Computer Science Certificate Program.

3450:208 Introduction to Discrete Mathematics	4
3450:210 Calculus with Business Applications	3
or	
3450:221 Analytic Geometry-Calculus I	4
3460:209 Computer Science I	4
3460:210 Computer Science II	4
3460:316 Data Structures	3
Approved 300/400-Level Computer Science Electives	6

Computer Security

The computer security minor provides an educational foundation in the policy, management, and technical aspects of computer and information security. Students explore the criminology of high technology crime, the legal aspects of information security, the investigative process, and basic digital forensic methods. In addition, students will receive technical instruction in computer hardware and networking. Individuals working in security and investigative fields that seek to enhance their technical skills and beginners with a general interest in the subject area are welcome.

2220:101 Introduction to Security Administration Technology	3
2220:234 Computer and Information Security	3
2220:280 Cybercrime	3
2220:281 Computer Forensic Methods	3
2440:201 Networking Basics	3
or	
2600:240 Microsoft Desktop Environment	3
2440:202 Router and Routing Basics	3
or	
2600:242 Microsoft Networking II	3
2440:247 Hardware Support	3

Pre-req for the computer courses is 2440:105 Introduction to Computers and Application Software or a placement test.

Conflict Management

The University 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 undergraduate minor, 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 conflict and violence — from interpersonal to international.

This minor consists of 18 credits, with 6 credits of required coursework, 9 additional credits including at least 6 credits taken at the 300/400 levels, and a 3-credit internship.

	<i>Credits</i>
• Required Core Courses (6 credits):	
Conflict and Mediation Core (3 credits)	
3700:334 Law, Mediation, and Violence	3
Socio-Cultural Core (3 credits, choose one)	
3230:150 Human Cultures	3
3750:340 Social Psychology	3
3850:315 Sociological Social Psychology	3
• Elective Courses (choose 9 credits):	
3230:251 Human Diversity	3
3700:335 Law and Society	3
3700:363 Crime, Punishment, and Politics: A Comparative Perspective	3
3700:481 The Challenges of Police Work	3
3850:320 Social Inequalities	3
3850:340 The Family	3
3850:421 Racial and Ethnic Relations	3
3850:441 Sociology of the Law	3
3850:447 The Sociology of Sex and Gender	3
3850:455 Family Violence	3
7600:227 Nonverbal Communication	3
7600:325 Intercultural Communication	3

Electives must include courses from at least two different departments.

- Internship: (3 credits)

All students will complete a 3-credit internship. (See Political Science or Sociology department guidelines for further information.)

For further information, contact Dr. William Lyons, Jr., Director at (330) 972-5855 or see www.uakron.edu/centers/conflict.

Consumer Marketing

This minor provides the student an opportunity to develop an understanding of the discipline of marketing and its multi-faceted role in business. It also permits students to use electives to build skills specific to marketing management, integrated marketing communications or sales management.

• Required courses — 12 credits	
6600:275 Professional Selling	3
6600:300 Marketing Principles	3
6600:335 Marketing Research	3
6600:355 Buyer Behavior	3
• Elective Courses — 6 credits	
6600:375 Marketing & Sales Analytics	3
6600:432 Integrated Marketing Communications	3
6600:436 Ecommerce	3
6600:438 Media Strategy	3
6600:440 Brand Management	3
6600:460 B2B Marketing	3
6600:480 Sales Management	3

- Prerequisites must be honored.

- When an honors section of the core curriculum is available non-business honor students are required to enroll in that section.

Criminal Justice Technology

Law Enforcement

The Criminal Justice Technology Law Enforcement minor provides an introductory program in police studies for those wishing to minor in the topic.

Core courses:		Credits
2220:100	Introduction to Criminal Justice	3
2220:102	Principles of Criminal Law	3
2220:104	Evidence and Criminal Legal Process	3
2220:105	Introduction to Police Studies	3
2220:251	Criminal Investigation	3
2220:260	Critical Incident Interventions for Criminal Justice	3

Security Administration

The Criminal Justice Technology Security Administration Minor offers an extensive curriculum dealing with policy, management, technology and legal issues in physical, information, personnel and homeland security.

2220:101	Introduction to Security Administration Technology	3
2220:231	Physical Security: Systems, Design, and Control	3
2220:232	Legal Issues in Security Administration	3
2220:233	Security Investigations: Principles and Practice	3
2220:234	Computer and Information Security	3
2220:245	Homeland Security: Principles and Practice	3

Corrections

This minor provides a foundation in correctional administration law, theory, policy, and practice, with a special emphasis in the treatment of addictions. The following courses constitute a minor in Criminal Justice — Corrections and must be completed with a minimum grade point average of 2.0 overall for the minor to be noted on the student's record.

2220:100	Introduction to Criminal Justice	3
2220:103	Introduction to Corrections	3
2220:270	Community Corrections	3
2220:275	Legal Aspects of Corrections	3
2260:255	Effective Workplace Relationships	3
2260:269	Criminal Justice and Addiction	3

Dance

In order to obtain a Minor in Dance, the student must successfully complete a minimum of 20 credits; 12 credits of dance technique and somatics, and 8 credits of dance lecture courses.

- Six credits must come from dance 300-400 level courses
- Dance minors must complete at least one semester of Ballet II and Modern II or higher.

Ballet:

- Choose one to two classes for a minimum of 4 credits*

7900:124	Ballet I	2
7900:125	Ballet II	2
7900:224	Ballet III	3
7900:225	Ballet IV	3
7920:122	Ballet V	4
7920:222	Ballet VI	4
7920:322	Ballet VII	4
7920:422	Ballet VIII	4

Modern:

- Choose one to two classes for a minimum of 4 credits*

7900:119	Modern I	2
7900:120	Modern II	2
7900:219	Modern III	2
7900:220	Modern IV	2
7920:228	Modern V	3
7920:229	Modern VI	3
7920:328	Modern VII	3
7920:329	Modern VIII	3

Jazz and Tap:

Choose one or more classes for a minimum of 2 credits*		Credits
7900:130	Jazz Dance I	2
7900:230	Jazz Dance II	2
7920:351	Jazz dance III	2
7920:451	Jazz Dance IV	2
7900:144	Tap Dance I	2
7900:145	Tap Dance II	2
7920:246	Tap Dance III	2
7920:347	Tap Dance IV	2

Dance Somatics:

Choose one or more classes for a minimum of 1 credit		Credits
7915:101	Dance Somatics: Yoga	1
7915:102	Dance Somatics: Pilates	1
7915:103	Dance Somatics: Alexander Technique	1
7915:104	Dance Somatics: Gyrokinesis	1

World Dance and Ballroom:

Choose one or more classes for a minimum of 1 credit		Credits
7915:111	Topics in World Dance	1
7900:150	Ballroom Dance I	1
Dance Lecture classes — 8 credits		
Choose either for a total of 2-3 credits		
7900:115	Dance as an Art Form	2
or		
7900:200	Viewing Dance **	3
Choose from the following (or others as approved by advisor) for a minimum of 6 credits		
7920:316	Choreography I	2
7920:321	Rhythmic Analysis for Dance	2
7920:361	Learning Theory for Dance	2
7920:432	History of Ballet	2
7920:433	Dance history: 20th Century	2
Total		20-21

Database Marketing

Database Marketing involves the transformation of raw data into useful information. This information is converted into applied knowledge that meets the direct marketing needs of various business operations. As the name implies, marketing strategies are formulated and implemented based on the information gleaned from databases.

A total of 18 credits are required for this minor, five required courses and one elective. To earn the minor, the student must complete at least 9 credit hours of 6600 courses in addition to the requirements for any other major, minor, or certificate that has been earned.

- Required: Complete all courses (15 credit hours)**

6500: 324	Data Management for Information Systems	3
6500: 425	Decision Support with Data Warehousing/Data Mining 3	3
6600: 335	Marketing Research	3
6600: 375	Marketing & Sales Analytics	3
6600: 436	Ecommerce	3
- Elective: Complete one course (3 credit hours)**

6600: 460	B2B Marketing	3
6600: 432	Integrated Marketing Communications	3
6600: 438	Media Strategy	3
- Prerequisites must be honored.
- When an honors section of the core curriculum is available non-business honor students are required to enroll in that section.

* See school director for placement

** This course does not meet the general education humanities requirement for dance minors or dance majors.

* See school director for placement

** This course does not meet the general education humanities requirement for dance minors or dance majors.

Economics

- One of the following:

3250:200,201	Principles of Economics	6
3250:244	Introduction to Economics Analysis	3
- One of the following:

3250:400	Intermediate Macroeconomics	3
3250:410	Intermediate Microeconomics	3
- Electives in Economics 9-12
- All students are encouraged to consult with the Undergraduate Student Adviser in the Economics Department about the best choice of coursework. Students are advised to consider taking both 3250:400 Intermediate Macroeconomics and 3250:410 Intermediate Microeconomics. Check bulletin listings or call the department about special topics courses (3250:440) offered each semester.

Labor Economics

- Required:

3250:410	Intermediate Microeconomics	3
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 - One of the following:

3250:200,201	Principles of Economics	6
3250:244	Introduction to Economic Analysis	3
 - Choose at least two of the following:

3250:330	Labor Problems	3
3250:333	Labor Economics	3
3250:430	Labor Market and Social Policy	3
3250:432	The Economics and Practice of Collective Bargaining	3
 - Electives in Economics (3-6)
- NOTE:** All students are encouraged to consult with the Undergraduate Student Adviser in the Economics Department about the best choices of coursework.

Emergency Management

The discipline of emergency management continues to evolve, becoming more complex. There is a demand for well-educated individuals in both the private and public sectors.

This minor allows students in other disciplines to incorporate an emergency management background with their major degree program. Some of the disciplines that complement a minor in Emergency Management include communications, computer information sciences, political science, geography, public health, sociology, and business. The courses offered will provide Emergency Management foundations useful in many careers and disciplines.

- Completion of 18 hours of Emergency Management Classes, as follows:

Required Classes

2235:305	Principles of Emergency Management	3
2235:350	Emergency Response, Preparedness, and Planning	3
2235:370	Hazard Processes for Emergency Management	3
2235:xxx	Emergency Management Electives	9

Electives

2235:320	Emergency Management Business	3
2235:355	Emergency Management Research Methods and Applications	3
2235:360	Introduction to Terrorism	3
2235:380	Disaster Victims: Casualties and Recoveries	3
2235:385	Disasters in Film and Media	3
2235:405	Hazard Prevention and Mitigation	3
2235:410	Disaster Relief and Recovery	3
2235:490	Current Topics in Emergency Management	3

English

(Note: English courses 111, 112, 250, 251, 252 and 281 are not accepted for any minors)

English

Any 18 hours of courses in the English Department with at least 6 of those hours at the 300/400 level.

African American Literature and Language

- Any 18 hours of African American literature and language courses.
- Students may choose from courses such as:

3300:350	Black American Literature	3
3300:389	African American Novel	3
3300:389	African American Drama	3
3300:489	Harlem Renaissance	3
3300:489	Toni Morrison	3
3300:489	African American Poetry	3
3300:489	Sociolinguistics	3
3300:471	U.S. Dialects	3
3300:474	African American English	3

Professional Writing

- Required:

3300:390,391	Professional Writing I, II (Do not have to be taken in sequence)	6
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- One from the following:

3300:376	Legal Writing	3
3300:479	Management Reports	3
3300:489	Science Writing	3
- One departmental linguistics or language course.
- Two additional courses from any of the literature, language or writing offerings in the department.

Creative Writing

- Two introductory courses in creative writing from the following:

3300:277	Introduction to Poetry Writing	3
3300:278	Introduction to Fiction Writing	3
3300:279	Introduction to Script Writing	3
- One advanced course in creative writing from the following:

3300:377	Advanced Poetry Writing	3
3300:378	Advanced Fiction Writing	3
3300:379	Advanced Script Writing	3
- One literature course primarily concerned with modern work.
- Two additional courses from any of the literature or language offerings of the department, which may include a second advanced course in creative writing.

Popular Literature and Film

This minor enables students to understand how mass-produced, popular literature and film reveal underlying cultural assumptions about authority, family responsibility, and gender roles held by the mainstream audience.

- 12 hours of courses in popular literature or film at the 300/400 level in the Department of English.
- 6 hours of courses in any literature or film topics at any level in the Department of English.
- Students may choose from courses such as

3300:283	Film Appreciation	3
3300:380	Film Criticism	3
3300:389	Popular Culture	3
3300:389	Stephen King	3
3300:389	Detective Fiction	3
3300:399	Gothic Imagination	3
3300:440	Women and Film	3
3300:460	Film and Literature	3
3300:484	Fantasy	3
3300:485	Science Fiction	3
3300:489	Contemporary Women Gothic Writers	3

NOTE: The following courses taken to fulfill specific requirements in the English Major cannot also be used to fulfill the 18 hours requirement in this minor: 3300:300 Critical Reading and Writing; 3300:301 English Literature I; 3300:315 Shakespeare: Early; 3300:316 Shakespeare: Mature; 3300:341 American Literature I; one course in world or multicultural literature.

Entrepreneurship

All students at the University can earn a Minor in Entrepreneurship where they will learn skills related to creativity, innovation, and entrepreneurial activity. This applied program focuses on the individual needs of the student whether it is creating a new enterprise, buying or growing an existing enterprise, franchising, family business, and corporate or social entrepreneurship. Numerous enterprises have been created and built through this nationally recognized program.

- Required Courses (12 credit hours):

	<i>Credits</i>
6300:201 Introduction to Entrepreneurship	3
6300:301 New Venture Creation	3
6600:300 Marketing Principles	3
6140:300 Introduction to Finance	3
or	
6400:301 Corporate Finance	3

- Electives (choose 6 credit hours):

6100:495 Internship in Business	3
6100:499 Independent Study in Business	3
6200:301 Cost Management and Control	3
6200:430 Contemporary Federal Taxation	3
6200:431 Business Entity Taxation	3
6200:440 Assurance Services and Professional Responsibilities	3
6200:460 Advanced Managerial Accounting	3
6300:360 Entrepreneurial Field Project	3
6400:343 Investments	3
6400:390 Real Estate Principles: A Value Approach	3
6400:403 Real Estate Finance	3
6400:415 Risk Management & Insurance	3
6400:473 Financial Statement Analysis	3
6500:310 Business Information Systems	3
6500:333 Supply Chain and Operations Analysis	3
6500:334 Service Operations Management	3
6500:341 Human Resource Management	3
6500:435 Quality Management and Control	3
6500:457 International Management	3
6600:432 Integrated Marketing Communication	3
6600:275 Professional Selling	3
6600:440 Brand Management	3
6600:436 eCommerce	3
6600:475 Business Negotiations	3
6800:421 International Business Practices	3

- Prerequisites must be honored.

- When an honors section of the core curriculum is available non-business honor students are required to enroll in that section.

Family and Consumer Sciences

Fashion

7400:139 The Fashion and Furnishings Industries	3
7400:219 Dress and Culture	3
7400:225 Textiles	3
7400:352 Strategic Merchandise Planning	3
or	
7400:226 Textile Evaluation	3
7400:438 History of Fashion	3
7400:439 Fashion Analysis	3

Family Development

(Prerequisites must be honored.)

7400:201 Courtship, Marriage and the Family	3
7400:265 Child Development	3

The remaining 12 credits may be selected from the following (6 credits must be at 300/400 level):

7400:255 Fatherhood: The Parent Role (online)	3
7400:360 Parent-Child Relations* (online)	3
7400:362 Family Life Management	3
7400:401 American Families in Poverty	3
7400:404 Middle Childhood and Adolescence*	3
7400:440 Family Crisis	3
7400:441 Family Relationships in Middle and Later Years	3
7400:442 Human Sexuality*	3
7400:446 Culture, Ethnicity and the Family	3
7400:496 Parent Education*	3

* See school director for level placement

Child Development

(Prerequisites must be honored.)

	<i>Credits</i>
7400:201 Courtship, Marriage and the Family	3
7400:265 Child Development	3

The remaining 12 credits may be selected from the following

(6 credits must be at 300/400 level):

7400:132 Early Childhood Nutrition	3
7400:255 Fatherhood: The Parental Role (online)	3
7400:270 Theory and Guidance of Play	3
7400:280 Early Childhood Curriculum Methods	3
7400:360 Parent-Child Relations* (online)	3
7400:401 American Families in Poverty	3
7400:404 Middle Childhood and Adolescence*	3
7400:446 Culture, Ethnicity and the Family	3
7400:460 Organization and Supervision of Child-Care Centers	3
7400:496 Parent Education*	3

Consumer Services

(Prerequisites must be honored.)

7400:300 Legal Environment of Families	3
7400:301 Consumer Education	3
7400:303 Children as Consumers	3
7400:362 Family Life Management	3
7400:401 American Families in Poverty	3
7400:406 Family Financial Management	3

Finance for Business Majors

The Finance Minor for Business Majors provides an opportunity to earn a recognized credential in Finance while completing a major in another department of the College of Business Administration.

- Required Courses (9 credits)

6400:200 Foundations in Personal Finance	3
6400:338 Financial Markets and Institutions	3
6400:343 Investments	3

- And three of the following courses (9 credits):

6100:495 Internship in Finance	3
6200:430 Contemporary Federal Taxation	3
6400:323 International Business Law	3
6400:389 Advanced Financial Analytics	3
6400:390 Real Estate Principles: A Value Approach	3
6400:402 Income Property Appraisal	3
6400:403 Real Estate Finance	3
6400:415 Risk Management: Life and Health Insurance	3
6400:417 Retirement Planning	3
6400:424 Legal Concepts of Real Estate Law	3
6400:436 Commercial Bank Management	3
6400:447 Security and Portfolio Analysis	3
6400:448 Advanced Portfolio Management	3
6400:473 Financial Statement Analysis	3
6400:478 Treasury Management	3
6400:481 International Business Finance	3
6400:490 Selected Topics in Finance	3

- Prerequisites must be honored.

- When an honors section of the core curriculum is available non-business honor students are required to enroll in that section.

* See school director for level placement

Financial Planning

The 24-credit minor in Financial Planning will permit students to acquire the educational foundation for a career in financial planning and will qualify them to sit for the Certified Financial Planner Certification Examination.

		<i>Credits</i>
6200:410	Taxation for Financial Planning	3
6200:430	Contemporary Federal Taxation	3
6400:200	Foundations in Personal Finance	3
6400:301	Corporate Finance (business students)	3
	or	
6400:310	Corporate Financial Management (finance majors)	3
	or	
6140:300	Introduction to Finance (non-business students only)	3
6400:343	Investments	3
6400:415	Risk Management: Life and Health Insurance	3
6400:417	Retirement Planning	3
6400:432	Seminar in Personal Financial Planning	3

- Prerequisites must be honored.
- When an honors section of the core curriculum is available non-business honor students are required to enroll in that section.

Financial Services for Non-Business Majors

The professional opportunities in the financial services areas of banking, insurance, real estate, and financial planning are expanding rapidly. This program provides the non-business major an opportunity to develop career-focused skills in the financial services area.

• Required (9 credits)		
6400:200	Foundations in Personal Finance	3
	or	
6140:131	Personal Finance	3
6140:341	Contemporary Investments	3
6140:300	Introduction to Finance	3
• Electives (9 credits)		
6200:410	Taxation for Financial Planning	3
6200:430	Contemporary Federal Taxation	3
6400:338	Financial Markets and Institutions	3
6400:389	Advanced Financial Analytics	3
6400:390	Real Estate Principles: A Value Approach	3
6400:402	Income Property Appraisal	3
6400:403	Real Estate Finance	3
6400:415	Risk Management: Life and Health Insurance	3
6400:417	Retirement Planning	3
6400:424	Legal Concepts of Real Estate Law	3
6400:432	Seminar in Financial Planning	3
6400:436	Commercial Bank Management	3
6400:448	Advanced Portfolio Management	3
6400:478	Treasury Management	3
6600:275	Professional Selling	3

- Prerequisites must be honored.
- When an honors section of the core curriculum is available non-business honor students are required to enroll in that section.

Fire Protection

2230:100	Introduction to Fire Protection	4
2230:102	Fire Safety in Building Design and Construction	3
2230:104	Fire Investigation Methods	4
2230:204	Fire and Life Safety Education	3
2230:205	Fire Detection and Suppression Systems	3

Forensic Psychology

The Forensic Psychology Minor provides an educational foundation in the application of psychological theory and methods in criminal justice.

		<i>Credits</i>
2220:100	Introduction to Criminal Justice	3
3750:100	Introduction to Psychology	3
3750:110	Quantitative Methods	4
3750:410	Psychological Tests and Measurements	4
2220:287	The Legal System and Psychology	3
2220:286	Courtroom Communication	3
One Required Elective from the following list:		
3750:420	Abnormal Psychology	4
3750:430	Psychological Disorders of Children	4
3750:320	Biopsychology	4
TOTAL:		24

Forensic Studies

The forensic studies minor is designed for individuals interested in the application of scientific methods to the criminal legal process. The minor provides the student with a foundation in physical and digital forensic methods, the investigative process, professional communication, the law of evidence, and the opportunity to explore a forensic discipline of their own choosing.; The minor is appropriate for students majoring in a degree in any of the disciplines that currently have a forensic specialization such as chemistry, biology, nursing, computer science, or accounting. Individuals working in the legal and investigative fields that seek to enhance their scientific reasoning skills and beginners with a general interest in the subject area are welcome.

2220:100	Introduction to Criminal Justice	3
2220:104	Evidence & Criminal Legal Process	3
2220:251	Criminal Investigation	3
2220:253	Basic Forensic Methods	3
2220:281	Computer Forensic Methods	3
2220:286	Courtroom Communication	3
xxxx:xxx	One approved elective in an area of specialization (ex. forensic accounting, forensic nursing, etc.)	3

Geography and Planning

Geography — 18 credits

3350:250	World Regional Geography	3
3350:305	Maps and Map Reading	3
3350:310	Physical and Environmental Geography	3
3350:320	Economic Geography	3

- The remaining six credits are to be selected from any Geography and Planning courses.

Urban and Regional Planning

- Planning requirements — 6 credits:

3350:405	Geographic Information Systems	3
3350:433	Practical Approaches to Planning	3

- Planning electives — 9 credits:

3350:415	Environmental Planning	3
3350:422	Transportation Systems Planning	3
3350:432	Land Use Planning Law	3
3350:437	Planning Analysis and Projection Methods	3
3350:438	Land Use Planning Methods	3
3350:439	History of Urban Design and Planning	3
3350:450	Development Planning	3

- Geotechniques electives — 3 credits:

3350:440	Cartography	3
3350:447	Remote Sensing	3
3350:483	Spatial Analysis	3
3350:496	Field Research Methods	3

Geographic Information Science and Cartography

• Geotechniques requirements — 9 credits:			<i>Credits</i>
3350:405	Geographic Information Systems	3	
3350:440	Cartography	3	
3350:447	Remote Sensing	3	
• Geotechniques electives — 9 credits:			
3350:407	Advanced Geographic Information Systems	3	
3350:441	Global Positioning Systems (GPS)	1	
3350:442	Cartographic Theory and Design	3	
3350:444	Applications in Cartography and Geographic Information Systems	3	
3350:445	GIS Database Design	3	
3350:446	GIS Programming and Customization	3	
3350:449	Advanced Remote Sensing	3	
3350:481	Research Methods in Geography and Planning	3	
3350:483	Spatial Analysis	3	
3350:496	Field Research Methods	3	

Geology and Environmental Science

- Minimum of 20 credits of departmental courses; 17 of which must be in courses having a laboratory.
- At least six credits must be at the 300/400 level.
- Students considering a minor should consult with the Director of Undergraduate Studies in the Geology and Environmental Science Department.

History

- Ten of the 18 credits must be at the upper-division level (300/400). A minimum of 3 credits in each of the following three areas of course offerings is required: 1) United States; 2) Europe; and 3) Ancient/Non-Western/Cross-Cultural.
- With the approval of the History Department undergraduate adviser, a student may apply 3 credits of course-work in a related discipline (a cognate course) toward the fulfillment of the History minor.
- Courses in World Civilizations and Humanities in the Western Tradition may not be used to meet requirements for the minor in History.

Hospitality Management

Restaurant Management

2280:101	Introduction to Hospitality	3
2280:120	Safety and Sanitation	2
2280:121	Fundamentals of Food Preparation I	4
2280:160	Wine and Beverage Service	3
2280:232	Dining Room Service and Training	3
2280:245	Menu, Purchasing and Cost Control	4

Culinary Arts

2280:101	Introduction to Hospitality	3
2280:120	Safety and Sanitation	2
2280:121	Fundamentals of Food Preparation I	4
2280:122	Fundamentals of Food Preparation II	4
2280:245	Menu, Purchasing and Cost Control	3
2280:261	Baking and Classical Desserts	3

Hotel/Lodging Management

2280:101	Introduction to Hospitality	3
2280:120	Safety and Sanitation	2
2280:240	Supervision in the Hospitality Industry	3
2280:250	Front Office Operations	3
2280:268	Revenue Centers	3
2280:278	Hospitality Industry Marketing	3
2280:280	Special Events Management	3

International Business

This minor provides students with a basic understanding of international business and its environments.

• Required: Complete all courses - 12 credits			<i>Credits</i>
6400:438	International Banking	3	
6500:433	Supply Chain Logistics Planning	3	
6600:300	Marketing Principles	3	
6800:305	International Business	3	
• Electives: Complete two (2) courses - 6-7 credits			
3250:461	Principles of International Economics	3	
3700:300	Comparative Politics	4	
3700:414	Wealth and Power Among Nations	3	
6100:495	Internship in Business	3	
6400:323	International Business Law	3	
6400:481	International Business Finance	3	
6500:457	International Management	3	
6800:421	International Business Practices	3	
6800:496	Special Topics in International Business	3	
• Prerequisites must be honored.			

Management

Human Resource Management

This minor provides students with a basic understanding of Human Resource Management functions.

6500:301	Management: Principles and Concepts	3
6500:310	Business Information Systems	3
6500:341	Human Resource Management	3
• Select three of the following:		
6500:302	Organizational Behavior and Leadership Skills	3
6500:342	Labor Relations	3
6500:442	Compensation Management	3
6500:443	Human Resources Selection and Staffing	3
6500:457	International Management	3
• Prerequisites must be honored.		
• When an honors section of the core curriculum is available non-business honor students are required to enroll in that section.		

Management Information Systems

This minor provides students with a basic understanding of business systems analysis and design.

6500:301	Management: Principles and Concepts	3
6500:310	Business Information Systems	3
6500:324	Data Management for Information Systems	3
6500:325	Analysis, Design, and Development of Information Systems	3
• Select two of the following for which you have the prerequisites:		
6200:250	Spreadsheet Modeling & Decision Analysis	3
6500:315	Applications Development for Business Processes	3
6500:420	Management of Data Networks	3
6500:425	Decision Support with Data Warehousing and Data Mining	3
• Prerequisites must be honored.		
• When an honors section of the core curriculum is available non-business honor students are required to enroll in that section.		

Supply Chain/Operations Management

This minor provides students with a basic understanding of supply chain management components and functions.

		<i>Credits</i>
6500:301	Management: Principles and Concepts	3
6500:304	Business Statistics	3
6500:330	Principles of Supply Chain and Operations Management	3
6500:390	Supply Chain Modeling and Decision Making	3
6500:433	Supply Chain Logistics Planning	3
6500:476	Supply Chain Sourcing	3

- Prerequisites must be honored.
- When an honors section of the core curriculum is available non-business honor students are required to enroll in that section

Marketing and Sales Technology

2520:101	Essentials of Marketing	3
2520:202	Retailing Fundamentals	3
2520:203	Principles of Advertising	3
2520:204	Services Marketing	3
2520:206	Retail Promotion and Advertising or	3
2520:221	Advertising Campaign	3
2520:212	Principles of Sales	3
2520:254	Sales Management Technology	3

Mathematics/Applied Mathematics

- Total credits required — 24
- | | | |
|--------------|---------------------------------------|----|
| 3450:221,2,3 | Analytic Geometry-Calculus I, II, III | 12 |
| 3450:312 | Linear Algebra
or | 3 |
| 3450:438 | Advanced Engineering Mathematics I | 3 |
- Approved 300/400-level mathematical sciences electives (at least six credits in 3450 courses) 9

Military Studies: Military Science

In addition to earning a minor in Military Science, Army ROTC classes and leadership training will help students sharpen their written and oral briefing skills, as well as give them the tools to help them succeed in school and in their future careers. We emphasize the practical application of leadership skills through classroom, lab and adventure training that will improve student self-confidence and management abilities. Students can earn this minor even though they are not part of the Army ROTC program; however, being in Army ROTC entitles students to participate in the more advanced leadership training opportunities, apply for tuition and room and board scholarships, and opens the door to an unparalleled opportunity to serve your country in the most respected institution in the nation – America's military.

The minor consists of 18 credits earned from the core Military Science curriculum. 12 credits must be taken at the 300/400 level. With the approval of the Professor of Military Science, substitution of other military-related coursework/credit may be made for up to 6 credits (by exception). This minor may only be awarded at the time a student receives a baccalaureate degree.

1100:205	Leadership Principles and Practices	3
1600:100	Leadership and Personal Development	2
1600:101	Introduction to Tactical Leadership	2
1600:200	Innovative Team Leadership	2
1600:201	Foundations of Tactical Leadership	2
1600:300	Adaptive Team Leadership	3
1600:301	Leadership Under Fire	3
1600:400	Developing Adaptive Leaders	3
1600:401	Leadership in a Complex World	3
1600:490	Special Topics in Military Science	1-3

Modern Languages

3501:Arabic

A minimum of 20 credits is required, of which 12 credits must be at the 300-level or above. No more than 10 transfer credits may be counted toward the minor.

3502:Chinese

A minimum of 20 credits is required, of which 12 credits must be at the 300-level or above. No more than 10 transfer credits may be counted toward the minor.

French (3520) and Spanish (3580):

A minimum of 18 credits is required, of which 12 credits must be at the 300-level or above. No more than 9 transfer credits may be counted toward the minor.

Music

Jazz Studies

		<i>Credits</i>
7500:210	Jazz Improvisation I	2
7500:211	Jazz Improvisation II	2
7500:212	Music Industry Survey	2
7500:307	Technique of Jazz Ensemble Performance and Direction	2
7500:308	History and Literature of Jazz	3
7500:497	Independent Study in Music	2
7510:115	Jazz Ensemble	4
7520:xxx	Applied Jazz Study	8

Music

7500:121	Theory and Musicianship I	4
7500:122	Theory and Musicianship II	4
7500:351	Music History I or	3
7500:352	Music History II	3
7500:xxx	Music Elective (Selected from any 7500 course at 300 or 400 level)	2
7510:xxx	Music Organization (four semesters in a major conducted ensemble)	4
7520:xxx	Applied Music	8

(This eight-credit requirement must be satisfied in four separate semesters. In order to complete the Minor in Music, the student must successfully jury to the 200 level.)

New Media

Any courses that count toward the student's major may not be counted toward this minor if the student is a Communication Major.

- Required Courses (9 credits, College of Creative and Professional Arts)

7000:100	Introduction to New Media	3
7000:300	New Media 2: Creative Practices	3
7000:400	New Media 3: Creative Projects	3

- Elective Courses (9 credits)

Art History

7000:401	History of Performance/New Media	3
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Foundation

7100:144	Foundation 2-D Design	3
7100:145	Foundation 3-D Design	3

Graphic Design

7100:185	Introduction to Computer Graphics	3
7100:383	Multimedia Production	3

Sculpture

7100:222	Introduction to Sculpture	3
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Drawing

7100:231	Drawing II	3
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Photography

7100:274	Photo I	3
7100:275	Introduction to Photography	3
7100:276	Introduction to Professional Photography	3
7100:318	Portrait Fashion Photography	3
7100:320	Illustration Advertising Photography	3
7100:374	Photo II	3
7100:375	Photography II	3
7100:474	Advanced Photography	3
7100:475	Advanced Photography	3

Digital Imaging

7100:280	Digital Imaging	3
7100:381	Digital Imaging II	3

Communication

7600:280	Media Production Techniques	3
7600:283	Studio Production	3
7600:284	Legal Issues in Media	3
7600:368	Basic Audio & Video Editing	3
7600:372	Single Camera Production	3
7600:375	Web Production	3
7600:416	New Media Writing	3
7600:417	New Media Production	3
7600:425	Commercial Electronic Publishing	3

Music

7500:453	Music Software Survey and Use	2
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Dance/Theatre

7800:274	Digital Technology for Theatre	3
7800:262	Stage Makeup	3
7800:306	Stage Costume Design	3
7800:336	Scenic Design	3
7800:355	Stage Lighting Design	3
7920:274	Digital Technology for Dance	3

Computer Science

3460:101	Essentials of Computer Science	3
3460:307	Internet Systems Programming	3
3460:457	Computer Graphics	3
3460:489	Topics in Computer Science: Human-Computer Interaction	3

Special Topics / Independent Study

The following Special Topics/Independent Study classes may be used as electives with an appropriate new media topic and permission of the new media faculty advisor.

7100:489	Special Topics in Studio Art	3
7500:497	Independent Study in Music	1-2
7600:450	Special Topics in Communication	3
7800:403	Special Topics in Theatre Arts	1-4
7900:403	Special Topics in Dance	1-4
3460:489	Topics in Computer Science	1-4
3460:498	Individual Study in Computer Science	1-4

Total Credits (18)

Office Administration

The following courses must be completed with a minimum grade point average of 2.0 overall for the minor to be earned.

General Secretarial - 18 credits

2440:105	Introduction to Computers & Application Software	3
2540:121	Introduction to Office Procedures	3
2540:129	Information/Records Management	3
2540:151	Intermediate Word Processing	3
2540:253	Advanced Word Processing	3
2540:281	Editing/Proofreading/Transcription	3

Word Processing - 19 credits

2440:105	Introduction to Computers & Application Software	3
2540:151	Intermediate Word Processing	3
2540:253	Advanced Word Processing	3
2540:270	Business Software Applications	4
2540:271	Desktop Publishing	3
2540:281	Editing/Proofreading/Transcription	3

Paralegal Studies

The Paralegal Studies Minor provides the student with an opportunity to develop an understanding of, and the role of non-attorneys in, the legal field. The minor requires 12 credit hours of core classes and allows the student to select 6 hours of elective, 3 hours of which must be at the 200 level.

		Credits
2290:101	Introduction to Paralegal Studies	3
2290:104	Basic Legal Research and Writing	3
2290:110	Tort Law	3
2290:214	Civil Procedures	3
2290:xxx	Electives (at least three hours to be completed at the 200 level)	6

Philosophy

General Philosophy

A total of 18 credits in philosophy including:

- At least three credits at the introductory level:

3600:101	Introduction to Philosophy	3
	or	
3600:120	Introduction to Ethics	3
	or	
3600:170	Introduction to Logic	3

- At least six credits at the 300/400 level:

- The remaining nine credits are to be selected from any philosophy offerings.

Bioethics

A total of 18 credits including:

- Required: 12 credits of Philosophy

3600:120	Introduction to Ethics*	3
3600:361	Biomedical Ethics	3
	and TWO of the following:	
3600:323	Advanced Topics in Ethics	3
3600:365	Environmental Ethics	3
3600:461	Neuroethics	3
3600:464	Philosophy of Science	3
3600:480	Seminar (on Bioethics topic)	3

- Electives: 6 credits from the following:

1880:310	Medicine and the Humanities	3
3230:457	Medical Anthropology	3
3600:323	Advanced Topics in Ethics	3
3600:365	Environmental Ethics	3
3600:392	Internship in Philosophy (in Bioethics)	1-3
3600:461	Neuroethics	3
3600:464	Philosophy of Science	3
3600:480	Seminar (on a Bioethics topic)	3
3750:320	Biopsychology	4
3750:335	Dynamics of Personality	4
3750:340	Social Psychology	4
3750:420	Abnormal Psychology	4
3750:430	Psychological Disorders of Children	4
3850:342	Sociology of Health and Illness	3
3850:450	Sociology of Mental Illness	3
6500:480	Introduction to Health-Care Management	3
7400:442	Human Sexuality	3
7400:451	Child in the Hospital	4
7750:456	Social Work in Health Services	3
8200:217	Pathophysiology for Nurses	3
8200:445	Nursing of Communities	3

* Can also be used for General Education credit.

NOTE: Cannot overlap more than 6 credits if obtaining both a Philosophy major and a Philosophy minor or if obtaining two Philosophy minors.

Environmental Ethics Minor#

A total of 18 credits including:

• Required: 12 credits of Philosophy

3600:120	Introduction to Ethics*	3
3600:365	Environmental Ethics	3
and TWO of the following:		
3600:323	Advanced Topics in Ethics	3
3600:324	Social and Political Philosophy	3
3600:361	Biomedical Ethics	3
3600:464	Philosophy of Science	3
3600:480	Seminar (on environmental or animal ethics topics)	3

• Electives: 6 credits from the following:

3100:217	General Ecology	3
3100:418	Field Ecology	4
3100:421	Tropical Field Biology	4
3100:422	Conservation Biology	3
3100:423	Population Biology	3
3100:427	Freshwater Ecology	4
3100:430	Community/Ecosystem Ecology	4
3100:444	Field Marine Phycology	3
3250:385	Economics of Natural Resources & Environment	3
3300:456	Thoreau, Emerson, & Their Circle	3
3350:310	Physical & Environmental Geography	3
3350:314	Climatology	3
3350:351	Ohio: Environment and Society	3
3350:415	Environmental Planning	3
3350:495	Soil and Water Field Studies	3
3370:200	Environmental Geology*	3
3370:201	Exercises in Environmental Geology I*	1
3370:203	Exercises in Environmental Geology II*	1
3370:211	Introduction to Environmental Science	3
3370:371	Oceanography	4
3370:451	Field/Lab Studies in Environmental Science	3
3370:463	Environmental Micropaleontology	3
3370:465	Geomicrobiology	3
3370:474	Groundwater Hydrology	3
3370:480	Seminar in Environmental Studies	2
3400:471	American Environmental History	3
3850:321	Population	3
4100:203	Environmental Science & Engineering	3
4200:463	Pollution Control	3
4300:321	Intro to Environmental Engineering	3
4300:323	Water Supply and Pollution Control	3
4300:426	Environmental Engineering Design	3
4300:427	Water Quality Modeling and Management	3
5570:400	Environmental Aspects of Health	3

Philosophy of Religions Minor#

A total of 18 credits including:

• Required: 12 credits of Philosophy:

3600:331	Philosophy of Religion	3
3600:340	Eastern Philosophy	3
and TWO of the following:		
3600:312	History of Medieval Philosophy	3
3600:313	History of Modern Philosophy	3
3600:414	Aquinas	3
3600:415	Augustine	3
3600:480	Seminar (on religious topic)	3

• Electives: 6 credits from the following:

3200:220*	Introduction to the Ancient World	3
3200:289*	Mythology of Ancient Greece	3
3230:357	Magic, Myth and Religion	3
3300:360	The Old Testament as Literature	3
3300:361	The New Testament and Apocrypha as Literature	3
3400:320	Medieval Europe 1200-1500	3
3400:321	Europe: Renaissance to Religious Wars, 1350-1610	3
3400:322	Europe: Absolutism to Revolution, 1610-1789	3
3400:340	ST in History (on religious topic)	3
3400:341	Islamic Fundamentalism & Revolution	3
3400:342	The Crusades thru Arab Eyes	3
3400:425	The Reformation	3
3600:211	History of Ancient Philosophy	3

* Can also be used for General Education credit.

NOTE: Cannot overlap more than 6 credits if obtaining both a Philosophy major and a Philosophy minor or if obtaining two Philosophy minors.

Credits

3600:312	History of Medieval Philosophy	3
3600:313	History of Modern Philosophy	3
3600:392	Internship in Philosophy (on religious topic)	1-3
3600:414	Aquinas	3
3600:415	Augustine	3
3600:471	Metaphysics	3
3600:480	Seminar (on religious topic)	3
	e.g. Evolutionary Ethics & God after Darwin Problem of Evil	
3850:365	ST in Sociology (on religious topic)	1-3

Philosophy of Science Minor#

A total of 18 credits including:

• Required: 12 credits of Philosophy

3600:170	Introduction to Logic*	3
3600:464	Philosophy of Science	3
and TWO of the following:		
3600:125	Theory and Evidence*	3
3600:323	Advanced Topics in Ethics (on science topic)	3
3600:333	Philosophy of Science and Religion	3
3600:361	Biomedical Ethics	3
3600:371	Philosophy of Mind	3
3600:418	20th Century Analytic Philosophy	3
3600:461	Neuroethics	3
3600:462	Theory of Knowledge	3
3600:471	Metaphysics	3
3600:480	Seminar (on science topic)	3

• Electives: 6 credits from the following:

3100:211	General Genetics	3
3100:217	General Ecology	3
3100:311	Cell and Molecular Biology	4
3100:316	Evolutionary Biology	3
3100:331	Microbiology	4
3150:305	Physical Chemistry for Biological Sciences	4
3150:313	Physical Chemistry Lecture I	3
3150:314	Physical Chemistry Lecture II	3
3150:401	Biochemistry Lecture I	3
3150:402	Biochemistry Lecture II	3
3150:423	Analytical Chemistry I	3
3150:424	Analytical Chemistry II	3
3150:472	Advanced Inorganic Chemistry	3
3230:151	Human Evolution*	4
3230:359	Anthropological Theory	3
3230:410	Evolution and Human Behavior	3
3240:400	Archaeological Theory	3
3250:400	Intermediate Macroeconomics	3
3250:410	Intermediate Microeconomics	3
3250:426	Applied Econometrics	3
3370:324	Sedimentation and Stratigraphy	4
3370:350	Structural Geology	4
3370:360	Paleobiology	4
3400:487	Science and Technology in World History	3
3450:401	History of Mathematics	3
3470:450	Probability	3
3470:451	Theoretical Statistics I	3
3470:461	Applied Statistics	4
3650:291	Elementary Classical Physics I	4
3650:292	Elementary Classical Physics II	4
3650:301	Elementary Modern Physics	3
3650:340	Thermal Physics	3
3650:350	Modeling and Simulation	4
3650:431	Mechanics I	3
3650:436	Electromagnetism I	3
3650:441	Quantum Physics I	3
3650:470	Introduction to Solid-State Physics	3
3750:320	Biopsychology	4
3750:340	Social Psychology	4
3750:345	Cognitive Processes	4
3850:301	Methods of Social Research I	4
3850:302	Methods of Social Research II	4
3850:315	Sociological Social Psychology	3
3850:460	Sociological Theory	4

* Can also be used for General Education credit.

NOTE: Cannot overlap more than 6 credits if obtaining both a Philosophy major and a Philosophy minor or if obtaining two Philosophy minors.

Philosophy of Science and Religion#

A total of 18 credits including:

- Required: 12 credits of Philosophy

3600:125	Theory and Evidence*	3
3600:331	Philosophy of Religion	3
3600:333	Philosophy of Science and Religion	3
3600:464	Philosophy of Science	3

- Electives: 6 credits from the following:

3100:316	Evolutionary Biology	3
3100:428	Biology of Behavior	3
3100:482	Neurobiology	3
3230:151	Human Evolution*	4
3230:455	Culture and Personality	3
3300:360	The Old Testament as Literature	3
3300:366	European Backgrounds of English Literature	3
3370:102	Introductory Historical Geology	4
3370:360	Paleobiology	4
3370:405	Archaeological Geology	3
3400:487	Science & Technology in World History	3
3600:392	Internship in Philosophy (in science and/or religion)	1-3
3600:471	Metaphysics	3
3600:480	Seminar (on science and/or religious issues)	3
3650:301	Elementary Modern Physics	3
3750:320	Biopsychology	4
3850:315	Sociological Social Psychology	3
3850:410	Social Structures and Personality	3
3850:460	Sociological Theory	4

Pre-Law Philosophy#

A total of 18 credits including:

- Required: 12 credits of Philosophy

ONE of the following:

3600:120	Introduction to Ethics*	3
3600:125	Theory and Evidence*	3
3600:170	Introduction to Logic*	3

PLUS:

3600:421	Philosophy of Law	3
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and TWO of the following:

3600:324	Social and Political Philosophy	3
3600:327	Law and Morality	3
3600:329	Philosophies of International Law	3
3600:361	Biomedical Ethics	3

- Electives: 6 credits from the following:

3002:301	Civil Rights Movement in America	3
3250:405	Economics of the Public Sector	3
3300:376	Legal Writing	3
3300:389	ST: Politics & American Literature	3
3350:432	Land Use Planning Law	3
3400:317	The Roman Republic	3
3400:452	American Revolutionary Era	3
3400:453	The Early American Republic	3
3600:211	History of Ancient Philosophy	3
3600:312	History of Medieval Philosophy	3
3600:313	History of Modern Philosophy	3
3600:323	Advanced Topics in Ethics	3
3600:324	Social & Political Philosophy	3
3600:327	Law and Morality	3
3600:329	Philosophies of International Law	3
3600:361	Biomedical Ethics	3
3600:362	Business Ethics	3
3600:363	Police Ethics	3
3600:418	20th Century Analytic Philosophy	3
3600:462	Theory of Knowledge	3
3700:302	American Political Ideas	3
3700:334	Law, Mediation & Violence	3
3700:335	Law & Society	3
3700:360	The Judicial Process	3
3700:361	Politics of the Criminal Justice System	3
3700:363	Crime, Punishment & Politics	3
3700:461	The Supreme Court & Constitutional Law	3
3700:462	The Supreme Court & Civil Liberties	3
3700:483	Constitutional Problems in Criminal Justice	3
3750:440	Personal Psychology & the Law	4
3850:330	Criminology	3

Credits

3850:441	Sociology of Law	3
6400:220	Legal & Social Environment of Business	3
6400:323	International Business Law	3
7600:245	Argumentation	3
7600:252	Persuasion	3
7750:470	Law for Social Workers	3

Credits

Physics@

- Required for all students:

3650:291,2	Elementary Classical Physics I, II **	8
3650:301	Elementary Modern Physics	3
3650:3xx	Electives	7

- Recommended electives:

3650:322,3	Intermediate Laboratory I, II	6
3650:340	Thermal Physics	3
3650:350	Modeling and Simulation	3

Political Science

- Each student shall complete at least nine of the required credits in 300/400-level coursework in political science.

- Available minor concentrations:

American Politics*

3700:100	Government and Politics in the United States	4
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Fourteen credits from the following:

3700:210	State and Local Government and Politics	3
3700:341	The American Congress	3
3700:350	The American Presidency	3
3700:360	The Judicial Process	3
3700:370	Public Administration: Concepts and Practices	4
3700:381	State Politics	3
3700:395	Internship in Government and Politics*	2-9
3700:402	Politics and the Media	3
3700:440	Survey Research Methods	3
3700:470	Campaign Management I	3
3700:471	Campaign Management II	3
3700:472	Campaign Finance	3
3700:474	Political Opinion, Behavior and Electoral Politics	3
3700:475	American Interest Groups	3
3700:476	American Political Parties	3

Comparative Politics

This minor requires a minimum of 19 credits.

3700:150	World Politics and Governments	3
3700:300	Comparative Politics	4

Twelve additional credits from the following:

3700:304	Modern Political Thought	3
3700:321	European Politics	3
3700:326	Politics of Developing Nations	3
3700:405	Politics in the Middle East	3
3700:414	Wealth and Power Among Nations	3

International Politics

3700:150	World Politics and Government	3
3700:310	International Politics and Institutions	3

Twelve additional credits from the following:

3700:300	Comparative Politics	4
3700:304	Modern Political Thought	3
3700:321	European Politics	3
3700:326	Politics of Developing Nations	3
3700:328	American Foreign Policy Process	3
3700:405	Politics in the Middle East	3
3700:410	International Security Policy	3
3700:414	Wealth and Power Among Nations	3

Note: Minimum 18 credits required for minor. See Political Science advisor for course information

* Can also be used for General Education credit.

NOTE: Cannot overlap more than 6 credits if obtaining both a Philosophy major and a Philosophy minor or if obtaining two Philosophy minors.

@ Courses not applicable to the minor in physics without written permission by a faculty committee are 3650:399, 488, 490, 497 and 498.

* A maximum of 3 credits of internship can be applied to minor.

** 3650:261,2, Physics for the Life Sciences, may be substituted for 3650:291,2, in whole or in part.

Pre-Law*

3700:100	Government and Politics in the United States	4
3700:360	The Judicial Process	3
3700:461	The Supreme Court and Constitutional Law	3

- Eight additional credits from the following:

3700:210	State and Local Government and Politics	3
3700:341	The American Congress	3
3700:361	Politics of the Criminal Justice System	3
3700:395	Internship in Government and Politics*	2-9
3700:462	The Supreme Court and Civil Liberties	3

Political Science/Criminal Justice#

3700:100	Government and Politics in the U.S.	4
3700:201	Introduction to Political Research	3
3700:361	Politics of the Criminal Justice System	3

- Eight additional credits from the following:

3700:363	Crime, Punishment, Politics: A Comparative Perspective	3
3700:395	Internship in Government and Politics#	2-9
3700:450	Administering Prisons, Probation and Parole	3
3700:480	Policy Problems: Criminal Justice	3
3700:481	The Challenges of Police Work	3
3700:482	Current Issues in Criminal Justice	3
3700:483	Constitutional Problems of Criminal Justice	3

Politics of Homeland Security

This minor will help students gain a better understanding of the threats facing domestic U.S. security, from terrorism to natural disasters, as well as what our government is doing to intervene and respond to those threats.

A minimum of 18 credits is required for this minor.

- Required:

3700:100	Government and Politics in the U.S.	4
	or	
3700:150	World Politics and Government	3

And the following two courses:

3700:336	Homeland Security Policies and Process	3
3700:337	Terrorism: Perpetrators, Politics, and Response	3

- Choose 9 credits from the following:

3700:310	International Politics and Institutions	3
3700:328	American Foreign Policy & Process	3
3700:334	Law, Mediation, and Violence	3
3700:339	Terrorism and the Constitution	3
3700:352	Weapons of Mass Destruction	3
3700:353	Future International Threats	3
3700:392	Selected Topics—with department approval	3
3700:410	International Security Policy	3
3700:413	Global Public Health Threats	3
3700:445	Al Qaeda	3

(Must be in a Criminal Justice related field.) A maximum of 4 credits of internship can be applied to minor.

Pre-MBA for Non-Business Majors

- Total credits required for the Pre-MBA Minor for Non-Business Majors: 18

		Credits
6200:201	Accounting Principles I	3
6500:301	Management: Principles and Concepts	3
6600:300	Marketing Principles	3
6200:250	Spreadsheet Modeling & Decision Analysis	3
6400:220	Legal & Social Environment of Business	3
6400:301	Corporate Finance	3
	or	
3250:244	Introduction to Economic Analysis	3

- Prerequisites must be honored.

- When an honors section of the core curriculum is available non-business honor students are required to enroll in that section.

Psychology

- A total of 19 credits in Psychology with eight credits of 300/400-level coursework.

- Required for all students:

3750:100	Introduction to Psychology	3
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- At least one course from these 100-200-level courses:

3750:110	Quantitative Method in Psychology	4
3750:220	Introduction to Experimental Psychology	4
3750:230	Developmental Psychology	4

- At least one course from these 300-level courses:

3750:320	Biopsychology	4
3750:335	Dynamics of Personality	4
3750:340	Social Psychology	4
3750:345	Cognitive Processes	4
3750:380	Industrial/Organizational Psychology	4

- Courses from the following list which relate to student's area of interest:

3750:400	Personality	4
3750:410	Psychological Tests and Measurements	4
3750:420	Abnormal Psychology	4
3750:430	Psychological Disorders of Children	4
3750:435	Cross-cultural Psychology	4
3750:440	Personnel Psychology and the Law	4
3750:441	Clinical and Counseling Psychology I	4
3750:443	Human Resource Management	4
3750:444	Organizational Theory	4
3750:445	Psychology of Small Group Behavior	4
3750:450	Cognitive Development	4
3750:460	History of Psychology	3
3750:474	Psychology of Women	4
3750:475	Psychology of Adulthood and Aging	4
3750:480	Special Topics in Psychology	1-4

Sales Management

The minor provides the student an opportunity to develop and document an understanding of sales management issues. A total of 18 credit hours are required for this minor. The student must complete 12 credit hours of required courses and six credit hours must be selected from a list of electives. To be granted this minor, the student must complete at least 9 credit hours of 6600 courses in addition to the requirements for any other major, minor or certificate that has been earned. Please note that 6600: 300 Marketing Principles and 6600: 335 Marketing Research are prerequisites for the required courses. They can, however, be used as the electives for the minor.

- Required: Complete all courses – 12 credits

6600: 275	Professional Selling	3
6600: 375	Marketing & Sales Analytics	3
6600: 478	Advanced Professional Selling	3
6600: 480	Sales Management	3

- Electives: Complete any 6 credits

6100: 495	Internship in Business	3
6600: 460	B2B Marketing	3
6600: 355	Buyer Behavior	3
6600: 335	Marketing Research	3
6600: 432	Integrated Marketing Communications	3
6600: 475	Business Negotiations	3
6600: 300	Marketing Principles	3

- Prerequisites must be honored.

- When an honors section of the core curriculum is available non-business honor students are required to enroll in that section.

Sociology

- Nineteen total credits are required. *Credits*
- Required for all students:

3850:100	Introduction to Sociology	4
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- A minimum of 15 additional credits of sociology courses at the 300/400 level are required. Students may wish to select courses which relate to a particular interest area. These areas are outlined in materials available in the Department of Sociology to assist in course selection for the minor program.

Speech-Language Pathology and Audiology

- Required core courses:

7700:110	Introduction to Disorders of Communication	3
7700:120	Introduction to Audiology/Aural Rehabilitation	4
7700:211	Introduction to Speech Science	2
7700:230	Language Science and Acquisition	4
7700:422	Organic Disorders of Communications	4
7700:440	Augmentative Communication	3

Sport Management

This minor is only available for students not majoring in a Department of Sport Science and Wellness Education program.

- A total of 18 credits are required for the Sport Management Minor.
- Required coursework — 15 credits:

5550:100	Introduction to Sport Studies	3
5550:370	Financial Aspects of Sport	3
5550:410	Introduction to Sport Sociology	3
5550:420	Fundamentals of Management Strategies in Sport	3
5550:424	Sport Leadership	3
- Electives — 3 credits

5550:364	Sport Ethics	3
5550:366	Sport Communication	3
5550:368	Sport Facility Management	3
5550:409	Sport Behavior	3
5550:422	Sport Planning/Promotion	3
5550:460	Physical Education Practicum	3

Statistics

- | | | |
|------------|--|---|
| 3450:221,2 | Analytic Geometry-Calculus I, II | 8 |
| 3450:312 | Linear Algebra | 3 |
| 3470:461 | Applied Statistics | 4 |
| 3470:462 | Applied Regression and ANOVA | 4 |
| | Approved 400-level statistics electives: | 6 |

Theatre Arts

In order to obtain a Minor in Theatre Arts, the student must successfully complete a minimum of 18 credits; 12 credits of required core courses and 6 credits must be from theatre 300-400 level courses. The course list is as follows:

- Core

7800:100	Experiencing Theatre	3
7800:108	Introduction to the Visual Arts of the Theatre	3
7800:172	Acting I	3
7800:264	Playscript and Performance Analysis	3
- Electives (or others as approved by adviser)

7800:336	Scenic Design	3
7800:335	History of Theatre and Dramatic Literature I	3
7800:435	History of Theatre and Dramatic Literature II	3
7800:355	Stage Lighting Design	3
7800:370	Directing I	3
7800:373	Acting II	3
7800:472	Methods of Teaching Elementary Theatre Arts	3
7800:473	Methods of Teaching Secondary Theatre Arts	3

Women's Studies

This minor focuses on the cultural practices that have largely excluded and devalued differences in gender, sexual orientation, ethnicity, race and class. This interdisciplinary minor requires certain core classes and then allows 12 hours of electives (two courses at the 300/400 level).

- Required for all students: *Credits*

3001:200	Introduction to Women's Studies	3
3001:480	Feminist Theory	3
3001:490	Women's Studies Lecture Series	1
3001:493	Individual Studies on Women	1-4
	or	
3001:489	Internship: Women's Studies	1-4
- Electives: One course from each of the following three areas: humanities, social sciences, fine and applied arts, plus an additional women's studies or cross-listed course from any area.

Humanities

3001:493	Individual Studies on Women*	1-3
3300:366	Women in Modern Novels	3
3300:389	ST: Ethnic Women in Literature	3
3300:389	ST: Women Writers	3
3300:489	Women and Film	3
3300:489	20th Century Women Writers	3
3300:453	American Women Poets	3
3600:355	Philosophy of Feminism	3

Social Sciences

2540:265	Women in Management	3
3001:489	Internship in Women's Studies*	1-4
3001:493	Individual Studies on Women*	1-3
3230:416	The Anthropology of Sex and Gender	3
3400:325	Women in Modern Europe	3
3400:340	African-American Women's History	3
3400:350	U.S. Women's History	3
3400:400	Gender and Culture in China	3
3700:392	ST:Women in Politics	1-3
3750:474	Psychology of Women	3
3850:325	Sociology of Women in Global Society	3
3850:447	The Sociology of Sex and Gender*	3
3850:455	Family Violence*	3

Creative and Professional Arts/Health Sciences and Human Services

3001:485	Women, Minorities and Media	3
3001:493	Individual Studies on Women	3
7100:401	Women in Art	3
7400:201	Courtship, Marriage and the Family	3
7400:219	Dress and Culture	3
7400:265	Child Development	3
7400:442	Human Sexuality	3
7400:485	Women and Food	3
7600:408	Women, Minorities and News	3
7750:411	Women's Issues in Social Work Practice	3
7750:480	ST:Gay and Lesbian Issues	3

Summit College

2260:265	Women and Addiction	3
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* Available at graduate level

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 a 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. Interdisciplinary Studies and certificate programs will include coursework designated as 1800.

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.

ACCOUNTING SPECIALIST

This certificate program is designed to address the needs of students who desire to develop an aptitude or interest in accounting technology. This program may be valuable to business technology majors and others who are pursuing a more specialized level of training to enhance their earning capability. This emphasis is on serving the objectives of those students seeking the higher skills level and toward providing the training for Certified Bookkeeper, a certification awarded by the American Institute of Professional Bookkeepers.

The awarding of this certificate is not contingent upon completion of a degree program.

- Students entering the Accounting Specialist Program must pass department placement exams or complete the following Bridge Courses prior to enrolling in the program.

Bridge Courses:		<i>Credits</i>
2440:105	Introduction to Computers and Application Software	3
2540:140	Keyboarding for Nonmajors	2

Requirements		<i>Credits</i>
2420:211	Basic Accounting I	3
2420:212	Basic Accounting II	3
2420:213	Essentials of Management Accounting	3
2420:217	Survey of Taxation	4
2420:243	Survey in Finance	3
2420:215	Computer Applications for Accounting Cycles	3
	or	
2420:220	Applied Accounting	3

ADDICTION SERVICES (BASIC)

This certificate program is intended for individuals who wish to enhance their knowledge of addiction and addiction treatment. This certificate is independent of a degree and is designed for individuals in one of the following categories:

- The person who is preparing for licensure.
- The person who has not had specialized addiction training but wants to develop expertise in this area.
- The person employed in the field who would like to upgrade his/her knowledge.

Requirements		<i>Credits</i>
2260:210	Addiction Education and Prevention*	3
2260:240	Drug Use and Abuse*	3
2260:260	Introduction to Addiction**	3
2260:261	Addiction Treatment	4
2260:267	Addiction Assessment and Treatment Planning	3

ADDICTION SERVICES (ADVANCED)

This certificate program is intended for individuals who wish to enhance their knowledge of addiction and addiction treatment. This certificate is independent of a degree and is designed for individuals in one of the following categories:

- The person who is preparing for licensure.
- The person who has not had specialized addiction training but wants to develop expertise in this area.
- The person employed in the field who would like to upgrade his/her knowledge.

Requirements		<i>Credits</i>
2260:210	Addiction Education and Prevention *	3
2260:240	Drug Use and Abuse*	3
2260:260	Introduction to Addiction **	3
2260:261	Addiction Treatment	4
2260:267	Addiction Assessment and Treatment Planning	3
2260:263	Group Principles in Addiction	3
2260:264	Addiction and the Family *	3
2260:270	Relapse Prevention*	3

- Addiction elective (choose from following):

2260:265	Women & Addiction *	3
2260:268	Co-Occurring Disorders*	3
2260:269	Criminal Justice & Addiction	3
2260:271	Behavioral Addictions*	3

* Offered as a Web-based course

** Offered as a Web-based course or in the classroom

AGING SERVICES

This program is intended for individuals who wish to enhance their knowledge of the aging process, study issues pertinent to the elderly, and develop skills useful in working with senior citizens. This program is not limited to community services majors.

This certificate program is generally designed for individuals in one of the following categories:

- The person with no degree but who is contemplating working with senior citizens.
- The person with a degree who has not had specialized training in the field of gerontology, but who would like to work in this field.
- The person employed in this field who would like to upgrade his/her knowledge and skills.
- Persons interested in enhancing the quality of their post-retirement years or those of family and friends.

Persons interested in this program should consult with the Public Services Department. This certificate may be earned independent of earning a degree.

Requirements

		Credits
2020:121	English	4
2020:222	Technical Report Writing	3
2040:240	Human Relations	3
2040:244	Death and Dying	2
2260:150	Introduction to Gerontological Services	3
2260:278	Techniques of Community Work	4
2260:279	Technical Experience: Community and Social Services	5
3006:450	Interdisciplinary Seminar in Gerontology	2
3006:486	Retirement Specialist	2
7400:441	Family Relationships in Middle and Later Years	3

APPLIED POLITICS

John C. Green, Ph.D., *Director*

The Ray C. Bliss Institute and the Department of Political Science have combined to offer a Certificate Program in Applied Politics for undergraduate students. The Certificate Program in Applied Politics offers coursework in the history, organization and management of campaigns intended to influence the outcome of political decisions. Working from a set of core courses, students are allowed to concentrate in the area of applied politics of greatest interest—campaigns, communications, lobbying, political parties, etc. Believing that democracy is best served by having active and informed citizens, the certificate is designed for all students, no matter what their degree program, as long as they have a deep interest in practical politics.

Requirements

Persons are eligible for admission to the Certificate Program in Applied Politics if they have been admitted to study as special, non-degree or full-time students in any department of the University. Students shall seek admission to this program by filing an application with the Bliss Institute. The student shall schedule courses with the assistance of an adviser at the earliest possible time.

Core Courses

3700:470	Campaign Management I	3
3700:471	Campaign Management II	3
3700:395	Internship in Government and Politics	3

Electives

In addition to the core courses, students must complete 9 elective credits. Three credits must be from the following:

3700:402	Politics and the Media	3
3700:440	Survey Research Methods	3
3700:472	Campaign Finance	3
3700:473	Voter Contact and Elections	3
3700:474	Public Opinion, Behavior and Electoral Politics	3
3700:475	American Interest Groups	3
3700:476	American Political Parties	3
7600:475	Political Communication	3

Completed electives must also include an additional 6 credits from the list above or from approved courses in Political Science, Communication, or other departments. Students must maintain at least a "B" (3.0) average in their coursework for the certificate.

Certificate

Political Science majors will, upon completion of the program, be awarded a B.A. or B.S. degree in Political Science with a Certificate in Applied Politics. Majors in other disciplines will have the Certificate noted on their permanent record.

ASIAN AND MIDDLE EASTERN STUDIES

The program in Asian and Middle Eastern Studies at The University of Akron offers interdisciplinary certificates in Asian Studies (including East, Southeast, or South) or Middle Eastern Studies for undergraduates as well as graduate students. The structure of each certificate option provides students the flexibility and opportunity to count certain key courses toward their General Education requirements. Strategic languages of East Asia or the Middle East are required, and a wide range of courses in fields including History, Anthropology, Political Science, Economics, Geography, Sociology, and Business are offered.

The University of Akron recognizes the importance of a truly global education. Students who complete certificates will find that their courses of study provide them with in-depth training in a special area that may be particularly useful as they pursue careers in academia, law, public history, education, business, and even medicine, where they will practice their profession abroad or use their international experience to expand their understandings of these regions as they work with topics on or populations from Asia and the Middle East. Certificates in Asian and Middle Eastern Studies can complement any major in the university and are also appropriate for non-degree students who might like to return to the university for mid-career training.

A minimum GPA of 3.0 in any of the undergraduate certificate tracks is required. The program strongly encourages study abroad, and will offer additional credits, to be applied toward the certificate, for certain courses that require overseas study in a country of the student's focus (Asia, Middle East) or for other individual experiences abroad. Students will also need to take classes in more than two disciplines (i.e., History, Geography, Political Science). Special courses that are not in the permanent bulletin might be offered that may fill a requirement. Students will need to complete the equivalent of a fourth-semester-level language class (a South or East Asian language for the Asian Studies Certificate, or a modern Middle Eastern language for the Middle Eastern Studies Certificate). Students will then complete 15 credits of approved electives for each track. Therefore, students must meet with the director to plan a course of study.

East/South Asian Studies Track

Requirements

- 15 credits
- In order to make the most of the interdisciplinary courses the program offers, students must choose their electives from at least three departments. For example, a student who is majoring in History might want to take three courses in History, one in Political Science, and one in Geography. Exceptions are only made with the director's approval.

Interdisciplinary Electives:

		Credits
3440:200	Empires of the Ancient World	3
3350:360	Asia	3
3370:141	Natural Environment of China	1
3370:455	Field Studies in Geology	1-3
3400:300	Imperial China	3
3400:285	World Civilizations: China**	2
3400:286	World Civilizations: Japan**	2
3400:287	World Civilizations: Southeast Asia**	2
3400:288	World Civilizations: India**	2
3400:301	Modern China	3
3400:303	Modern East Asia	3
3400:382	The Vietnam War	3
3400:400	Gender and Culture in China	3
3400:401	Japan and the Pacific War, 1895-1945	3
3400:416	Modern India	3
3400:493	Special Studies: North American History	3
3560:210	Japanese Culture through Film	3
7100:401	Special Topics: The Art of India	3
7100:401	Special Topics: The Art of China	3
7100:401	Special Topics: The Art of Korea and Japan	3
7100:401	Special Topics: The Art of Buddhist Japan	3

** Only one World Civ class will be counted toward the certificate credits unless the course involves travel abroad. World Civ classes do fulfill a GenEd requirement.

- Courses with comparative content are encouraged. Electives can also be included from the following list, subject to the director's approval. The director may need to review the course content:

		<i>Credits</i>
3001:485	Special topics in Women's Studies	1-3
3004:201	Introduction to International Development	3
3200:220	Introduction to the Ancient World	3
3230:357	Magic, Myth, and Religion	3
3230:370	Globalization and Culture	3
3850:421	Race and Ethnic Relations	3
3230:457	Medical Anthropology	3
3230:416	Sex and Gender	3
3230:420	The Anthropology of Food	3
3230:472	Special Topics in Anthropology	3
3240:101-120	Case Studies in Archaeology	1
3300:362	World Literature	3
3300:389	Special Topics: Literature and Language	3
3300:389	Special Topics: Ethnic Women in Literature	3
3350:250	World Regional Geography	3
3350:275	Geography of Cultural Diversity	2
3350:497	Regional Field Studies	3
3370:498	Special Topics in Geology	3
3400:340	Special Topics in History	3
3400:351	Global History: Encounters and Conflicts	4
3400:493	Special Studies: North American History	3
3600:340	Eastern Philosophy	3
3700:310	International Politics and Institutions	3
3700:326	Politics of Developing Nations	3
3700:328	American Foreign Policy Process	3
6200:408	International Financial Reporting and Analysis	3
6400:323	International Business Law	3
6400:481	International Business Finance	3
6500:457	International Management	3
6800:305	International Business	3
6800:421	International Business Practices	3
6800:496	Special Topics in International Business	3
7100:401	Special Topics in the History of Art	3
7400:446	Culture, Ethnicity and the Family	3
7600:325	Intercultural Communication	3

Middle Eastern Studies Track

Requirements

- 15 credits
- In order to make the most of the interdisciplinary courses the program offers, students must choose their electives from at least three departments. For example, a student who is majoring in History might want to take three courses in History, one in Political Science, and one in Geography. Exceptions are only made with the director's approval.

Interdisciplinary Electives:

3240:360	Ancient Near Eastern Archaeology***	3
3400:289	World Civilizations: Middle East	2
3400:307	Ancient Near East***	3
3400:340	Special Topics: A History of Iraq	3
3400:340	Special Topics: States and Statelessness in the Middle East: Kurds and Palestinians	3
3400:341	Islamic Fundamentalism and Revolution	3
3400:342	The Crusades through Arab Eyes	3
3400:493	Ottoman State and Society, 1300-1922	3
3400:493	Women and Gender in the Middle East	3
3700:392	Selected Topics in Political Science: Islamic Terrorism	3
3700:405	Politics in the Middle East	3

- Courses with comparative content are encouraged. Electives can also be included from the following list, subject to the director's approval. The director may need to review the course content:

3001:485	Special topics in Women's Studies	1-3
3004:201	Introduction to International Development	3
3200:220	Introduction to the Ancient World	3
3230:357	Magic, Myth, and Religion	3
3230:370	Globalization and Culture	3
3850:421	Race and Ethnic Relations	3
3230:457	Medical Anthropology	3
3230:416	Sex and Gender	3
3230:420	The Anthropology of Food	3

3230:472	Special Topics in Anthropology	3
3240:101-120	Case Studies in Archaeology	1
3250:461	Principles of International Economics	3
3300:362	World Literature	3
3300:389	Special Topics: Literature and Language	3
3300:389	Special Topics: Ethnic Women in Literature	3
3350:250	World Regional Geography	3
3350:275	Geography of Cultural Diversity	3
3350:497	Regional Field Studies	3
3370:498	Special Topics in Geology	3
3400:340	Special Topics in History	3
3400:351	Global History: Encounters and Conflicts	4
3400:493	Special Studies: North American History	3
3600:340	Eastern Philosophy	3
3700:310	International Politics and Institutions	3
3700:326	Politics of Developing Nations	3
3700:328	American Foreign Policy Process	3
6200:408	International Financial Reporting and Analysis	3
6400:323	International Business Law	3
6400:481	International Business Finance	3
6500:457	International Management	3
6800:305	International Business	3
6800:421	International Business Practices	3
6800:496	Special Topics in International Business	3
7100:401	Special Topics in the History of Art	3
7400:446	Culture, Ethnicity and the Family	3
7600:325	Intercultural Communication	3

BIOTECHNOLOGY SPECIALIZATION CERTIFICATE

The goal of this program is to allow engineering students with an interest in chemistry and biotechnology to develop suitable preparation for graduate study in biotechnology or the medical fields without reducing their potential for careers in traditional chemical engineering. Students will have ample opportunity to work with researchers in biotechnology through their engineering and design electives.

- All current requirements for the Bachelor's of Science in Chemical and Biomolecular Engineering (except: 3150:313,314 Physical Chemistry I and II and 4200:305 Material Science)

3100:111, 112	Principles of Biology I and II	4
3100:311	Cell and Molecular Biology	4
	or	
3100:331	Microbiology	4

- Advanced Chemistry Elective — 2 credits

3150:401	Biochemistry Lecture I	3
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- Chemical and Biomolecular Engineering Elective — 3 credits

4200:472	Separation Processes in Biochemical Engineering	3
4200:473	Bioreactor Design	3
4200:496	Topics in Chemical Engineering (with permission)	3
4200:194	Chemical Engineering Design I (with permission)	1
4200:294	Chemical Engineering Design II (with permission)	1-2
4200:394	Chemical Engineering Design III (with permission)	1-3
4200:494	Design Project (with permission)	3
4200:497	Honors Project (with permission)	1-3
4200:499	Research Project (with permission)	1-3
4800:360	Biofluid Mechanics	3
4800:400	Biomaterials	3

- Design Electives — 6 credits

4200:473	Bioreactor Design	3
4200:496	Topics in Chemical Engineering (with permission)	3
4200:194	Chemical Engineering Design I (with permission)	1
4200:294	Chemical Engineering Design II (with permission)	1-2
4200:394	Chemical Engineering Design III (with permission)	1-3
4200:494	Design Project (with permission)	3
4200:497	Honors Project (with permission)	1-3
4200:499	Research Project (with permission)	1-3
4300:482	Special Projects (with permission)	3
4800:485	Special Topics in Biomedical Engineering	1-3

*** Only one ancient world course will count towards the certificate.

BUSINESS MANAGEMENT TECHNOLOGY

This certificate program is intended to promote understanding of the basic aspects of business formation and operation. The program can be useful for non-business majors benefiting from an introduction to a new discipline. The emphasis is on serving the objectives of the students who expect to enhance their value to current employers or those students who may want to acquire newer skills toward seeking prospective employment.

The awarding of this certificate is not contingent upon completion of a degree program.

- Students entering the Business Management Technology Program must pass department placement exams or complete the following Bridge Courses prior to enrolling in the program.

Bridge Courses:		Credits
2440:105	Introduction to Computers and Application Software	3
2540:140	Keyboarding for Nonmajors	2
Required:		
2420:104	Introduction to Business in the Global Environment	3
2420:103	Essentials of Management Technology	3
2420:211	Basic Accounting I	3
2420:280	Essentials of Business Law	3
2520:101	Essentials of Marketing Technology	3

CHILD CARE WORKER

This certificate program provides basic vocational training for child-care practitioners. The course of study is a means of meeting the short range goals of students interested in acquiring skills for job placement in early childhood settings. This certificate may be attained independent of earning a degree.

2040:240	Human Relations	3
2200:245	Infant/Toddler Day-Care Programs	3
2200:250	Observing and Recording Children's Behavior	3
2200:246	Multicultural Issues in Child Care	3
2200:247	Diversity in Early Childhood Literacy	3
5200:360	Teaching in the Early Childhood Center	2
5200:370	Early Childhood Center Laboratory	2
7400:265	Child Development	3
7400:270	Theory and Guidance of Play	3
7400:280	Early Childhood Curriculum Methods	3

COMPUTER FORENSICS

The computer forensics certificate provides an educational foundation in both the legal and technical aspects of computer crime investigation. Students explore the criminology of high technology crime, criminal law as it applies to digital evidence, the investigative process, and professional communication. Students will gain hands-on experience with contemporary forensic tools and receive technical instruction in computer hardware, networks, and operating systems. Individuals working in the legal and investigative fields that seek to enhance their technical skills and beginners with a general interest in the subject area are welcome.

2220:100	Introduction to Criminal Justice	3
2220:280	Cybercrime	3
2220:281	Computer Forensic Methods	3
2220:286	Courtroom Communication	3
2440:145	Introduction to Unix/Linux	3
2440:201	Networking Basics	3
2440:247	Hardware Support	3
TOTAL: 21		

Pre-req for the computer courses is 2440:105 Introduction to Computers and Application Software or a placement test.

COMPUTER INFORMATION SYSTEMS

Students entering the Computer Information Systems certificate programs (Programming, Cisco Networking Technology, Database Development, and Webmaster) must pass department placement exams or complete the following Bridge Courses prior to enrolling in the program.

Bridge Courses:		Credits
2440:105	Introduction to Computers and Application Software	3
<i>Minimal acceptable grade is "C."</i>		

- Students must achieve a "C" or better in their technical courses (2440/2600)

Programming Certificate

Required Courses:		Credits
2440:121	Introduction to Logic/Programming	3
2440:160	Java Programming	3
2440:170	Visual Basic	3
2440:256	C++ Programming	3

Cisco Networking Technology Certificate

The Cisco Networking Certificate provides the network administration and technical support skills needed to provide Cisco support to business and industry. This certificate may be obtained independent of a degree.

Required Courses:		Credits
2440:201	Networking Basics	3
2440:202	Router and Routing Basics	3
2440:203	Switching Basics and Wireless	3
2440:204	WAN Technologies (Cisco option)	3

Cisco Networking classes offered at main campus only.

Database Development Certificate

The Database Development Certificate provides students from other disciplines an opportunity to gain database skills demanded by business and industry. This certificate may be obtained independent of a degree.

Required Courses:		Credits
2440:121	Introduction to Logic/Programming	3
2440:180	Database Concepts	3
2440:210	Client Server Programming	3
2440:234	Business Programming	3

Webmaster Certificate

The Webmaster Certificate provides students from other disciplines an opportunity to gain Web development skills demanded by business and industry. This certificate may be obtained independent of a degree.

Required Courses:		Credits
2440:121	Introduction to Logic/Programming	3
2440:140	Internet Tools	3
2440:141	Web Site Administration	3
2440:211	Interactive Web Programming	3
2440:212	Multimedia & Interactive Web Elements	3

COMPUTER PHYSICS

To qualify for the certificate program, a student must be in good academic standing in the major department and must submit a written request for admission to the director of the Physics department. This course of study adds a component of both physics and computer science to a major in a traditional area of science. The physics courses, beyond Elementary Classical Physics, emphasize computer applications, including data analysis and use of computers to solve physical problems.

		<i>Credits</i>
Physics		
3650:291,2	Elementary Classical Physics I, II	8
3650:350	Modeling and Simulation	4
Mathematics		
3450:221,2	Analytic Geometry-Calculus I, II	8
Computer Science		
3460:206	Introduction to C Programming	3
3460:209	Computer Science I	4
3460:210	Computer Science II	4

The certificate program has been structured to be accessible to most students working toward an undergraduate degree in a traditional area of science. The certificate may be combined with a minor in physics for students who wish to obtain a background in physics which emphasizes applications and uses of computers to collect and analyze data and to solve physical problems.

COMPUTER SCIENCE

To qualify for the Computer Science Certificate Program, a student must have earned a bachelor's degree in another major program and must submit to the department chair of Computer Science a written request for admission to the program. The request will outline the student's reasons and goals for enrolling in the program. A minimum grade-point average of 2.00 in the certificate program is required. The credits earned in the certificate program cannot be counted towards the Computer Science Minor Program.

3450:208	Introduction to Discrete Mathematics	4
3450:210	Calculus with Business Applications	3
	or	
3450:221	Analytic Geometry-Calculus I	4
3460:209	Computer Science I	4
3460:210	Computer Science II	4
3460:316	Data Structures	3
	Approved 300/400-Level Computer Science Electives	6

COMPUTER SECURITY

The computer security certificate provides an educational foundation in the policy, management, and technical aspects of computer and information security. Students explore the criminology of high technology crime, the legal aspects of information security, the investigative process, and basic digital forensic methods. In addition, students will receive technical instruction in computer hardware and networking. Individuals working in security and investigative fields that seek to enhance their technical skills and beginners with a general interest in the subject area are welcome.

2220:101	Introduction to Security Administration Technology	3
2220:234	Computer and Information Security	3
2220:280	Cybercrime,	3
2440:201	Networking Basics	3
	or	
2600:240	Microsoft Desktop Environment	3
2440:202	Router and Routing Basics	3
	or	
2600:242	Microsoft Networking II	3
2440:247	Hardware Support	3
2220:281	Computer Forensic Methods	3

Pre-req for the computer courses is 2440:105 Introduction to Computers and Application Software or a placement test.

CONFLICT MANAGEMENT FOR EDUCATORS

This 21-credit, interdisciplinary, certificate was designed by the Center for Conflict Management in collaboration with the College of Education for educators or students interested in teaching at any level.

• Core Courses (6 credits):		<i>Credits</i>
Conflict Core		
3700:334	Law, Mediation, and Violence	3
Socio-Cultural Core (choose one)		
3850:315	Sociological Social Psychology	3
3750:340	Social Psychology	4
3230:150	Human Cultures	3
• Elective Courses (choose 12 credits):		
Education Options		
5100:210	Characteristics of Learning	3
5500:320	Diversity in Learners	3
5500:330	Classroom Management	3
Political Science Options		
3700:341	American Congress	3
3700:350	American Presidency	3
3700:360	Judicial Process	3
3700:392	ST: Power and Community: Local Conflict Resolution	1-3
3700:475	American Interest Groups	3
3700:476	American Political Parties	3
Sociology Options		
3850:320	Social Inequalities	3
3850:421	Racial and Ethnic Relations	3
3850:428	Victim in Society	3
3850:430	Juvenile Delinquency	3
3850:447	The Sociology of Sex and Gender	3
3850:455	Family Violence	3
Communications Options		
7600:227	Nonverbal Communication	3
7600:325	Intercultural Communication	3
• Electives must include courses taken from at least three of these areas		
• Internship		3

Students must take at least three credits of internship in either the Political Science Department or the Sociology Department internship program, or they can arrange an internship with the Center Director directly.

For further information, contact Dr. William Lyons, Jr., director, at (330) 972-5855 or see www.uakron.edu/centers/conflict.

CONSTRUCTION ENGINEERING TECHNOLOGY

Construction Estimation

This certificate program is aimed at developing technical knowledge and skills necessary to accurately estimate construction projects. This certificate may be earned independently of earning a degree, but all coursework can be applied to an A.A.S. or the B.S. degree in Construction Engineering Technology.

- A minimum of 15 hours is required.
- The following courses are required (the courses may have prerequisites; contact an adviser):

		<i>Credits</i>
2990:150	Plan Reading	2
2990:131	Building Construction	2
2990:245	Construction Estimating	3
2990:358	Advanced Estimation	3
2990:465	Heavy Construction Estimating	3
2990:469	Contracts & Specifications	2

For further information, contact: Program Director, Construction Engineering Technology, Summit College, The University of Akron, Akron, OH 44325-6104; (330) 972-7501.

Construction Management

This certificate program is aimed at developing technical knowledge and skills necessary to supervise a highway construction project. This certificate may be earned independently of earning a degree, but all coursework can be applied to the B.S. degree in Construction Engineering Technology.

- A minimum of 16 hours is required.
- The following courses are required (the courses have prerequisites; contact an adviser):

2990:352	Field Management and Scheduling	2
2990:358	Advanced Estimating	3
2990:359	Construction Cost Control	3
2990:453	Legal Aspects of Construction	2
2990:468	Construction Management	3
2990:479	CPC Seminar	3

For further information, contact: Program Director, Construction Engineering Technology, Summit College, The University of Akron, Akron, OH 44325-6104; (330) 972-7501.

Heavy Construction

This certificate program is aimed at professionals with two to four years of experience or equivalent education. This certificate may be earned independently of earning a degree, but all coursework can be applied to the B.S. degree in Construction Engineering Technology.

- A minimum of 17 hours is required
- The following courses are required (the courses may have prerequisites; contact an adviser):

2990:246	Site Engineering	3
2990:352	Field Management & Scheduling	2
2990:358	Advanced Estimating	3
2990:361	Construction Formwork	3
2990:465	Heavy Construction Estimating	3
2990:466	Hydraulics	3

For further information, contact: Program Director, Construction Engineering Technology, Summit College, The University of Akron, Akron, OH 44325-6104; (330) 972-7501.

Materials Testing

A minimum of 16 credit hours is required.

The purpose of the certificate program in Materials Testing is to train individuals in the processes and procedures involved in standardized laboratory testing of construction related materials. This certificate may be earned independently of earning a degree, but all coursework can be applied to an A.A.S. degree in Construction Engineering Technology or a B.S. degree in Construction Engineering Technology.

The following courses are required (the courses may have prerequisites; contact an adviser):

		<i>Credits</i>
2990:125	Statics	3
2990:237	Materials Testing I	2
2990:238	Materials Testing II	2
2990:241	Strength of Materials	3
2990:246	Site Engineering	3
2990:354	Foundations in Construction	3

For further information, contact: Program Director, Construction Engineering Technology, Summit College, The University of Akron, Akron, OH 44325-6104; (330) 972-705.

Residential Building

The certificate program in Residential Building Technology is aimed at providing knowledge and skills to anyone planning to work in the building construction industry. This certificate program may be earned independently of earning a degree. All coursework can be applied to an A.A.S. degree or a B.S. degree in Construction Engineering Technology.

- A minimum of 15 hours is required.
- The following courses are required (the courses may have prerequisites; contact an adviser):

2990:131	Building Construction	2
2990:150	Plan Reading	2
2990:245	Construction Estimating	3
2990:310	Residential Building Construction	3
2990:312	Neighborhood Revitalization Project	3
2990:356	Safety in Construction	2

For further information, contact: Program Director, Construction Engineering Technology, Summit College, The University of Akron, Akron, OH 44325-6104; (330) 972-7501.

Residential Inspection

This certificate program is aimed at developing technical knowledge and skills necessary to conduct residential inspection. This certificate may be earned independently of earning a degree, but all coursework can be applied to an A.A.S. or the B.S. degree in Construction Engineering Technology.

- A minimum of 16 hours is required.
- The following courses are required (the courses may have prerequisites; contact an adviser):

2990:150	Plan Reading	2
2990:131	Building Construction	2
2990:310	Residential Building Construction	3
2990:312	Neighborhood Revitalization Project	3
2990:462	Mechanical Service Systems	3
2990:463	Electrical Service Systems	3

For further information, contact: Program Director, Construction Engineering Technology, Summit College, The University of Akron, Akron, OH 44325-6104; (330) 972-7501.

CORRECTIONS

This certificate introduces the student to a variety of current issues in corrections.

		<i>Credits</i>
2220:100	Introduction to Criminal Justice	3
2220:103	Introduction to Corrections	3
2220:270	Community Corrections	3
2220:275	Legal Aspects of Corrections	3
2260:255	Effective Workplace Relationships	3
2260:269	Criminal Justice and Addiction	3

CROSS-CULTURAL NEGOTIATION

South and East Asian Track

- Conflict Core (3 credits):

3700:334	Law, Mediation, and Violence	3
6600:475	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.

- Choose 9 credits from this electives list:

3250:460	Economics of Developing Countries	3
3250:461	Principles of International Economics	3
3370:141	Nature and Environment in China	1
3400:416	Modern India	3
3400:200	Empires of Ancient Asia	3
3400:300	Imperial China	3
3400:385-8	World Civilization: (one of) China, Japan, India, Southeast Asia	2
3560:304	Japanese Culture through Film	2
3560:422	Special Topics in Language Skills, Culture, or Literature	3
3700:310	International Politics and Institutions	3
3700:335	Law & Society	3
3700:300	Comparative Politics	4
3850:435	Sociology of Love	3
3850:455	Family Violence	3
3850:421	Racial and Ethnic Relations	3
5500:490	China for Educators	3
6800:421	International Business Practices	3
7600:450	Communication in Conflict	3
7600:325	Intercultural Communication	3
3700:395	Internship	3-6

(Student Conference on Cross-Cultural Negotiation or related project involving language immersion with Director approval)

Middle Eastern Track

- Conflict Core (3 credits):

		<i>Credits</i>
3700:334	Law, Mediation, and Violence	3
6600:475	Business Negotiations	3

- Language Core (6 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.

- Choose 9 credits from this electives list:

3250:460	Economics of Developing Countries	3
3250:461	Principles of International Economics	3
3370:141	Nature and Environment in China	1
3400:341	Islamic Fundamentalism and Revolution	3
3400:342	The Crusades Through Arab Eyes	3
3400:389	World Civilizations: Middle East	3
3400:351	Global History: Encounters and Conflicts	4
3400:200	Empires of Ancient Asia	3
3400:340	Special Topics: A History of Iraq	3
3400:340	Special Topics: States and Statelessness in the Middle East: Kurds and Palestinians	3
3560:422	Special Topics in Language Skills, Culture, or Literature	3
3700:310	International Politics and Institutions	3
3700:335	Law & Society	3
3700:405	Politics of the Middle East	3
3700:300	Comparative Politics	4
3850:435	Sociology of Love	3
3850:455	Family Violence	3
3850:421	Racial and Ethnic Relations	3
6800:421	International Business Practices	3
7600:450	Communication in Conflict	3
7600:325	Intercultural Communication	3
3700:395	Internship	3-6

(Student Conference on Cross-Cultural Negotiation or related project involving language immersion with Director approval)

Note: Students must select their electives from only one of the above two tracks and electives must include courses taken from more than two departments. We encourage students 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: we do not substitute for the conflict core classes.

DIGITAL ELECTRONICS AND MICROPROCESSORS

The certificate program in Digital Electronics and Microprocessors is designed for students who desire a formal, structured program in a specific area in the field of electronics, but, because of time or work constraints, are unable to pursue a complete associate or baccalaureate degree program.

The following 27 semester hours are required:

2030:152	Technical Mathematics II	2
2030:153	Technical Mathematics III	2
2030:154	Technical Mathematics IV	3
2860:120	Circuit Fundamentals	4
2860:121	Introduction to Electronics and Computers	3
2860:123	Electronic Devices	4
2860:136	Digital Fundamentals	2
2860:237	Digital Circuits	4
2860:238	Microprocessor Applications	4

All courses taken may be applied toward the Associate Degree in Electronic Engineering Technology. For further information contact (330) 972-7054.

DRAFTING AND COMPUTER DRAFTING TECHNOLOGY

The certificate program in Drafting and Computer Drafting Technology is intended for individuals who wish to enhance or update their drafting skills. The program has been designed so that an individual can emphasize a specific area of drafting. A minimum of 18 credits is required. All courses taken may be applied toward an associate degree in Drafting and Computer Drafting Technology. This certificate may be earned independent of any degree program.

The following 9 semester hours are required:

		<i>Credits</i>
2940:121	Technical Drawing I	3
2940:122	Technical Drawing II	3
2940:210	Computer Aided Drawing I	3

A minimum of 9 semester hours selected from the following:

2940:170	Surveying Drafting	3
2940:200	Advanced Drafting	3
2940:211	Computer Aided Drawing II	3
2940:230	Mechanical Systems Drafting	3
2940:240	Electrical & Electronic Drafting	3
2940:250	Architectural Drafting	3
2980:223	Fundamentals of Map Production	3
2990:250	Structural Drafting	2

EMERGENCY MANAGEMENT

The discipline of emergency management continues to evolve. Emergency management is becoming more complex and there is a demand for well-educated individuals in both the private and public sectors.

These courses provide emergency management foundations which can be applied to many careers including but not limited to: crisis management, business continuity, health services, public administration, political science, geography, homeland security, communications, and computer information systems or related areas. The courses offered provide emergency management skills useful in many careers whether as a student or a practitioner looking to expand their knowledge. The granting of this certificate does not require completion of a degree.

- Completion of 21 hours of Emergency Management courses as follows:

- Required classes

2235:305	Principles of Emergency Management	3
2235:350	Emergency Response, Preparedness, and Planning	3
2235:370	Hazard Processes for Emergency Management	3
2235:xxx	Emergency Management Electives	12

- Electives

2235:320	Emergency Management Business	3
2235:355	Emergency Management Research Methods and Applications	3
2235:360	Introduction to Terrorism	3
2235:380	Disaster Victims: Casualties and Recoveries	3
2235:385	Disasters in Film and Media	3
2235:405	Hazard Prevention and Mitigation	3
2235:410	Disaster Relief and Recovery	3
2235:490	Current Topics in Emergency Management	3

ENTREPRENEURSHIP

All students at the University can earn a Certificate in Entrepreneurship where they will learn skills related to creativity, innovation, and entrepreneurial activity. This applied program focuses on the individual needs of the student whether it is creating a new enterprise, buying or growing an existing enterprise, franchising, family business, and corporate or social entrepreneurship. Numerous enterprises have been created and built through this nationally recognized program.

A total of 15 credit hours is required for the certificate program. Students must complete 12 credit hours of required courses. In addition, a 3 credit hour course must be selected from a list of electives.

- Required: Complete all courses - 12 hours

		<i>Credits</i>
6300:201	Introduction to Entrepreneurship	3
6300:301	New Venture Creation	3
6600:300	Marketing Principles	3
6140:300	Introduction to Finance	3
	or	
6400:301	Corporate Finance	3

- Electives: Complete one course - 3 credits

6100:495	Internship in Business Administration	3
6200:201	Accounting Principles I	3
6300:360	Entrepreneurial Field Project	3
6300:450	Business Plan Development	3
6400:220	Legal and Social Environment Business	3
6600:275	Professional Selling	3

- Prerequisites must be honored.

ENVIRONMENTAL STUDIES

To qualify for the certificate program, students must request admission to the program by completing the certificate application form. If currently enrolled in a degree program, they must be in good academic standing with their major department. A plan of study will be developed in consultation with the director of the Certificate Program, and must be approved by the director. To satisfy the requirements a student must complete the core courses and 11 credits from the list of elective courses or other courses identified as acceptable by the director. Elective courses will be selected from outside the student's academic major. For advising, contact the Department of Geology and Environmental Science.

The awarding of this certificate is not contingent on enrollment in, or completion of, a degree program.

• Core (required)		<i>Credits</i>
3370:211	Introduction to Environmental Science	3
3370:480	Seminar in Environmental Studies	2
• Electives (minimum of 11 credits)		
2230:250	Hazardous Materials	4
3100:217	General Ecology	3
3100:342	Flora and Taxonomy	3
3100:421	Tropical Field Biology	4
3100:426	Wetland Ecology	4
3100:427	Freshwater Ecology Field	4
3150:100	Chemistry and Society	3
3250:385	Economics of Natural Resources and the Environment	3
3350:310	Physical and Environmental Geography	3
3350:351	Ohio Environment and Society	3
3350:405	Geographic Information Systems	3
3350:407	Advanced Geographic Information Systems	3
3350:447	Remote Sensing	3
3350:449	Advanced Remote Sensing	3
3350:495	Soil and Water Field Studies	3
3370:121, 122, 125, 127, 128, 129, 133, 135, 137, 140, 141	Concepts in Geology	1
3370:200	Environmental Geology	3
3370:201, 203	Exercises in Environmental Geology I, II	1
3370:301	Engineering Geology	3
3370:371	Oceanography	4
3370:451	Field/Lab Studies in Environmental Science	3
3370:470	Geochemistry	3
3370:474	Groundwater Hydrology	3
3370:490	Workshop in Geology and Environmental Science	1-4
3400:471	American Environmental History	3
3400:471	American Environmental History	3
3470:261	Introductory Statistics I	2
3470:262	Introductory Statistics II	2
3850:321	Population	3
4100:203	Environmental Science & Engineering	3
4200:463	Pollution Control	3
4300:321	Introduction to Environmental Engineering	3
4300:323	Water Supply and Pollution Control	3
4300:423	Chemistry for Environmental Engineers	3
4300:424	Water-Wastewater Laboratory	1
4300:426	Environmental Engineering Design	3
4300:427	Water Quality Modeling and Management	3
4300:428	Hazardous and Solid Waste	3

FIELD ARCHAEOLOGY

The Certificate in Field Archaeology is designed for students interested in field archaeology as a career choice. Cultural resource management (CRM or "contract archaeology") is the fastest-growing area of archaeology in the United States due to federal legislation which requires an archaeological assessment of the impact of federally-funded activities on prehistoric and historic cultural remains. This legislation has greatly increased the demand nationally for trained field archaeologists. The Certificate in Field Archaeology trains students to work in CRM by promoting a solid understanding of the principles and theories of archaeology as well as providing training in basic field methods and cutting-edge technology. The Certificate in Field Archaeology is multidisciplinary and students have the option of taking electives in Geology and Environmental Science, Geography and Survey and Construction Engineering Technology.

The Certificate in Field Archaeology requires students to successfully pass three required courses and three elective courses, each worth 3 credits for a total of 18 credits.

		<i>Credits</i>
3240:400	Archaeological Theory	3
3240:440	Archaeological Laboratory Methods	3
3240:450	Archaeological Field School	1-6
• Electives:		
2980:122	Elementary Surveying	3
3240:300	Historical Archaeology	3
3240:410	Archaeogeophysical Survey	3
3240:420	Archaeology of Ohio	3
3240:472	Special Topics in Archaeology	1-6
3240:499	Senior Honors Project in Archaeology	1-6
3350:405	Geographic Information Systems	3
3370:405	Archaeological Geology	3

Notes:

- (1) Only three credits of 3240:450 Archaeological Field School may be counted toward the Certificate in Field Archaeology.
- (2) The Certificate in Field Archaeology may be earned independently of a degree.

FINANCIAL PLANNING

The 24-credit certificate in Financial Planning will permit students to acquire the educational foundation for a career in financial planning and will qualify them to sit for the Certified Financial Planner Certification Examination.

6200:410	Taxation for Financial Planning	3
6200:430	Contemporary Federal Taxation	3
6400:200	Foundations in Personal Finance	3
6400:301	Corporate Finance	3
	or	
6140:300	Introduction to Finance (non-business students only)	3
6400:343	Investments	3
6400:415	Risk Management: Life and Health Insurance	3
6400:417	Retirement Planning	3
6400:432	Seminar in Personal Financial Planning	3

- Prerequisites must be honored.

FIRE PROTECTION TECHNOLOGY

Fire continues to be a problem in the United States even though the loss of lives is declining due to new, innovative public education programs, rigorous enforcement of building and fire code enforcement and the application of advanced technology related to fire detection and suppression systems. However, with the loss of civilian lives ranging from 4,050 to 4,440 each year and property loss continuing to escalate, the need for well-educated fire fighters becomes more important as community resources are reallocated.

The Fire Protection Technology certificate will assist the student in acquiring the knowledge and skills necessary to function effectively as a fire protection specialist.

		<i>Credits</i>
2230:100	Introduction to Fire Protection	4
2230:102	Fire Safety in Building Design and Construction	3
2230:104	Fire Investigation Methods	4
2230:202	Incident Management for Emergency Responders	4
2230:204	Fire and Life Safety Education	3
2230:205	Fire Detection and Suppression Systems	3
2230:250	Hazardous Materials	4

FORENSIC STUDY OF BEHAVIORS

This certificate program is intended for individuals who wish to enhance their knowledge of behavioral sciences in criminal justice settings. This certificate is independent of a degree and is designed for individuals in one of the following categories:

- 1) Criminal Justice majors who wish to specialize in the study of behaviors within the criminal justice field.
- 2) Non-criminal justice majors who want an introduction to the discipline of criminal justice.
- 3) Professionals employed in the field who would like to further develop their expertise in this area.

		<i>Credits</i>
2220:100	Introduction to Criminal Justice	3
2220:255	Introduction to Forensic Investigation	3
2220:260	Critical Incident Interventions for Criminal Justice	3
2220:224	Profiling Serial Killers	3
2220:226	Interviews, Interrogations, and Hostage Negotiations	3
3850:428	The Victim and Society	3

FORENSIC PSYCHOLOGY

The Forensic Psychology Certificate provides an educational foundation in the application of psychological theory and methods in criminal justice.

2220:100	Introduction to Criminal Justice	3
3750:100	Introduction to Psychology	3
3750:110	Quantitative Methods	4
3750:410	Psychological Tests and Measurements	4
2220:287	The Legal System and Psychology	3
2220:286	Courtroom Communication	3
One(1) Technical Elective from the following list:		
3750:420	Abnormal Psychology	4
3750:430	Psychological Disorders of Children	4
3750:320	Biopsychology	4
TOTAL:		24

FORENSIC STUDIES

The forensic studies certificate is designed for individuals interested in the application of scientific methods to the criminal legal process. The certificate provides the student with a foundation in physical and digital forensic methods, the investigative process, professional communication, the law of evidence, and the opportunity to explore a forensic discipline of their own choosing. The certificate is appropriate for students already possessing a degree in any of the disciplines that currently have a forensic specialization such as chemistry, biology, nursing, computer science, or accounting. Individuals working in the legal and investigative fields that seek to enhance their scientific reasoning skills and beginners with a general interest in the subject area are welcome.

2220:100	Introduction to Criminal Justice	3
2220:104	Evidence & Criminal Legal Process	3
2220:251	Criminal Investigation	3
2220:253	Basic Forensic Methods	3
2220:281	Computer Forensic Methods	3
2220:286	Courtroom Communication	3
xxxx:xxx	One approved elective in an area of specialization (ex. forensic accounting, forensic nursing, etc.)	<u>3</u>
		21

FRENCH AND FRANCOPHONE STUDIES

The certificate in French and Francophone Studies is designed for those students who are interested in developing their skills in the French language and in gaining a broader perspective on and a deeper understanding of French-speaking countries in Europe, Africa, North America, the Caribbean and Asia. This certificate prepares students to function in a multicultural, global context, and enhances students' career choices and employment potential. Students interested in this program should consult with the French Section adviser in the Department of Modern Languages.

- Requirements

*Students are required to earn 21 credits:

- 12 credits in French at the 300-level and above. A minimum of 3 credits must be in language, 3 in literature, and 3 in culture (9 credits total).

		Credits
3520:301	French Conversation or	3
3520:302	French Composition or	3
3520:403	Advanced French: Written and Oral Communication and	3
3520:305	French Literature or	3
3520:306	French Literature or	3
3520:422	Special Topic-Literature and	3
3520:303	French Culture and Civilization I or	3
3520:304	French Culture and Civilization II or	3
3520:422	Special Topic-Culture	3

Plus another 3 elective credits in a French course at the 300-400 level.

- 9 credits in other disciplines. Students will be able to expand on the French/Francophone unit of the class in another discipline by conducting extensive research and writing a paper. The French/Francophone component of a class in another discipline must be discussed with and approved by the course instructor and the student's adviser in the French Section.

Courses in other disciplines (at least two must be represented) can be chosen from the following list:

English:

3300:467	Modern European Fiction	3
3300:362	World Literature	3
3300:366	European Background of English Lit	3

Philosophy:

3600:313	History of Modern Philosophy	3
3600:424	Existentialism	3
3600:426	Phenomenology	3
3600:481	Philosophy of Language	3

History:

3400:337	France from Napoleon to de Gaulle	3
3400:381	History of Canada	3
3400:429	Europe in the French Revolution Era	3

Anthropology:

3230:251	Human Diversity	3
3230:370	Globalization and Culture	3

Political Sciences:

3700:392	Contemporary African Politics	3
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Art:

7100:301	Medieval Art	3
7100:302	Art in Europe	3
7100:306	Northern Renaissance	3

International Business:

6800:421	International Business Practices	3
6800:494	International Business Practicum	3

Marketing:

6600:385	International Marketing	3
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*French majors on the language, literature and culture track may be allowed to earn this certificate.

*Special Topics in the above disciplines may be used with permission of the French section.

GENDER CONFLICT

Center for Conflict Management

www.uakron.edu/centers/conflict

This is an 18-credit certificate providing students with an opportunity to conduct a rigorous, scholarly, and interdisciplinary investigation into gender conflicts.

		Credits
Required		
3700:422	Understanding Racial and Gender Conflict	3
3850:447/547	The Sociology of Sex and Gender	3
Chose from:		
3700:402	Politics and the Media	3
3700:334	Law, Mediation, and Violence	3
3700:375	Women in Politics	3
3850:325	Sociology of Women in Global Society	3
3850:365	ST: Sociology of Peace and Violence	3
3850:365	ST: Sociology of Sexuality	3
3850:441	Sociology of Law	3
3850:455	Family Violence	3
3230:416	Anthropology of Sex and Gender	3
3230:463	Social Anthropology	3
3300:489	Seminar in English: Subversive Women	3
3300:489	Seminar in English: British Women Writers	3
3400:340	ST: African-American Women's History	3
3400:350	US Women's History	3
3400:493	Special Studies: Women, Film and History	3
3400:325	Women in Modern Europe	3
Internship	(3 credits from Sociology, Political Science, Anthropology or History)	3

GEOGRAPHIC AND LAND INFORMATION SYSTEMS

The certificate program in Geographic and Land Information Systems may be earned independently of any degree program. It has been designed to provide individuals with the basic entry-level skills necessary for those seeking positions as GIS Technicians. All courses taken may be applied toward an A.A.S. degree in Land Surveying, an A.A.S. degree in Geographic and Land Information Systems (GIS/LIS), and/or the B.S. degree in Surveying and Mapping (with some restrictions; see adviser). Students who do not have experience or formal training in basic drafting must complete coursework in this area first (see adviser).

- A minimum of 18 hours is required.
- The following courses are required for completion of the certificate:

2980:100	Introduction to Geomatics	2
2985:101	Introduction to Geographic & Land Information Systems	3
2985:201	Intermediate Geographic & Land Information Systems	3
2985:205	Building Geodatabases	3
- The remaining seven credit hours may be selected from the list below.

2980:101	Basic Surveying I	2
2980:102	Basic Surveying II	2
2980:228	Boundary Surveying	3
2980:330	Applied Photogrammetry	3
2980:355	Computer Applications in Surveying	3
2980:445	Applications in GIS using GPS	3
2985:210	Geographic & Land Information Systems Project	3
2985:280	Topics in Professional Practice	2
2985:291	Geographic and Land Information Systems Internship	3

For further information, contact (330) 972-7059

GEOGRAPHIC INFORMATION SCIENCES AND CARTOGRAPHY

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 GI scientists, as geographic information systems (GIS) analysts, programmers, technicians, or as cartographers or remote sensing analysts.

This baccalaureate 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. Contact the Undergraduate Adviser in the Department of Geography and Planning for further information.

• Geotechniques Requirements — 9 credits:		
3350:405	Geographic Information Systems	3
3350:440	Cartography	3
3350:447	Remote Sensing	3
• Geotechniques Electives — 9 credits:		
3350:407	Advanced Geographic Information Systems	3
3350:441	Global Positioning Systems (GPS)	1
3350:442	Cartographic Theory and Design	3
3350:444	Applications in Cartography and Geographic Information Systems	3
3350:445	GIS Database Design	3
3350:446	GIS Programming and Customization	3
3350:449	Advanced Remote Sensing	3
3350:481	Research Methods in Geography and Planning	3
3350:483	Spatial Analysis	3
3350:496	Field Research Methods	3

GERONTOLOGY

Harvey L. Sterns, Ph.D., *Director*

This certificate program is a special course of study in gerontology that complements undergraduate degree programs in various departments and colleges throughout the University. Individuals who already hold an undergraduate degree may also pursue this 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 multi-disciplinary training of personnel in adult development and aging and helps to meet the critical shortage of trained individuals in the field of gerontology.

The undergraduate 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 for the certificate have been completed.

B.S./M.D. students may complete the Practicum/Internship and electives from courses available from the institute or the Office of Geriatric Medicine and Gerontology, at NEOUCOM.

Admission

To participate in the program, a student must:

- Obtain admittance to The University of Akron as an undergraduate or postbaccalaureate student.
- Submit an application to the program countersigned by the student's major academic adviser.
- Participate in an interview with the Director or a 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 of admission from the Director of the Institute for Life-Span Development and Gerontology.

Program

Minimum: 20 credits.

• Core		<i>Credits</i>
3006:450	Interdisciplinary Seminar in Gerontology	2
3006:495	Practicum/Internship (within Institute or in individual departments)	3
3100:392	Biology of Aging	3
3750:475	Psychology of Adulthood and Aging	4
3850:343	The Sociology of Aging	3
• Electives (must be outside of student's major degree department)		
3006:486	Retirement Specialist	2
3006:490	Workshop Women: Middle and Later Years	2
3006:490	Workshop Aging: Process and Intervention	2
3006:485-001	Special Topics Long Term Care: Case Management/Patient Services	3
3006:485-003	Special Topics Long Term Care: Health and Nutrition	3
2040:244/344	Death and Dying	2
3850:365	Special Topics in Sociology: Death and Dying	3
5400:400	Post Secondary Learner	3
6500:480	Introduction to Health Care Management	3
7400:441	Family Relationships in Middle and Later Years	3
7700:110	Introduction to Disorders of Communication	3
7750:450	Social Needs and Services: Aging	3
3006:485	ST: Long Term Care Administration	3
3006:485	ST: Long Term Care Case Management and Patient Services	3
3006:485	ST: Long Term Care Health and Nutrition	3
3006:485	ST: Long Term Care Administrator-in-Training Experience	3

Many courses have prerequisites; contact your adviser or the Institute director.

HEALTH CARE SELLING

Linda Orr, Ph.D., *Coordinator*

This program provides the student an opportunity to develop and document an understanding of selling within the health care industry, an important economic sector accounting for approximately 10 percent of the economic activity in the U.S. This certificate is designed to serve the needs of students preparing for careers in selling pharmaceutical products, medical supplies and equipment, or other health care products and services.

A total of 15 credits is required for the certificate program. The student must complete 6 credit hours of required courses and 9 credit hours must be selected from a list of electives. To be granted the certificate, the student must take at least 6 credit hours in addition to any other major, minor, or certificate that has been earned.

• Required: Complete all 6 credits		
6600:275	Professional Selling	3
6600:478	Advanced Professional Selling	3
• Electives: Complete at least 9 credits		
1880:310	Medicine and the Humanities	3
2740:120	Medical Terminology	3
2740:121	Study of Disease Processes	3
2740:230	Basic Pharmacology	3
2780:106	Anatomy and Physiology for Allied Health I	3
2780:107	Anatomy and Physiology for Allied Health II	3
3230:457	Medical Anthropology	3
3100:265	Introduction to Human Physiology	4
3150:100	Chemistry and Society	3
3600:361	Biomedical Ethics	3
3850:342	Sociology of Health and Illness	3
5550:150	Concepts in Health and Fitness	3
5570:101	Personal Health	2
6500:480	Introduction to Health Care Management	3
7400:295	Direct Experiences in the Hospital	3
7400:484	Hospital Settings, Children and Families	3
7600:438	Health Communication	3
7750:456	Social Work in Health Services	3
8200:100	Introduction to Nursing	1

- Prerequisites must be honored.

HOME-BASED INTERVENTION

Richard Glotzer, Ph.D., *Coordinator*

This certificate program is a special course of study along with the undergraduate degree programs in various departments and colleges throughout the University. Undergraduate students will earn the certificate upon their graduation in their degree program. Individuals who already hold an undergraduate degree may pursue the certificate in the postbaccalaureate program. 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 this area.

The undergraduate curriculum committee of the Center for Family Studies will oversee the certificate program and certify through the director that all requirements for the certificate have been completed.

Admission

To participate in the program the student should:

- Be formally admitted to The University of Akron as an undergraduate or post-baccalaureate student.
- Make written application to the program countersigned by the student's major adviser (if applicable).
- Have an interview with the director of the certificate program in Home-based Intervention.
- Consult with the director to formulate a program of study.
- Receive written notification from the director of admission to the program.

Program

All students enrolled in the home-based certificate program will enroll in the core courses in Home-based Intervention. Students will complete 18 credits in core and elective coursework.

• Core (9-11 credits)	<i>Credits</i>
1820:403 Home-based Intervention Theory	3
1820:404 Home-based Intervention Techniques and Practice	3
1820:405 Home-based Intervention Internship	3-5

- Eligibility courses (9 credits)

Students must have completed at least nine undergraduate credits in theoretical frameworks from their discipline or in related areas as follows:

Students will select at least one course from each area or document the same or an equivalent course from transcripts.

Psychology

3750:100 Introduction to Psychology	3
3750:230 Developmental Psychology	4
3750:335 Dynamics of Personality	4

Family and Consumer Sciences

7400:265 Child Development	3
7400:360 Parent-Child Relations	3
7400:362 Family Life Management	3

Sociology/Social Work

7750:276 Introduction to Social Welfare	3
7750:455 Social Work Practice with African American Families	3
3850:100 Introduction to Sociology	4
3850:340 The Family	3

- Electives (9 credits)

Select one course from three different disciplines. (Must be outside student's major degree area.)

Family and Consumer Sciences		
7400:401 American Families in Poverty		3
7400:404 Middle Childhood and Adolescence		3
7400:440 Family Crisis		3
7400:442 Human Sexuality		3
Sociology		
3850:410 Social Structures and Personality		3
3850:412 Socialization: Child to Adult		3
3850:430 Juvenile Delinquency		3
3850:450 Sociology of Mental Illness		3
Psychology		
3750:400 Personality		4
3750:420 Abnormal Psychology		4
3750:430 Psychological Disorders of Children		4
Social Work		
7750:451 Social Work and Child Welfare		3
7750:452 Social Work and Mental Health		3
7750:454 Social Work in Juvenile Justice		3
Special Education		
5610:440 Developmental Characteristics of Exceptional Individuals		3
5610:446 Developmental Characteristics of Behaviorally Disordered Individuals		3
5610:459 Collaboration and Consultation in Schools and Community		3
5610:468 Advanced Behavioral Management		3

HOSPITALITY MANAGEMENT

The Hospitality Management certificates in Culinary Arts, Hotel/Motel Management, and Restaurant Management are intended to meet the needs of persons who are active or wish to become active in the hospitality industry and are seeking to acquire specific knowledge which will be of immediate use in their careers. The certificates are also of use to non-hospitality majors who wish to broaden their skills and employability.

NOTE: The award of these certificates are not contingent upon completion of a degree program. All courses taken may be applied toward an associate degree in hospitality management.

Culinary Arts

2280:101 Introduction to Hospitality	3
2280:120 Safety and Sanitation	2
2280:121,2 Fundamentals of Food Preparation I, II	8
2280:230 Advanced Food Preparation	4
2280:233 Restaurant Operation and Management	4
2280:245 Menu, Purchasing and Cost Control	4
2280:261 Baking and Classical Desserts	4

Hotel/Lodging Management Option

2280:101 Introduction to Hospitality	3
2280:120 Safety and Sanitation	2
2280:232 Dining Room Service and Training	3
2280:240 Supervision in the Hospitality Industry	3
2280:250 Front Office Operations	3
2280:268 Revenue Centers	3
2280:278 Hospitality Industry Marketing	3
2280:280 Special Events Management	3

Hotel Marketing and Sales Option

2280:101 Introduction to Hospitality	3
2280:250 Front Office Operations	3
2280:268 Revenue Centers	3
2280:278 Hospitality Industry Marketing	3
2280:280 Special Events Management	3
2520:212 Principles of Sales	3
2540:270 Business Software Applications	4

Restaurant Management Option

		Credits
2280:101	Introduction to Hospitality	3
2280:120	Safety and Sanitation	2
2280:121	Fundamentals of Food Preparation I	4
2280:122	Fundamentals of Food Preparation II	4
2280:160	Wine and Beverage Service	3
2280:232	Dining Room Service and Training	3
2280:233	Restaurant Operation and Management	4
2280:240	Supervision in the Hospitality Industry	3
2280:245	Menu, Purchasing and Cost Control	4
2280:256	Hospitality Law	3

INTERNATIONAL BUSINESS

Akhilesh Chandra, Ph.D., Coordinator

This certificate program provides students with the opportunity to enhance their potential in the job market by providing basic knowledge in international business. It is also a valuable means for post baccalaureate students to learn about international business.

- Required - Complete the following course (3 credits)

6800:305	International Business	3
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- Electives - Complete at least four courses (12 credits)

6100:495	Internship in Business	3
6400:438	International Banking	3
6400:481	International Business Finance	3
6500:433	Supply Chain Logistics Planning	3
6500:457	International Management	3
6800:421	International Business Practices	3
6800:496	Special Topics in International Business	3

- Prerequisites must be honored.

INTERNATIONAL DEVELOPMENT

The primary goal of the International Development Certificate (IDC) is to broaden the understanding and strengthen the skills of students who plan careers that involve work in less developed parts of the world. It provides a multidisciplinary background for students who plan more advanced study leading to positions in the government or non-governmental sectors. It also provides a broad but focused background for students planning to participate in the economies of developing countries through international business.

The program is open to students in good academic standing. Full-time, special or non-degree students may participate in the IDC program.

The curriculum has five aspects: foundational knowledge, area focus, skills, language ability and an independent project. There are a total of 24 credits in the Certificate: Six from required courses (3004:201 Introduction to International Development and 3004:401 International Development Project) and 18 from electives. In choosing electives, it is the responsibility of the student to determine whether they have the appropriate prerequisites.

For information, contact Dr. Elizabeth Erickson, Department of Economics at (330) 972-7546.

Program

- Minimum 24 credits

- Core (6 credits)

		Credits
3004:201	Introduction to International Development	3
3004:401	International Development Project	3

- Electives (6 credits)

3250:450	Comparative Economic Systems	3
3250:460	Economic Development & Planning for LDCs	3
3250:461	Principles of International Economics	3
3270:370	Globalization and Culture	3
3350:450	Development Planning	3
3700:311	Developing States in World Politics	3
3700:326	Politics of Developing Nations	3
3700:363	Crime, Punishment and Politics: Comparative Perspectives	3
3700:392	Selected Topics in Political Science: Tourism & Development	3
3850:321	Population	3
3870:463	Social Anthropology	3
3870:472	Special Topics: International Business	3
6800:305	International Business	3
6800:421	International Business Practices	3

- Global, Region and Area Focus (6 credits)

3350:353	Latin America	3
3350:360	Asia	3
3350:363	Africa South of the Sahara	3
3400:301	Modern China	3
3400:416	Modern India	3
3400:473	Latin America: 20th Century	3
3400:476	Central America & the Caribbean	3
3700:405	Politics of the Middle East	3

- Skills (6 credits)

Students are expected to acquire a broad set of functional skills that will allow them to read and critically evaluate quantitative and qualitative report materials relevant to their chosen area and interest. Students should choose skill courses in more than one disciplinary area.

3250:426	Econometrics	3
3350:405	Geographic Information Systems	3
3700:395	Internship in Government & Politics*	3
3700:440	Survey Research Methods	3
3850:301	Methods of Social Research I or II	4
3870:460	Qualitative Methods: Basis of Anthropological Research	3
6500:222	Quantitative Business Analysis I or II	3

Language Ability

It is the expectation that students will have or will obtain knowledge to the intermediate level of a foreign language appropriate to their area of interest. Each student should consult with the Director of the program to determine what language skills are needed in his or her specific case.

* Students may use this course only at the discretion of the Director, based on the nature of the internship

Project

Students seeking the International Development Certificate will develop their abilities to function in a foreign culture and to carry out a project by spending time abroad. Students are required to arrange an internship or other international experience with an institution, agency or firm through channels outside the certificate program, though the Director will provide advice if needed. They must consult with the Director to determine an appropriate period for their time abroad and provide a letter of affiliation from the institution, agency or firm to whom they are attached. During their time abroad, certificate candidates will complete a research project designed in conjunction with the Director of the International Development Certificate Program. A successful report from this project constitutes the final requirement for the receipt of the ID certificate.

LATIN AMERICAN STUDIES

The Undergraduate Certificate in Latin American Studies is a multidisciplinary program of study designed for students who want to graduate with a Bachelor's Degree as well as a credential that indicates a concentration or specialization in this area of the world. The Certificate program is flexible enough so that students can take courses in a wide range of fields—at least three different disciplines—and so that they can apply certain credits to their General Education requirements. The program requires fulfillment of a number of foreign language credits (Spanish or Portuguese), while it strongly encourages study abroad, offering additional credits for participation in study tours or study abroad programs sponsored by the University.

The Latin American Studies Certificate is designed to provide students with expertise in the Latin American region, with a focus on its dynamic societies, cultures, politics, economies, and histories. Students majoring in a variety of disciplines ranging from business, history, economics, education and medical fields and who plan careers that involve work in or related to Latin America or among the Latino population—the fastest growing minority group in the United States—would benefit from the in-depth training and language skills offered by the Certificate. Likewise, this program provides a broad but focused background for those students interested in pursuing advanced studies in academic or applied fields related to Latin America or the Latino experience, and for those contemplating work in governmental or non-governmental sectors.

For information and to design a plan of study, contact Dr. Martha Santos, Department of History, at santos@uakron.edu or (330) 972-2686.

- A minimum GPA of 3.0 is required.
- Language: Students must demonstrate competency in Spanish or Portuguese by completing a minimum of 3 credits in Spanish or Portuguese at the fourth semester (202) or above at The University of Akron, or the equivalent at an other accredited institution.
- Interdisciplinary Electives (choose 15 credits, from at least three departments)*

Anthropology and Classical Studies

3230:355	Indians of South America	3
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Economics

3250:460	Economics of Developing Countries	3
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History

3400:291	World Civilizations: Latin America	2
3400:373	Selected Topics: Other (Latin America)	3
3400:377	History of Women in Latin America	3
3400:378	Spanish Conquest and Colonization of the Americas	3
3400:379	Modern Latin America	3
3400:417	Latin America and the United States	3
3400:418	History of Brazil since 1500	3
3400:496	Special Studies: Other (Latin America)	3

International Business

6800:421	International Business Practices	3
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Geography

3350:353	Latin America	3
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Spanish

		Credits
3580:311	Spanish/Spanish American Cultural Experience	1-6
3580:350	The Literature of Spanish America in Translation	3
3580:408	Survey of Hispanic Literature: Spanish America	4
3580:425	20th Century Spanish American Novel	4
3580:427	Latino Cultures in the USA	4
3580:430	Women in 20th century Hispanic Literature	4
3580:432	Hispanic Culture: Spanish America	4
3580:414	Cultural Politics in the River Plate	4

LAW ENFORCEMENT

The Criminal Justice Technology Law Enforcement Certificate provides an introductory program in police studies for practitioners and those entering the field.

2220:100	Introduction to Criminal Justice	3
2220:105	Introduction to Police Studies	3
2220:102	Principles of Criminal Law	3
2220:104	Evidence and Criminal Legal Process	3
2220:260	Critical Incident Interventions for Criminal Justice	3
2220:251	Criminal Investigation	3

LINGUISTIC STUDIES

Arthur Palacas, Ph.D., *Director*

Completion of six linguistically oriented courses is required as follows: the foundation course, two core courses and at least three elective courses. Three or more of the courses must be at the 300/400 level. (Subject to approval by the program director, other theoretically oriented linguistics courses may substitute for core courses.)

To obtain the certificate, the student must have at least two semesters of a second language. A student entering the program should discuss plans with the director.

Foundation (Required)

3300:371	Introduction to Linguistics	3
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Core (Minimum of two of the following)

3230:461	Language and Culture	3
3300:472	Syntax	3
3600:481	Philosophy of Language	3
7700:230	Language Science and Acquisition	3
	or	
7700:430	Aspects of Normal Language Development	3

Electives

3300:400	Anglo Saxon	3
3300:470	History of the English Language	3
3300:471	U.S. Dialects: Black and White	3
3300:473	ST: Teaching ESL: Theory and Method	3
3300:489	ST: Sociolinguistics	3
3460:460	Artificial Intelligence and Heuristics Programming	3
3580:405,6	Spanish Linguistics	8
3600:170	Introduction to Logic	3
3600:374	Symbolic Logic	3
3600:418	20th Century Analytic Philosophy	3
3600:471	Metaphysics	3
5200:335	Teaching of Language Arts	5
7600:325	Intercultural Communication	2
7700:210	Introduction to Clinical Phonetics	4
7700:101	American Sign Language I	3

** Students may fulfill the language requirement by demonstrating basic competency in either Spanish or Portuguese at the FS-1 level (United State Department of State) or equivalent level.

Course substitutions may be made with the approval of the director of the certificate program. Study abroad credits earned through The University of Akron are especially appropriate for such course substitutions.

* Special or comparative courses that are not in the Bulletin or are not printed in the list above might be offered that may fulfill some of the electives requirement. Therefore, students must consult the program director to plan a course of study.

MANUAL COMMUNICATION

Lori Palmer, M.A., CI, CTCoordinator

This Certificate is designed to expose students to American Sign Language so they can communicate with Deaf/hearing impaired persons. Certificate holders will build toward communication competency in American Sign Language as well as cultural sensitivity regarding the Deaf community. This Certificate is open to undergraduate majors in any discipline as well as persons with a baccalaureate degree from the University or any other accredited institution. This certificate may also be earned independent of earning a degree.

		Credits
7700:101	American Sign Language I	3
7700:102	American Sign Language II	3
7700:201	American Sign Language III	3
7700:202	American Sign Language IV	3
7700:222	Survey of Deaf Culture in America	2
7700:245	First Responders to the Deaf Community	4

MARKETING AND SALES TECHNOLOGY

This program is designed for students who desire a formal, structured program in the field of Marketing and Sales but do not wish to pursue an associate or baccalaureate degree. In addition, students may have already received an associate or baccalaureate degree in another area and be interested in receiving formal training in the marketing segment of their career field.

2420:211	Basic Accounting I	3
2520:101	Essentials of Marketing Technology	3
2520:203	Principles of Advertising	3
2520:204	Services Marketing	3
2520:206	Retail Promotion and Advertising	3
2520:212	Principles of Sales	3
2520:254	Sales Management Technology	3

MARKETING AND SALES TECHNOLOGY: ADVERTISING

This program is designed for students who desire a formal, structured program in the field of Advertising but do not wish to pursue an associate or baccalaureate degree. In addition, students may have already received an associate or baccalaureate degree in a different area and be interested in receiving formalized training in advertising due to the pervasiveness of the field in virtually all areas of commerce.

2020:224	Writing for Advertising	4
2520:101	Essentials of Marketing	3
2520:203	Principles of Advertising	3
2520:204	Services Marketing	3
2520:221	Advertising Campaign	3

MEDICAL BILLING

The Medical Billing certificate is designed to prepare entry-level personnel for the medical billing office, physician's offices, peer review organizations, clinics, consulting firms, and/or insurance companies.

This certificate covers topics such as ICD-9-CM coding, CPT coding, and other information related to medical insurance claims.

2740:120	Medical Terminology	3
2740:127	Administrative Medical Assisting II	4
2780:106	Anatomy & Physiology for Allied Health I	3
2740:128	Basic Procedural Coding	3
2740:129	Basic Diagnostic Coding	3
2740:121	Study of Disease Processes	3
2740:230	Basic Pharmacology	3
2780:107	Anatomy & Physiology for Allied Health II	3
2740:228	Medical Insurance	3
2740:245	Medical Externship	4

MOTION AND CONTROL SPECIALIZATION

The primary purpose of the motion and control certificate program is to provide 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 practicing engineers and life-long learners to come back to school and refresh their skills. Mechanical engineering students who may choose this certificate program with special emphasis in motion and control will take all mechanical engineering electives in motion and control.

		Credits
4600:444/544	Robot, Design, Control and Application	3
4600:442/542	Industrial Automatic Control	3
4600:670	Integrated Flexible Manufacturing Systems*	3

OFFICE ADMINISTRATION - GENERAL OFFICE ASSISTANT

Designed for students who possess beginning computer skills and want to obtain entry-level office skills in two semesters. All credits apply to an associate degree in Office Administration.

2440:105	Introduction to Computers & Application Software	3
2540:119	Business English	3
2040:240	Human Relations	
	or	
2040:251	Human Behavior at Work	3
2540:129	Information/Records Management	3
2420:170	Applied Mathematics for Business	3
2540:143	Microsoft Word Beginning	2
2540:151	Intermediate Word Processing	3
2540:270	Business Software Applications	4
2540:281	Editing, Proofreading, & Transcription	3
2540:121	Introduction to Office Procedures	3

OFFICE SOFTWARE SPECIALIST, OFFICE ADMINISTRATION

This certificate will instruct students to use the most popular software packages used in today's offices. Also, students develop valuable written and oral communications skills required by employers. All credits are applicable to an Associate Degree in Office Administration.

First Semester:

2440:105	Introduction to Computers & Application Software	3
2540:119	Business English	3
2540:121	Introduction to Office Procedures	3
2540:151	Intermediate Word Processing	3
	or	
2540:253	Advanced Word Processing	3
2540:129	Information/Records Management	3

Total Credit Hours: 15

Second Semester:

2540:263	Professional Communications and Presentations	3
2540:271	Desktop Publishing	3
2540:270	Business Software Applications	4
2540:273	Microsoft PowerPoint	2

Total Credit Hours: 12

Prerequisites:

Students must pass a department placement exam or complete bridge courses (as needed as a result of the department placement exam) prior to enrolling in Office Administration course (2540).

Bridge course:

2540:140	Keyboarding for Non-majors	2
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* Undergraduate students must obtain permission to take this course.

OFFICE SUPERVISION

This one-year certificate for persons with previous college training and/or extensive office experience can add supervisory skills to enhance career opportunities. A student will take 18 credit hours of core courses and an additional 14 prescribed elective credits. Students will learn management skills, refine speaking and writing abilities, and focus on understanding and developing the human resources of an organization.

• Required		<i>Credits</i>
2040:251	Human Behavior at Work	3
2420:103	Essentials of Management Technology	3
2420:202	Elements of Human Resource Management	3
2540:129	Information/Records Management	3
2540:263	Professional Communications and Presentations	3
	Software Elective	3
	Electives	14
• Electives:		
2040:240	Human Relations	3
2420:104	Introduction to Business	3
2420:211	Basic Accounting I	3
2420:280	Essentials of Business Law	3
2540:119	Business English	3
2540:121	Introduction to Office Procedures	3
2540:265	Women in Management	3
2540:289	Career Development for Business Professionals	3
7600:105	Introduction to Public Speaking	3
	or	
7600:106	Effective Oral Communication	3

PAN-AFRICAN STUDIES

To satisfy the requirements for the certificate, a student must complete at least 15 semester credits and five courses with a minimum 2.30 GPA from the list of elective courses or other courses identified as acceptable by the director. The requirements are as follows:

• Required courses (6 credits):		
3002:201	Introduction to Pan-African Studies	3
3400:361	African American History 1492-1877	3
	or	
3400:362	African-American History 1877-present	3
• Elective Courses (9 credits)**		
2040:254	The Black Experience from 1619 to 1877	2
2040:257	The Black Experience 1877 to 1954	2
3002:301	The Civil Rights Movement in America 1945-1974	3
3002:401	General Seminar in Pan-African Studies	3
3002:420	Special Topics in Pan-African Studies	1-3
3002:498	Independent Study	1-3
3300:350	Black American Literature	3
3300:471	United States Dialects: Black and White	3
3350:363	Africa South of the Sahara	3
3400:290	World Civilizations: Africa	2
3400:363	African-America Men's History	3
3400:468	African-American Social and Intellectual History	3
3850:421	Racial and Ethnic Relations	3
7750:270	Poverty and Minority Issues	3
7750:276	Introduction to Social Welfare	3
7750:455	Social Work Practice with African American Families	3

A student undertaking the Pan-African Studies Certificate Program must have prior consultation with the director of Pan-African Studies.

For information, contact the Pan-African Studies Office, (330) 972-8427, CAS 126.

PARALEGAL STUDIES

Admission Requirements:

Students interested in the certificate program must meet one of the following criteria in order to be admitted:

- Associate degree or beyond;

Graduation Requirements:

- 2.0 GPA in major;
- Minimum of 32 credits as set forth in curriculum guide;
- No grade below a C in major.

• Required coursework includes		<i>Credits</i>
2290:101	Introduction to Paralegal Studies	3
2290:104	Basic Legal Research and Writing	3
2290:106	Business Associations	3
2290:108	Real Estate Transactions	3
2290:118	Probate Administration	4
2290:105	Law Office Technology	3
2290:220	Paralegal Internship	4
• Students are required to take 9 hours from the following courses		
2290:110	Tort Law	3
2290:112	Family Law	3
2290:204	Advanced Legal Research	3
2290:214	Civil Procedures	3
2290:216	Debtor-Creditor Relations	3
2290:218	Advanced Probate Administration	3
2290:290	Special Topics – Legal Assisting	3-5

Students interested in a Probate emphasis should take 2290:204, 2290:218, 2290:220, and two other courses Spring Semester.

Students interested in a Civil Litigation emphasis should take 2290:204, 2290:214 and 2290:220 and two other courses of their choice during the Spring Semester.

PARENT AND FAMILY EDUCATION

Susan D. Witt, Ph.D., Coordinator

This certificate is intended for individuals who wish to enhance their knowledge and study issues relevant to parenting and family life and develop skills useful in working with parents and families. The certificate may be added to any undergraduate degree program; it may also be completed by non-family or non-child development majors.

Program

- Core — complete the following:

7400:265	Child Development	3
7400:360	Parent-Child Relations	3
7400:496	Parent Education	3

- Electives

Students must successfully complete six credits of coursework selected from the various departmental courses listed below. These credits shall be chosen from departments outside the student's discipline.

Family and Consumer Sciences:

7400:201	Courtship, Marriage and Family Relations	3
7400:255	Fatherhood: The Parent Role	3
7400:362	Family Life Management	3
7400:401	American Families in Poverty	3
7400:404	Middle Childhood and Adolescence	3
7400:440	Family Crisis	3
7400:442	Human Sexuality	3
7400:441	Family Relations: Middle and Later Years	3
7400:446	Culture, Ethnicity and the Family	3

Social Work:

7750:270	Poverty and Minority Issues	3
7750:276	Intro to Social Welfare	3
7750:455	Social Work Practice with African American Families	3

* Undergraduate students must obtain permission to take this course.

** Special Topics/Selected Studies courses on topics appropriate to Pan-African Studies certificate may be applied with permission of Director.

Psychology:		<i>Credits</i>
3750:230	Developmental Psychology	4
3750:335	Dynamics of Personality	4
3750:430	Psychological Disorders of Children	4
Sociology:		
3850:340	The Family	3
3850:412	Socialization: Child to Adult	3
Anthropology:		
3230:251	Human Diversity	3
Special Education:		
5610:460	Family Dynamics & Communication in Education	3

PIANO PEDAGOGY

This certificate program in Piano Pedagogy is designed for students who wish to expand or update their skills with exposure to new methods and materials. The program can be completed in one year of full time enrollment or two years of part time enrollment. This certificate can also be completed independent of a degree program. Students must pass music placement tests and play a piano audition for admission into the program.

Program

- Complete the following:

7500:121	Theory & Musicianship I	4
7500:122	Theory & Musicianship II	4
7500:154	Music Literature I	2
7500:155	Music Literature II	2
7500:271	Piano Pedagogy I	2
7500:272	Piano Pedagogy II	2
7500:497	Independent Study	2
7520:125	Applied Piano	8

POLITICAL CONFLICT

Center for Conflict Management

www.uakron.edu/centers/conflict

- Core Courses (3 credits)

3700:334	Law, Mediation, and Violence	3
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- Electives (12 credits)

Choose one course from each of the following four clusters:

Institutional Conflicts

3700:341	The American Congress	3
3700:350	The American Presidency	3
3700:360	The Judicial Process	3
3700:441	The Policy Process	3

Linkage Conflicts

3700:402	Politics and the Media	3
3700:470	Campaign Management	3
3700:475	American Interest Groups	3
3700:476	American Political Parties	3

Global Conflicts

3700:310	International Politics and Institutions	4
3700:328	American Foreign Policy Process	3
3700:410	International Security Policy	3

Law and Justice Conflicts

3700:335	Law & Society	3
3700:363	Crime, Punishment, and Politics: A Comparative Perspective	3
3700:481	Challenges of Police Work	3
3700:483	Constitutional Problems in Criminal Justice	3

- Internship (3 credits)

POLYMER ENGINEERING SPECIALIZATION

The College of Engineering and the College of Polymer Science and Polymer Engineering allow for a specialization for the Mechanical Engineering student. Students may earn a Polymer Engineering Specialization Certificate by satisfying the following requirements

- Choose one of the following three Polymer courses: *Credits*
- | | | |
|----------|----------------------------|---|
| 9871:401 | Introduction to Elastomers | 3 |
| | or | |
| 9871:402 | Introduction to Plastics | 3 |
| | or | |
| 9871:407 | Polymer Science | 3 |
- and the following two courses:
- | | | |
|----------|--|---|
| 4700:425 | Introduction to Blending and Compounding of Polymers | 3 |
| 4700:427 | Introduction to Molding Technology | 3 |

POSTSECONDARY TEACHING

Susan J. Olson, Ph.D., *Program Coordinator*
solson@uakron.edu

This certificate program in postsecondary teaching is a special course of study within the College of Education to serve practicing or prospective postsecondary instructors in a variety of postsecondary institutions. Persons are eligible for admission to the Certificate in Postsecondary Teaching if they have been fully admitted to The University of Akron to study as an undergraduate or as a post-baccalaureate student. Individuals who already hold undergraduate or graduate degrees may also pursue this certificate.

Students shall seek admission to this program by filling out an application with the Graduate School. Once admitted, students will meet with the program coordinator to plan their programs of study. All accepted coursework must be no older than six years at the time of completion of the certificate. Only undergraduate credit may be used for the undergraduate certificate. Any course substitutions must be made with the adviser's prior written approval. Students must earn a "B" or better in all certificate coursework to receive this certificate. Students must have an undergraduate GPA of 2.75 or higher to be accepted. Enrollment will be limited to space available. All coursework must be completed within six years.

Program

- Minimum 21 credits:
- | | | |
|----------|--|---|
| 5400:400 | Postsecondary Learner | 3 |
| 5400:401 | Learning with Technology | 3 |
| 5400:405 | Work force Education for Youth and Adults | 3 |
| 5400:420 | Postsecondary Instructional Technology | 3 |
| 5400:430 | Systematic Curriculum Design for Postsecondary Instruction | 3 |
| 5400:435 | Systematic Instructional Design in Postsecondary Education | 3 |
| 5400:475 | Instructional Practice Seminar | 3 |

PROFESSIONAL COMMUNICATION

Joseph F. Ceccio, Ph.D.; Dudley Turner, Ph.D., *Co-directors*

The program will help meet our technological society's growing need for educated people who can develop sophisticated strategies for effective communication of business and technical information. People in the business community increasingly depend on communication to solve complex management, sales and information processing problems. The communication demands of business and industry are significant, and in many ways, different from those dealt with in traditional courses and majors. This certificate will recognize their preparation for handling the communication needs of business and industry, and must be earned concurrently with an undergraduate (associate or bachelor's) degree. A student who already possesses an undergraduate degree may directly pursue this certificate.

Program

		<i>Credits</i>
3300:390	Professional Writing I	3
3300:391	Professional Writing II	3
7600:309	Public Relations Publications	3
7600:345	Business and Professional Speaking	3

Because all four courses have prerequisites, students should consult course descriptions in **Section 8** for each course description.

PROFESSIONAL SELLING

Linda Orr, Ph.D., *Coordinator*

Program

- Please note that Principles of Marketing is prerequisite to both B2B Marketing and Buyer Behavior.

Required: Complete all 9 credits

6600:275	Professional Selling	3
6600:478	Advanced Professional Selling	3
6600:475	Business Negotiations	3

Elective: Complete any 6 credits

6100:495	Internship in Business	3
6600:300	Marketing Principles	3
6600:355	Buyer Behavior	3
6600:432	Integrated Marketing Communications	3
6600:460	B2B Marketing	3
6600:480	Sales Management	3

- Prerequisites must be honored.

PROFESSIONAL WRITING

This certificate, involving a minimum of 12 credits, will help students and members of the business community enhance their professional writing skills. The granting of this certificate does not require the completion of a degree. Students may choose 12 credits from the following courses:

2020:222	Technical Report Writing	3
2020:224	Writing for Advertising	4
2020:226	Electronic Reference Resources in the Computer Age	3
2020:227	Writing for the World Wide Web	3
2020:290	Special Topics	1-4
2540:119	Business English	3
	or	
3300:390	Professional Writing I	3

QUALITY ASSURANCE

The need for trained quality technicians continues to grow as manufacturing increases its focus on quality as an absolute requirement in the very competitive world-wide environment. This certificate program provides entry-level qualifications for non-degreed individuals while also offering the opportunity for career manufacturing personnel to obtain formal quality training. All courses taken may be applied toward the AAS or BS degree in Manufacturing Engineering Technology.

- A minimum of 15 hours is required.

The following courses are required:

		<i>Credits</i>
2820:131	Software Applications for Technology	1
2870:441	Advanced Quality Practices	3
2880:100	Basic Principles of Manufacturing Management	4
2880:241	Introduction to Quality Assurance	3
3470:261	Introductory Statistics I	2
3470:262	Introductory Statistics II	2

For further information, contact (330) 972-7052.

RACIAL CONFLICT

Center for Conflict Management

www.uakron.edu/centers/conflict

This is an 18-credit undergraduate certificate that is an intensive and interdisciplinary examination of racial conflict.

- Required:

3850:421	Racial and Ethnic Relations	3
3700:422	Understanding Racial and Gender Conflict	3

- Choose from:

3700:334	Law, Mediation, and Violence	3
3700:402	Politics and the Media	3
3700:462	Supreme Court and Civil Liberties	3
3850:310	Social Problems	3
3850:320	Social Inequalities	3
3850:365	ST: Sociology of Peace and Violence	3
3850:441	Sociology of Law	3
3230:410	Evolution and Human Behavior	3
3230:463	Social Anthropology	3
3400:340	African-American Women's History	3
3400:438	Nazi Germany	3
3400:454	The Civil War and Reconstruction, 1850-1877	4

RESEARCH METHODS FOR THE SOCIAL SCIENCES (RMSS)

(15-18 credit hours, depending on the distribution of courses by credit hour)

The RMSS Certificate is designed for students interested in interdisciplinary social science research. While each social science has its own approaches to research, there are many methods and techniques of data collection and analysis that are shared across disciplines. The goal of the RMSS program is to encourage and support the broad understanding and application of many social science research methodologies and to help bridge the divide between disciplines and methodologies.

To satisfy the requirements for the certificate, a student must complete a minimum of 15 semester credits, including two core courses, two complementary courses, and the RMSS Proseminar.

Core Methods Courses (CMC) (9-11 credits)

Required I. (Select one): Students can apply the methods course taken in their major discipline to the certificate or choose to take a course in another discipline. Students choosing a course in another discipline should be advised that there may be pre-requisites for the class in that department.

		Credits
Anthropology		
3230:398	Introduction to Anthropological Data	3
Communication		
7600:384	Communication Research	3
Emergency Management		
2235:355	Emergency Management Research Methods and Applications	3
Geography		
3350:481	Research Methods in Geography and Planning	3
History		
3400:310	Historical Methods	3
Marketing		
6600:335	Marketing Research	3
Nursing		
8200:436	Nursing Research	3
Political Science		
3700:201	Introduction to Political Research	3
Psychology		
3750:220	Experimental Psychology(Research & Design)	4
Social Work		
7750:440	Social Work Research I	3
Sociology		
3850:301	Methods of Social Research I	4

Required II. (Select one): Prerequisite: Completion of one of the Required I courses, or another course approved by the Program Directors.

Anthropology		
3230:460	Field Methods for Cultural Anthropology	4
Sociology		
3850:365	ST: Qualitative Research Methods	3

Required III. Research Methods for Proseminar (3850:470 or 3230:470) (3 credit hours). Prerequisite: Completion of all other courses towards the RMSS certificate and permission of the Program Directors.

This will be the final course for students completing the Certificate program in Research Methods. Students will demonstrate their ability to apply the research methods they have learned from conceptualization, design, data collection, analysis, and interpretation. The seminar will be offered in Sociology and Anthropology on a rotating basis.

Complementary Interdisciplinary Courses (CIC) (Minimum of 6 credits) – required from at least two different groups.

GROUP 1 — Philosophy		
3600:426	Phenomenology	3
3600:464	Philosophy of Science	3
GROUP 2 — English		
3300:479	Management Reports	3
3300:489	Writing for Social Sciences	3
GROUP 3 — Statistics & Sociology		
3470:460	Statistical Methods	4
3470:462	Applied Regression and ANOVA	4
3470:465	Design of Sample Surveys	3
3850:302	Methods of Social Research II	4

RETAIL MARKETING

William J. Hauser, Ph. D., Coordinator

This certificate program provides students with the opportunity to learn the basic concepts and practices in retail marketing as well as to obtain general marketing skills applicable to retail marketing.

Program

• Please note that Principles of Marketing is prerequisite to both B2B Marketing and Buyer Behavior.

Required: Complete all 9 credits		Credits
2520:202	Retailing Fundamentals	3
2520:206	Retail Promotion and Advertising	3
6600:300	Marketing Principles	3

• Electives: Complete two courses - 6 credits

6600:335	Marketing Research	3
6600:355	Buyer Behavior	3
6600:432	Integrated Marketing Communications	3
6600:438	Media Strategy	3
6600:445	Creative Laboratory	3
6600:440	Brand Management	3

• Prerequisites must be honored.

RUSSIAN AREA STUDIES

To obtain a certificate in Russian Area Studies, the undergraduate will satisfy the requirements for a baccalaureate major in the field of study of his or her choice. In addition the student will complete two years of Russian language (14 credits) and will also complete 12 additional credits in courses dealing with the study of Russia. For information, contact the Department of History, (330) 972-7006.

• Courses may be selected from the following list:

Geography		
3350:358	U.S.S.R.	3
History		
3400:458	Russia to 1801	3
3400:459	Russia since 1801	3
Political Science		
3700:300	Comparative Politics	4

SECURITY ADMINISTRATION

The Criminal Justice Technology/Security Administration Certificate offers an extensive curriculum dealing with policy, management, technology, and legal issues in physical, information, personnel, and homeland security.

2220:101	Introduction to Security Administration Technology	3
2220:231	Physical Security: Systems, Design, and Control	3
2220:232	Legal Issues in Security Administration	3
2220:233	Security Investigations: Principles and Practice	3
2220:234	Computer and Information Security	3
2220:245	Homeland Security: Principles and Practice	3

SMALL BUSINESS MANAGEMENT

This program is designed to address the expressed needs of small business students, many of whom are presently, or soon will be, small business owners and are interested in acquiring specific knowledge that will help them in their business immediately. This program would be valuable for many non-business majors who could benefit by this exposure to business concepts. The emphasis is on serving the objectives of those students seeking autonomy in exercising their initiative and ambition, including both traditional and non-traditional students.

The awarding of this certificate is not contingent upon completion of a degree program.

		Credits
2420:117	Small Business Development	3
2420:170	Applied Mathematics for Business	3
2420:211	Basic Accounting I	3
2420:227	Entrepreneurship Projects	3
2420:280	Essentials of Business Law	3
2440:105	Introduction to Computers and Application Software	3
2540:119	Business English	3

SUPERVISION AND MANAGEMENT

The Supervision and Management Certificate Program is aimed at providing knowledge and skills to the new and existing supervisor as well as to the individual who aspires to a supervisory position. The certificate program has been carefully designed to be flexible in order to meet the needs of various organizations and individuals. This program is in response to what many employers in the area have identified as a need that Summit College could help them meet. This certificate may be earned independent of earning a degree.

- A minimum of 21 semester hours is required as follows:

Interpersonal Skills

2040:240	Human Relations	3
2040:251	Human Behavior at Work	3

One course must be taken from each of the following three categories:

Management Theory and Skills

2420:103	Essentials of Management Technology	3
2880:100	Basic Principles of Manufacturing Management	4

Communication Skills

2020:121	English	4
2020:222	Technical Report Writing	3
2540:263	Professional Communications and Presentations	3

Math

2030:151	Technical Mathematics I	2
2030:152	Technical Mathematics II	2
2420:170	Applied Mathematics for Business	3

In addition to the above courses, a minimum of 6 credits must be completed from the following:

2040:247	Survey of Basic Economics	3
2420:202	Elements of Human Resource Management	3
2420:211	Basic Accounting I	3
2540:265	Women in Management	3
2880:232	Labor Management Relations	3
2880:241	Introduction to Quality Assurance	3

SURVEYING TECHNOLOGY

A minimum of 18 hours is required.

The certificate program in Surveying Technology may be earned independent of any degree program. This program has been designed so that students or graduates can meet the minimum education requirements in surveying coursework for registration as a Professional Surveyor. It is also designed to meet the education requirements for Technical Certification through the American Congress on Surveying and Mapping, National Society of Professional Surveyors. A minimum of 18 credits are required. All courses taken may be applied toward an A.A.S. degree in Land Surveying and/or B.S. degree in Surveying and Mapping.

The following 9 semester hours are required.

		Credits
2980:101	Basic Surveying I	2
2980:102	Basic Surveying II (or equivalent)	2
2980:228	Boundary Surveying	3
2980:310	Survey Computations and Adjustments	2

A minimum of 9 semester hours selected from the following. Consult with the Surveying Program Director to ensure that all State Board of Registration requirements are met).

2980:123	Surveying Field Practice	2
2980:222	Construction Surveying	3
2980:225	Advanced Surveying	3
2980:315	Boundary Control & Legal Principles	3
2980:415	Legal Aspects of Surveying	3
2980:421	Subdivision Design	3
2980:422	GPS Surveying	2
2980:426	History of Surveying to 1785	2
2980:xxx	Survey Elective	1-3

For more information, contact the Surveying & Mapping director at (330) 972-7059.

TEACHING ENGLISH AS A SECOND LANGUAGE†

Wei Zhang, Ph.D., *Director*

This program is intended for those who seek training in the teaching of English as a second language (ESL) at the elementary or high school level or who wish to obtain an initial qualification in teaching ESL in order to teach in settings other than the Ohio public school system. For Ohio certification in teaching ESL, see TESOL Validation requirements in **Section 4** of this Bulletin under the College of Education.

The program is designed to introduce the student to 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.

Program

This certificate requires the completion of four core courses and two elective courses for a minimum of 18 credits.

• Core

3300:473	Special Topics: Teaching ESL: Theory and Method	3
3300:489	Special Topics: Grammatical Structures of English	3
5500:481	Multicultural Education in the U.S. **	3
	or	
3300:489	Special Topics: Sociolinguistics**	3
5500:487	Techniques for Teaching English as a Second Language	4

• Electives

3300:371	Introduction to Linguistics	3
3300:470	History of the English Language	3
3300:472	Syntax	3
3300:489	Special Topics: Sociolinguistics†	3
3580:405	Spanish Linguistics	4
5500:485	Teaching Language Literacy to Second Language Learners	4
7600:325	Intercultural Communication	3
7700:230	Language Science and Acquisition	3
7700:430	Aspects of Normal Language Development	3

† The awarding of this certificate is not contingent upon completion of a degree program. Undergraduate certificate programs require a 2.00 grade-point average; graduate certificate programs require a 3.00 grade-point average.

** Choice to be decided in consultation with the program director.

TECHNICAL AND SKILLS TRAINING

This certificate program in technical and skills training is a special course of study within the College of Education to serve the practicing or prospective business and/or industrial-technical trainer. Persons are eligible for admission to the Certificate in Technical and Skills Training if they have been fully admitted to The University of Akron to study as an undergraduate student. Individuals who hold undergraduate or graduate degrees may also pursue this certificate. All coursework must be completed in six years. Contact Dr. Qetler Jensrud, Coordinator, (Qetler@uakron.edu) for more information.

• Minimum: 21 Credits		<i>Credits</i>
5400:400	Postsecondary Learner	3
5400:401	Learning with Technology	3
5400:415	Training in Business and Industry	3
5400:420	Postsecondary Instructional Technology	3
5400:430	Systematic Curriculum Design for Postsecondary Instruction	3
5400:435	Systematic Instructional Design in Postsecondary Education	3
5400:475	Instructional Practice Seminar	3

NOTES: 5400:401 is required before (or with) first courses in any postsecondary technical education (5400). The Instructional Applications Seminar is the last course taken.

All 5400 courses are available online or face-to-face.

TECHNICAL MATHEMATICS

This certificate is aimed at developing technical mathematics knowledge and the ability to apply this knowledge in an industrial setting. The granting of this certificate does not require the completion of a degree. However, all coursework can be applied to an A.A.S. degree or a B.S. degree in Engineering Technology. A minimum of 11 hours is required for completion of the certificate with a minimum grade point average of at least 2.5 and a "C" or better in each course. At least 6 of the 11 credit hours must be taken through Summit College. Students are required to take the following courses, or their equivalents, for completion of the certificate.

• Core Courses:		
2030:154	Technical Mathematics IV	3
2030:255	Technical Calculus I	3
2030:356	Technical Calculus II	3
	or	
2030:480	Advanced Topics in Technical Mathematics	2
• Electives (at least 2 credits)		
2030:345	Technical Data Analysis	2
2030:260	Advanced Trigonometry	2
2030:480	Advanced Topics in Technical Mathematics	2
2030:290	Special Topics	1-4
3450:200/300/400 level mathematics courses approved by the Technical Mathematics faculty of the Associate Studies Department		

TRANSPORTATION PLANNING

Transportation Planning issues are increasingly important for our region and the nation as a whole. With increases in vehicular traffic and the attendant traffic congestion, the need for proper and effective planning cannot be overemphasized.

A certificate enables students from a variety of fields ranging from geography to engineering and business to acquire key analytical skills that would prepare them for careers in transportation planning and management.

The program is open to all students in good standing. Full-time, special or non-degree students may participate in the program.

• Core Requirements (9 credits)		<i>Credits</i>
3350:422	Transportation Systems Planning	3
4300:361	Transportation Engineering	3
4300:463	Transportation Planning	3
• Electives (9 credits)		
3350:420	Urban Geography	3
3350:432	Land Use Planning Law	3
3350:433	Practical Approaches to Planning	3
3350:437	Planning Analysis and Projection Methods	3
3350:438	Land Use Planning Methods	3
4300:466	Traffic Engineering	3

Contact Undergraduate Adviser, Department of Geography and Planning for more information.

URBAN AND REGIONAL PLANNING

This baccalaureate certificate is designed to provide students with an understanding of basic concepts, methods, and tools used in urban and regional planning. The certificate can be taken by undergraduates majoring in geography, geology, political science, management, engineering, and related disciplines. It can also be taken as a freestanding certificate by non-degree seekers from:

• planning agencies, planning commissions, zoning commissions		
• private firms dealing with environmental design, landscape design, architecture, real estate, and construction		
• nongovernmental or advocacy organizations such as those in preservation and environmental planning		
• ordinary citizens who want to learn more about their surroundings and how they are planned		
• Planning Requirements — 6 credits:		
3350:433	Practical Approaches to Planning	3
3350:405	Geographic Information Systems	3
• Planning Electives — 9 credits:		
3350:415	Environmental Planning	3
3350:422	Transportation Systems Planning	3
3350:432	Land Use Planning Law	3
3350:437	Planning Analysis and Projection Methods	3
3350:438	Land Use Planning Methods	3
3350:439	History of Urban Design and Planning	3
3350:450	Development Planning	3
• Geotechniques Electives — 3 credits:		
3350:440	Cartography	3
3350:447	Remote Sensing	3
3350:483	Spatial Analysis	3
3350:496	Field Research Methods	3

Contact Undergraduate Adviser, Department of Geography and Planning for more information.

VICTIM STUDIES

The Department of Sociology and the School of Social Work offer a joint certificate program in Victim Studies. The program prepares students in sociology, social work, and other disciplines who would like to develop a specialization in victimology/victim studies in their degree program and future work.

• Core Required Courses — 12 credit hours		<i>Credits</i>
3850: 428	The Victim in Society	3
3850: 455	Family Violence	3
7750: 480	Special Topics: Crisis Intervention	3
7750: 445	Social Policy Analysis for Social Workers	3
Elective Courses (9 credit hours): select one course from each area.		
• Treatment and Intervention		
7750: 480	Special Topics: Disaster Intervention	3
7750: 465	Administration and Supervision in Social Work	3
7750: 475	Substance Abuse and Social Work Practice	3
3850: 431	Corrections	3
3850: 350	Drugs in Society	3
• Status Groups		
7750: 411	Women's Issues in Social Work Practice	3
3850: 325	Sociology of Women in Global Society	3
3850: 343	The Sociology of Aging	3
3850: 421	Racial and Ethnic Relations	3
3850: 447	Sociology of Gender	3
7750: 480	Special Topics: Foster Care and Adoption	3
7750: 450	Social Needs and Services: Aging	3
7750: 451	Social Work in Child Welfare	3
• Policy and Law		
3850: 433	Sociology of Deviant Behavior	3
3850: 441	Sociology of Law	3
3850: 341	Political Sociology	3
3850: 324	Social Movements	3
7750: 425	Social Work Ethics	3
7750: 454	Social Work in Juvenile Justice	3
7750: 470	Law for Social Workers	3

NOTE: Prerequisite courses for the Social Work courses will be waived for Sociology majors.

WOMEN'S STUDIES

Interdisciplinary and personalized, the Women's Studies certificate fosters a critical approach to knowledge about women; at the core of its intellectual agenda is diversity. 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 certificate integrates scholarship and research on women and gender from literature, psychology, history, sociology, and communication. Students are challenged to debate assumptions, explore divergent viewpoints, and discover the partial and often self-interested emphases of our society's most powerful institutions – family, church, academia, business, and government.

The Women's Studies Program helps students to evaluate what they have been taught and, most importantly, it empowers them to work for social justice after their education. Students find their own voices and develop the esteem necessary to articulate their own views. Out of such opportunities, a student culture of respect and tolerance emerges to support lasting communities that value and promote individual worth, collective action, and intellectual courage.

Students may enroll in any Women's Studies courses and/or make an appointment with the director to discuss a plan of study. Students need not be enrolled in the certificate program to take Women's Studies courses. This certificate may be earned independently of a degree.

For information, contact the Women's Studies Office, (330) 972-7008.

Admission

To participate in the program, the student must:

- Be formally admitted to The University of Akron as: 1) an undergraduate seeking a baccalaureate degree; 2) a postbaccalaureate student; or 3) by special admission for a free-standing certificate.
- Make written application to the program countersigned by the student's major academic adviser.
- Receive written notification of admission from the Director of the Women's Studies Program.
- Consult with the Director of the Women's Studies Program to formulate a program of study.

Program

• Core:		<i>Credits</i>
3001:200	Introduction to Women's Studies	3
3001:490	Women's Studies Lecture Series*	1
3001:480	Feminist Theory*	3
	or	
3001:493	Individual Studies on Women*	1-4

- Electives — 12 credits (two courses 300-400 level).

One course from each of the following three areas: humanities, social sciences, fine and applied arts, plus an additional women's studies or cross-listed course from any area.

• Humanities		
3001:493	Individual Studies on Women*	1-3
3300:453	American Women Poets	3
3400:325	Women in Modern Europe	3
3400:469	African-American Women's History	3
3400:350	U.S. Women's History	3
3400:364	Women Writers	3
3400:400	Gender and Culture in China*	3
3600:355	Philosophy of Feminism	3

Social Sciences

3230:416	The Anthropology of Sex and Gender	3
3700:375	Women in Politics	3
3750:474	Psychology of Women	4
3850:325	Sociology of Women in Global Society	3
3850:447	The Sociology of Sex and Gender*	3
3850:455	Family Violence*	3

Creative and Professional Arts/ Health Sciences and Human Services

7400:201	Courtship, Marriage and the Family	3
7400:219	Dress and Culture	3
7400:265	Child Development	3
7400:442	Human Sexuality*	3
7600:408	Women, Minorities and News*	3
7750:411	Women's Issues in Social Work Practice*	3

Electives in Education, Institute for Life-Span Development, Summit College, and Women's Studies Workshops

2450:265	Women in Management	3
2260:265	Women and Addiction	3
3001:485	Special Topics: Boys to Men: Masculinity in Contemporary Society*	3
3001:485	Special Topics: Women, Poverty and Welfare*	3
3001:493	Individual Studies in Women*	1-3
3001:489	Internship in Women's Studies*	1-4
76-00:446	Women, Minorities & Media*	3

* Available at the graduate level.



University Research Council

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, 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, Graduate School and the Director of Research Services and Sponsored Programs.

Research Centers and Institutes

- [Akron Global Polymer Academy](#)
- [Applied Polymer Research Center](#)
- [Center for Advanced Vehicles and Energy Systems](#)
- [Center for Conflict Management](#)
- [Center for Emergency Management and Homeland Security Policy Research](#)
- [Center for Family Studies](#)
- [Center for Information Technologies and eBusiness](#)
- [Center for Literacy](#)
- [Center for Organizational Development](#)
- [Center for Organizational Research](#)
- [Center for Silver Therapeutics Research](#)
- [Center for Statistical Consulting](#)
- [Center for the History of Psychology](#)
- [Center for Urban and Higher Education](#)
- [English Language Institute](#)
- [FirstEnergy Advanced Energy Research Center](#)
- [Fisher Institute for Professional Selling](#)
- [Gary L. and Karen S. Taylor Institute for Direct Marketing](#)
- [H. Kenneth Barker Center for Economic Education](#)
- [Institute for Biomedical Engineering Research](#)
- [Institute for Global Business](#)
- [Institute for Life-Span Development and Gerontology](#)
- [Institute for Teaching and Learning](#)
- [Institute of Bioscience and Social Research](#)
- [Institute of Polymer Science and Polymer Engineering](#)
- [Intellectual Property Law and Technology Center](#)
- [Microscale Physiochemical Engineering Center \(MPEC\)](#)
- [Nursing Center for Community Health](#)
- [Nutrition Center](#)
- [Ray C. Bliss Institute of Applied Politics](#)
- [The University of Akron Archival Services](#)
- [Training Center for Fire and Hazardous Materials](#)
- [Training Center for Law Enforcement and Criminal Justice](#)
- [University of Akron Magnetic Resonance Center \(UA/MRC\)](#)
- [William and Rita Fitzgerald Institute for Entrepreneurial Studies](#)
- [Workforce Development and Continuing Education](#)



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Akron Global Polymer Academy

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 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.

Website: [**Akron Global Polymer Academy**](#)



Applied Polymer Research Center

The Applied Polymer Research Center (APRC) is a contract services facility operated by The University of Akron's College of Polymer Science and Polymer Engineering. The Center has been serving the industrial community, especially rubber and plastics, for over 50 years.

The Center currently performs 300-400 projects a year, under complete confidentiality to the client. Projects are generally initiated and completed under a purchase order agreement.

With a full-time professional staff and a half-million dollar inventory of modern instrumentation, the Center is dedicated to performing sophisticated and timely contractual technical services for industrial and government clients. In addition to dedicated resources maintained by the Center, the laboratory has access to highly sophisticated instrumentation through the College of Polymer Science and Polymer Engineering, and will interface with a staff of over 30 highly specialized faculty to solve more complex polymer related problems.

Website: [Applied Polymer Research Center](#)



Center for Advanced Vehicles and Energy Systems

The Center for Advanced Vehicles and Energy Systems (CAVES), established in 2005, focuses on the research, development and dissemination of advanced automotive technology and alternative energy systems and their enabling technologies. The Center's efforts are geared toward product-oriented research, development and commercialization of efficient cost-effective solutions to alternative transportation systems, advanced energy sources and storage and their real-time control platforms. In addition to providing research services to industry, private and government agencies, CAVES also provides knowledge dissemination through symposia, lectures, seminars and project-oriented graduate and undergraduate design experiences.

The Electrical and Computer Engineering and Mechanical Engineering departments have faculty and graduate and undergraduate students currently involved in hybrid vehicle technology, energy systems and related areas. CAVES' activities are housed within a number of facilities, including the Power Electronics Laboratory, the Controls Research Laboratory, the Battery Research Facility, the Hybrid Electric Facility and the Pervasive Automation Laboratory, among others.

Website: [Center for Advanced Vehicles and Energy Systems](#)



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Center for Conflict Management

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, wtlyons@uakron.edu or www.uakron.edu/centers/conflict.

Website: [Center for Conflict Management](http://www.uakron.edu/centers/conflict)



Center for Emergency Management and Homeland Security Policy Research

The Center for the Emergency Management and Homeland Security Policy Research is dedicated to create a supportive environment for research, academics and outreach in emergency management and homeland security. It supports and encourages multidisciplinary endeavors in these fields that make a positive contribution to society. The Center is a collaborative partnership between The University of Akron and The Ohio Emergency Management Agency.

The Center focuses on policy and its interaction with the function of emergency management. This policy analysis and research relates to contemporary emergency management questions and issues on both state and national levels. Project areas include terrorism preparedness, business and industry continuity, disaster response and recovery assessment, as well as management practices relating to crises and disasters.

Website: [Center for Emergency Management and Homeland Security Policy Research](#)



Center for Family Studies

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 to its constituencies.

The Center is represented by faculty from five colleges and over 15 disciplines. It also includes leaders from various community systems, such as 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 fellows, adjunct fellows or senior fellows.

The Center offers certificates in the following specialty areas: General Mediation, Divorce Mediation and Home-Based Intervention.

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.

Website: [Center for Family Studies](#)



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Center for Information Technologies and eBusiness

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 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 www.uakron.edu/cite/ for more information.

Website: [Center for Information Technologies and eBusiness](http://www.uakron.edu/cite/)



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Center for Literacy

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 preservice, inservice and university teachers together with children and families in the greater Akron area through a wide range of literacy related projects. Additional information can be found at www.uakron.edu/education/community-engagement/literacy.

Website: [Center for Literacy](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 leadership training and management development programs that are custom designed to meet the specific needs of companies. For information, call 330-972-7654.

Website: [Center for Organizational Development](#)



Center for Organizational Research

The Center for Organizational Research (COR) is a business research and consulting center managed by the Industrial/Organizational Psychology program at The University of Akron. This program 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 client's needs because of its smaller client base and research orientation. COR offers larger organizations access to solutions based on cutting-edge research from a nationally regarded academic program.

Website: [Center for Organizational Research](#)



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Center for Silver Therapeutics Research

The Center for Silver Therapeutics Research is a research consortium composed of UA faculty researchers from many different departments and colleges. The center seeks to advance the use of silver ion-containing compounds for the treatment of a wide range of infections and in the antineoplastic area.

Website: [Center for Silver Therapeutics Research](#)



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 Buchtel College of Arts & Sciences Building, Room 118A. When requesting statistical consulting, refer to the Center's website at www.uakron.edu/statistics/about-us/, fill out the Request for Statistical Consulting form and email it to the department on the available link. The department will contact you for an appointment.

Website: [Center for Statistical Consulting](#)



Center for the History of Psychology

The Center for the History of Psychology (CHP) cares for, provides access to and interprets the historical record of psychology and related human sciences. The Center includes a museum of psychology that highlights artifacts, documents, films and photographs from the history of the human sciences. It is also the home to the Archives of the History of American Psychology.

The Archives of the History of American Psychology (AHAP) was founded at The University of Akron in 1965. It has grown to become the largest collection of its kind in the world, and is now comprised of a vast collection of artifacts, media and documents, including the personal papers of many important psychologists. The Center reflects the interdisciplinary nature of the Archives, which includes specialists in both psychology and library science.

The CHP opens its doors to scholars, students of all ages and visitors from across the globe that come to see and work with these one-of-a-kind collections.

Website: [Center for the History of Psychology](#)



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Center for Urban and Higher Education

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. It serves both the University and the community by fostering collaborations among faculty, administrators, students, practitioners and community leaders in educational conferences and seminars, research, evaluation and training. The Center designs professional development and school improvement workshops to address the needs of public and private school districts and post-secondary institutions. The Center is located in the College of Education Building, Zook Hall. For more information and when requesting services, please visit the Center's interactive website at www.cuhe.uakron.edu or via email at cuhe1@uakron.edu or call 330-972-8183.

Website: [Center for Urban and Higher Education](http://www.cuhe.uakron.edu)



English Language Institute

Established in 1979, the English Language Institute (ELI), part of the Buchtel College of Arts & Sciences, offers a program in English as a Second Language (ESL) instruction. The 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-hours 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 to its instructional program, the ELI administers The University of Akron Developed English Proficiency Test (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, email ua-eli@uakron.edu or call 330-972-7544.

Website: [English Language Institute](http://www.uakron.edu/eli)



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FirstEnergy Advanced Energy Research Center

The College of Engineering and the Department of Chemical and Biomolecular Engineering serve as the home for The FirstEnergy Advanced Energy Research Center. The University of Akron has created this research center to develop technology to generate efficient electric power with minimal carbon dioxide emissions. Specifically, the center will research and create ways to capture carbon dioxide, which then would be used at fossil-fueled power plants, and to develop coal-based fuel cells for commercial use.

Website: [FirstEnergy Advanced Energy Research Center](#)



Fisher Institute for Professional Selling

Established through a gift from Ronald and Diane Fisher in 1992, the Ronald R. and Diane C. Fisher Institute for Professional Selling has enabled The University of Akron to establish one of only 13 certified, professional sales programs in the world. It is currently number three in the United States and Canada.

The mission of the Fisher Institute of Professional Selling is: to enhance the image of the sales profession and to promote professional selling and sales management as rewarding lifelong careers; to provide world-class, high-quality excellence in sales education through sales major, minor and certificate programs; 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 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 other majors). Visit the website at www.uakron.edu/cba/fisher for more information.

Website: [Fisher Institute for Professional Selling](http://www.uakron.edu/cba/fisher)



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Gary L. and Karen S. Taylor Institute for Direct Marketing

The Gary L. and Karen S. Taylor Institute for Direct Marketing is the future of direct interactive marketing. With dedicated faculty and staff and a state-of-the-art facility featuring laboratories in telecommunications, TV infomercials, direct response, eMarketing and marketing analytics, the Taylor Institute is able to provide students with leading-edge skills and practical experience.

For more information, call 330-972-7110 or visit www.uakron.edu/cba/taylor.

Website: [Gary L. and Karen S. Taylor Institute for Direct Marketing](http://www.uakron.edu/cba/taylor)



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H. Kenneth Barker Center for Economic Education

This center exists to improve the economic literacy of individuals to help them function competently as citizens, producers and consumers. It 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.

Website: [H. Kenneth Barker Center for Economic Education](#)



Institute for Biomedical Engineering Research

This institute was established in 1979 to promote interdisciplinary studies in the rapidly growing areas of knowledge, which overlap the fields of biology and medicine, on the one hand, and engineering and the physical sciences, on the other. It conducts seminars, courses and degree programs in biomedical engineering in association with the College of Engineering and individual departments.

In addition to its research and educational functions, the institute provides a research service to local hospitals and industry, as well as to private and government agencies. The premise for this program is that the combined resources of the University, Northeastern Ohio Universities College of Medicine and affiliated organizations will often permit more cost-effective solutions than would be possible by an individual or group doing the research independently.

The work of the institute is carried out by faculty of the Department of Biomedical Engineering in association with "members" selected from the faculties of The University of Akron and Northeastern Ohio Universities College of Medicine, as well as from the ranks of area physicians, engineers and scientists. The institute and the department occupy the third floor of the Olson Research Center on the north edge of the campus.

Website: [**Institute for Biomedical Engineering Research**](#)



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Institute for Global Business

The University of Akron received special funding from the State of Ohio to expand its offerings of undergraduate and graduate degree programs in international business. Thus, the College of Business Administration created the Institute for Global Business, which coordinates both credit and noncredit programs in international business. The institute also develops short courses and seminars designed to help improve the international competitiveness of business organizations. For more information, call 330-972-6230.

Website: [**Institute for Global Business**](#)



Institute for Life-Span Development and Gerontology

The Institute for Life-Span Development and Gerontology, founded in 1976, coordinates multidisciplinary credit certificate programs in gerontology at the undergraduate and graduate levels.

The Institute of Life-Span Development and Gerontology has grown into a campus-wide program involving more than 63 faculty in more than 20 different departments, representing six colleges. Students in the certificate programs carry out field placements at numerous community service settings. There are more than 40 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 also served as a major site for the Rehabilitation Research and Training Center Consortium on Aging and Development Disabilities involving seven universities in six states.

The Institute houses the Tri-County Senior Olympics.

Website: [**Institute for Life-Span Development and Gerontology**](#)



Institute for Teaching and Learning

Mission Statement: 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.

ITL's Responsibilities

- Assisting faculty with service learning and undergraduate research experiences
- Consulting with colleges, departments and individual faculty on teaching, learning, evaluation and assessment issues
- Development and providing targeted professional development activities, information-gathering and sharing
- Documenting, publicizing and celebrating teaching and learning innovation and excellence
- 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 www.uakron.edu/itl or contact the Institute at 330-972-2574.

Website: [Institute for Teaching and Learning](#)



Institute of Bioscience and Social Research

The Institute of Bioscience and Social Research, housed in the Buchtel College of Arts and Sciences at The University of Akron, is dedicated to the "creation of knowledge and application of research that benefits humankind." The Institute (formerly known as the Institute of Health and Social Policy) was renamed in June 2011 as part of the initial phase of a redesign of its mission and focus.

Since its opening in 1999, the Institute's staff and researchers have brought in more than \$35 million in grants and contracts. In 2001, IHSP's internationally known researchers received the largest grant in The University of Akron's history to that point—a \$13.7 million dollar grant from The Robert Wood Johnson Foundation.

As the needs of the region as well as those of the University of Akron and its faculty have evolved over this time period, so has the Institute. During 2011-12 the Institute has undergone a number of changes, as reflected in its name change. In keeping with its focus on benefiting humankind, the Institute's commitment is twofold. First, we strive to support UA's expanding research base in the biosciences and social research by providing infrastructure upon which UA researchers can build. In addition, the Institute continues to provide seed funding to researchers to energize the expansion of funded research benefiting society. Second, we are committed to connecting cutting-edge researchers in the biosciences and social sciences with community partners in need of their expertise. The Institute takes pride in the invaluable staff and dedicated researchers who have contributed to its founding and growth, and encourage all those who seek to benefit humankind through the application of research to join us as we build the future of a new, even better, Institute.

Website: [Institute of Bioscience and Social Research](#)



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Website: [Institute of Bioscience and Social Research](#)



Institute of Polymer Science and Polymer Engineering

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, FTIR, 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. 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 for the Applied Polymer Research Center provide contract technical service for industry and government.

Website: [Institute of Polymer Science and Polymer Engineering](#)



The University of Akron
Undergraduate Bulletin

Intellectual Property Law and Technology Center

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 implemented a new Master of Law in Intellectual Property Program.

Website: [Intellectual Property Law and Technology Center](#)



Microscale Physiochemical Engineering Center (MPEC)

The Microscale Physiochemical Engineering Center (MPEC) was established in 1996 by faculty with a common research interest in materials composed of very small particles. These small particles occur, for example, in heterogeneous catalysts, fluid/solid separations, paper-pulp processing, soil remediation, wastewater 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 hosts an annual conference, promotes networking, provides a forum for industrial-university cooperation and serves a consortium of industrial sponsors for fundamental and applied research in microscale physiochemical engineering.

Website: [Microscale Physiochemical Engineering Center \(MPEC\)](#)



Nursing Center for Community Health

The Center for Nursing is a part of The University of Akron's College of Nursing. It is an education and practice center for College of Nursing faculty and students as well as faculty and students from other health care disciplines on campus.

The Center for Nursing opened in 1982 as one of the first academic nurse managed centers in the United States. College of Nursing faculty and students provide non-emergency, episodic health care and health education to community residents who do not have health insurance.

Website: [**Nursing Center for Community Health**](#)



Nutrition Center

The University of Akron Nutrition Center is a comprehensive regional 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 our surrounding community. The Center serves as an educational resource for students and the community, provides nutrition services and conducts research in sports nutrition, chronic disease treatment, wellness and disease prevention, nutrition information technology, food safety and sanitation and community nutrition.

Website: [Nutrition Center](#)



The University of Akron
Undergraduate Bulletin

Ray C. Bliss Institute of Applied Politics

The Ray C. Bliss Institute of Applied Politics is a public education and research adjunct of Buchtel College of Arts and Sciences. The broad purposes of the institute, in keeping with the career of its namesake, Ray C. Bliss, are: to give all citizens, and particularly students, an opportunity to learn how to become active and competent in political 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.

Website: [Ray C. Bliss Institute of Applied Politics](#)



The University of Akron Archival Services

The University of Akron Archival Services collects, preserves, and provides access to materials which have lasting historical or other research interest and which relate primarily to the University of Akron or to northeastern Ohio. The archives include two major divisions. University Archives contains historical materials by and about the University of Akron and its predecessor, Buchtel College, dating back to its founding in 1870 including issues of the yearbook, the student newspaper, bulletins, graduation programs, and office records. Regional history materials include historical records such as personal papers and records of local governments, businesses, labor unions, and civic organizations relating to northeastern Ohio with a focus on Akron and Summit County. Among the regional history collections are those pertaining to the rubber industry, canals, and lighter-than-air-flight. The Archives also houses other special collections including rare books and the B-26 Marauder Archives.

Website: [The University of Akron Archival Services](#)



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 offering all levels of Fire Classes at the Medina County University Center.

Website: [Training Center for Fire and Hazardous Materials](#)



The University of Akron
Undergraduate Bulletin

Training Center for Law Enforcement and Criminal Justice

The Training Center for Law Enforcement and Criminal Justice provides basic peace officer training academies, police refresher training, firearms requalification and in-service seminars.

Website: [Training Center for Law Enforcement and Criminal Justice](#)



The University of Akron
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University of Akron Magnetic Resonance Center (UA/MRC)

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, electron paramagnetic resonance, and the expertise of technical staff with experience in using these instruments for problem solving in chemistry, biological sciences, polymer science and 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.

Website: [University of Akron Magnetic Resonance Center \(UA/MRC\)](#)



The University of Akron
Undergraduate Bulletin

William and Rita Fitzgerald Institute for Entrepreneurial Studies

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 was established to promote the principles of free enterprise and encourage entrepreneurial spirit and practices both within the University's curriculum and throughout the business 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, call 330-972-8479.

Website: [William and Rita Fitzgerald Institute for Entrepreneurial Studies](#)



Workforce Development and Continuing Education

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

Workforce Development and Continuing Education at The University of Akron provides a wide range of educational, technical and research services that enhance the effectiveness and quality of workforce learning. In addition, Workforce Development and Continuing Education provides services that require the special expertise of the faculty and staff to better serve the economic and social development of Northeast Ohio. Grant monies may be available to help with costs.

Website: [Workforce Development and Continuing Education](#)



Course Numbering System

Each course at the University has two numbers. One designates the college and department of which it is part; one specifies the subject matter of the particular course. For instance:

3300:220 English Literature

In the above example, the first four digits of the number (3300) indicate the department. In this case, 3300 represents the Department of English. The second set of digits (220) 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.

An explanation of the course numbering system follows:

- 100-199 First-year-level courses
- 200-299 Second-year-level courses
- 300-399 Third-year-level courses
- 400-499 Fourth-year-level courses
- 500-699 Master's-level courses
- 600-799 J.D.-level courses
- 700-899 Doctoral-level courses

When approved 400-level undergraduate courses are taken for graduate credit, they are designated as 500-level courses. A student must apply for and be admitted to the Graduate School to receive graduate credit.

NOTE: Courses listed each term contain an additional three-digit number indicating the specific section(s) offered.

Courses of Instruction

- [Army ROTC](#) (1600)
- [Interdisciplinary Programs](#) (1800)
- [Summit College](#) (2000)
- [Buchtel College of Arts and Sciences](#) (3000, 7000-7920)
- [College of Engineering](#) (4100)
- [College of Education](#) (5000)
- [College of Business Administration](#) (6000)
- [College of Health Professionals](#) (7700, 8000)
- [College of Polymer Science and Polymer Engineering](#) (9821)
- [School of Law](#) (9200)

Army ROTC

- 1500 [Aerospace Studies](#)
- 1600 [Military Science](#)

Interdisciplinary Programs

- 1820 [Home-Based Intervention Therapy](#)
- 1870 [Honors College](#)
- 1880 [Medical Studies](#)

Summit College

- 2000 [Cooperative Education](#)
- 2010 [Developmental Programs](#)
- 2015 [Distinguished Study Program](#)
- 2020 [Associates Studies English](#)

- 2030 [Associates Studies Mathematics](#)
- 2040 [Associates Studies Social Sciences](#)
- 2100 [Individualized Study](#)
- 2200 [Early Childhood Development](#)
- 2220 [Criminal Justice Technology](#)
- 2230 [Fire Protection Technology](#)
- 2235 [Emergency Management](#)
- 2260 [Community Services Technology](#)
- 2280 [Hospitality Management](#)
- 2290 [Paralegal Studies](#)
- 2420 [Business Management Technology](#)
- 2430 Real Estate (Inactive)
- 2440 [Computer Information Systems](#)
- 2520 [Marketing and Sales Technology](#)
- 2540 [Office Admission](#)
- 2740 [Medical Assisting](#)
- 2760 [Radiologic Technology](#)
- 2770 [Surgical Technology](#)
- 2780 [Allied Health](#)
- 2790 [Respiratory Therapy](#)
- 2820 [General Technology](#)
- 2830 Electromechanical Service Technology (Inactive)
- 2840 Polymer Technology (Inactive)
- 2860 [Electronic Engineering Technology](#)
- 2870 [Automated Manufacturing Engineering Technology](#)
- 2880 [Manufacturing Engineering Technology](#)
- 2920 [Mechanical Engineering Technology](#)
- 2940 [Drafting and Computer Drafting Technology](#)
- 2980 [Surveying and Mapping](#)
- 2985 [Geographic and Land Information Systems](#)
- 2990 [Construction Engineering Technology](#)

Buchtel College of Arts and Sciences

- 3000 [Cooperative Education](#)
- 3001 [Women's Studies](#)
- 3002 [Pan African Studies](#)
- 3004 [International Development Sciences](#)
- 3006 [Institute for Lifespan Development and Gerontology](#)
- 3030 [English Language Institute](#)
- 3100 [Biology](#)
- 3110 [Biology/N.E.O.U.C.O.M**](#)
- 3150 [Chemistry](#)
- 3200 [Classics](#)
- 3230 [Anthropology](#)
- 3240 [Archaeology](#)
- 3250 [Economics](#)
- 3300 [English](#)
- 3350 [Geography and Planning](#)
- 3370 [Geology and Environmental Science](#)
- 3400 [History](#)
- 3450 [Mathematics](#)
- 3460 [Computer Science](#)
- 3470 [Statistics](#)
- 3490 [Engineering Applied](#)
- 3500 [Modern Languages](#)
- 3501 [Arabic](#)
- 3502 [Chinese](#)
- 3510 [Latin](#)
- 3520 [French](#)
- 3530 [German](#)

- 3550 [Italian](#)
- 3560 [Japanese](#)
- 3570 [Russian](#)
- 3580 [Spanish](#)
- 3600 [Philosophy](#)
- 3650 [Physics](#)
- 3700 [Political Science](#)
- 3750 [Psychology](#)
- 3850 [Sociology](#)
- 3980 [Public Administration and Urban Studies **](#)
- 7000 [New Media](#)
- 7100 [Art - Myers School of](#)
- 7400 [Family and Consumer Sciences](#)
- 7500 [Music - School of](#)
- 7510 [Music Organizations](#)
- 7520 [Applied Music](#)
- 7600 [Communication - School of](#)
- 7800 [Theatre](#)
- 7810 [Theatre Organizations](#)
- 7900 [Dance](#)
- 7910 [Dance Organizations](#)
- 7915 [Dance Somatics](#)
- 7920 [Dance Performance](#)

College of Engineering

- 4100 [General Engineering](#)
- 4200 [Chemical Engineering](#)
- 4250 [Corrosion Engineering](#)
- 4300 [Civil Engineering](#)
- 4400 [Electrical Engineering](#)
- 4450 [Computer Engineering](#)
- 4600 [Mechanical Engineering](#)
- 4700 [Mechanical Polymer Engineering](#)
- 4800 [Biomedical Engineering](#)
- 4900 [Aerospace Systems Engineering](#)

College of Education

- 5000 [Cooperative Education](#)
- 5100 [Educational Foundations](#)
- 5170 [Educational Administration \(K-12\)](#)
- 5190 [Educational Administration \(Higher Education\)](#)
- 5200 [Early Childhood Education](#)
- 5250 [Middle Level Education](#)
- 5300 [Secondary Education](#)
- 5400 [Postsecondary Technical Education](#)
- 5540 [General Education](#)
- 5500 [Curriculum & Instruction](#)
- 5550 [Physical Education](#)
- 5560 [Outdoor Education](#)
- 5570 [Health Education](#)
- 5600 [Educational Guidance and Counseling](#)
- 5610 [Special Education](#)

- 5620 [School Psychology](#)
- 5800 [Special Education Programs](#)

College of Business Administration

- 6000 [Cooperative Education](#)
- 6100 [General Business](#)
- 6140 [Finance for Non-Business Students](#)
- 6200 [Accountancy](#)
- 6300 [Entrepreneurship](#)
- 6400 [Finance](#)
- 6500 [Management](#)
- 6600 [Marketing](#)
- 6700 [Professional**](#)
- 6800 [International Business](#)

College of Health Professionals

- 7700 [Speech-Language Pathology and Audiology](#)
- 7750 [Social Work](#)
- 7760 [Nutrition and Dietetics](#)
- 8000 [Cooperative Education](#)
- 8200 [Nursing](#)
- 8300 [Master of Public Health](#)

College of Polymer Science and Polymer Engineering

- 9821 [Polymer Science and Polymer Engineering](#)
- 9841 [Polymer Engineering](#)
- 9871 [Polymer Science](#)

School of Law

- 9200 [Law](#)

**

Graduate-level courses only. See Graduate Bulletin.



Transfer Assurance Guide (TAG) Approved Courses

The University of Akron has established more than 130,000 courses equivalencies with other colleges and universities in Ohio and across the United States. As part of the University System of Ohio, the University has more than 198 Transfer Assurance Guide (TAG) approved courses which serve as a resource to students seeking to identify equivalent, or equal, TAG-approved courses at Ohio public institutions of higher education. A TAG course is unique in that it has been matched to a set of learning outcomes (identified by an Ohio articulated number code) in a specific academic subject area. Approved TAG courses carry the guarantee that the courses and their credits will transfer and apply toward the major at any of Ohio's public institutions, provided the course was taken when the courses were determined to be equivalent. The guarantee began in Fall 2005 with the creation of TAGs for 38 majors.

Arts & Humanities

- Art History
- Dance
- English
- Studio/Fine Arts
- Music
- Philosophy
- Theatre

Business

Communication

- Communication Studies
- Journalism
- Public Relations/Advertising
- Telecommunication

Education

Engineering

- Aerospace, Agricultural, Civil and Mechanical Engineering
- Bioengineering, Biomedical Engineering
- Chemical Engineering
- Computer, Electrical Engineering
- Industrial Engineering

Engineering Technology

- Civil/Construction Engineering Technology
- Electrical Engineering Technology
- Mechanical Engineering Technology

Health

- Dietetics
- Health Information Management
- Medical Laboratory
- Nursing

Science & Mathematics

- Biology
- Chemistry
- Geology
- Mathematics
- Physics

Social & Behavioral Sciences

- Anthropology
- Criminal Justice
- Economics
- Geography
- History
- Political Science
- Psychology
- Social Work
- Sociology

Foreign Languages

- Competency Year 1
- Competency Year 2

Students are encouraged to meet with an academic adviser for questions about TAG courses and equivalent course credits.



The University of Akron
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ROTC

- [Aerospace Studies \(1500\)](#)
- [Military Science \(1600\)](#)



Aerospace Studies (1500)

113	THE FDTN OF THE US AIR FORCE I	<i>1 credits</i>
Survey course introducing the U.S. Air Force and ROTC. Officership and military customs and courtesies are discussed. Foundations of Air Force communication are covered.		
114	THE FDTN OF THE US AIRFORCE II	<i>1 credits</i>
Survey course covering the origin and organization of the Air Force. Selected topics contributing to an understanding of the Air Force are covered.		
115	LEADERSHIP LABORATORY	<i>1 credits</i>
Prepares an individual to undertake a broad range of technical tasks. Optional for academic credit; Mandatory for Air Force ROTC credit for scholarship/commissioning.		
253	EVOL OF US AIRFRC AIR&SPCPOW I	<i>1 credits</i>
Survey course examining air and space power from an historical perspective. Course covers early flight and World War I to the Korean War and ICBMS.		
254	EVOL OF US AIRFRC AIR&SPCPOW II	<i>1 credits</i>
Survey course examining air and space power from the Vietnam War to the Gulf War plus a look at the Air Force of the future.		
255	LEADERSHIP LABORATORY	<i>1 credits</i>
Prepares an individual to undertake a broad range of technical tasks. Optional for academic credit; Mandatory for Air Force ROTC credit for scholarship/commissioning.		
303	LEADERSHIP STUDIES I	<i>3 credits</i>
Prerequisite: permission of instructor. Study of leadership, professional knowledge and communication skills required for an Air Force officer. The roles of a leader as supervisor and counselor are discussed.		
304	LEADERSHIP STUDIES II	<i>3 credits</i>
Prerequisite: permission of instructor. Study of quality management fundamentals and communication skills for the Air Force officer. The Air Force personnel evaluation system and military ethics are discussed.		
305	LEADERSHIP LABORATORY	<i>1 credits</i>
Prepares an individual to undertake a broad range of technical tasks. Optional for academic credit; Mandatory for Air Force ROTC credit for scholarship/commissioning.		
453	DEFENSE STUDIES I	<i>3 credits</i>
Prerequisite: permission of instructor. Examines political, economic and social constraints on national security and defense structure. The role of the military, including joint operations and regional defense, are discussed.		
454	DEFENSE STUDIES II	<i>3 credits</i>
Prerequisite: permission of instructor. Roles of the military, regional defense, current Air Force issues, and other topics relevant to preparing an Air Force officer for active duty are covered.		
455	LEADERSHIP LABORATORY	<i>1 credits</i>
Prepares an individual to undertake a broad range of technical tasks. Optional for academic credit; Mandatory for Air Force ROTC credit for scholarship/commissioning.		



Military Science (1600)

100	LEADERSHIP & PERSONAL DEVELOP	<i>2 credits</i>
Study of the mission of the Army, the principles of basic military leadership and management, land navigation, and opportunities in the Army. A geographical and cultural examination of the countries where U.S. soldiers are located. Leadership laboratory required. No military obligation incurred.		
101	INTRO: TACTICAL LEADERSHIP	<i>2 credits</i>
Study of the principles and techniques of military leadership and human resource management. Introduction to drill and ceremony, small unit tactics, briefing techniques, and public speaking. Leadership laboratory required. No military obligation incurred.		
110	LEADERSHIP & PERSONAL DEV LAB	<i>1 credits</i>
Students will participate in labs as a member of a cadet squad, learning to work with new people and gaining confidence through engaging in new and challenging situations that reinforce classroom instruction.		
111	INTRO: TACTICAL LEADERSHIP LAB	<i>1 credits</i>
Students will participate in labs as a member of a cadet squad, learning to work with new people and gaining confidence through engaging in new and challenging situations that reinforce classroom instruction. This Laboratory session will focus more on tactical training.		
200	INNOVATIVE TEAM LEADERSHIP	<i>2 credits</i>
Study of the principles of war and the art of leadership. Basic military skills taught through practical applications in marksmanship, map reading, first aid, and drill and ceremony. Leadership laboratory required. No military obligation incurred.		
201	FOUNDATIONS OF TACTICAL LDRSH	<i>2 credits</i>
Study and application of the Leadership Development Program (LDP). Introduction to tactics, patrolling, and basic military skills. Leadership laboratory required. No military obligation incurred.		
210	INNOVATIVE TEAM LEADERSHIP LAB	<i>1 credits</i>
In their second year of military Science, students will begin to have a bigger leadership role within the ROTC organization and will participate in labs as a team leader. They will be responsible for the readiness and accountability of the first year cadets and are expected to begin to show confidence in leading others.		
211	FOUNDTS OF TACTICAL LDRSH LAB	<i>1 credits</i>
Students will have a bigger leadership role within the ROTC organization and will participate in labs as a team leader. They will be responsible for the readiness and accountability of the first year cadets and are expected to begin to show confidence in leading others and in conducting tactical exercises.		
300	ADAPTIVE TEAM LEADERSHIP	<i>3 credits</i>
Prerequisites: 100, 101, 200, 201 and/or permission. Study in the application of military tactics, military history, military briefing techniques and equipment. Practical work with operations orders and planning, organizing, and executing training. Leadership laboratory required.		
301	LEADERSHIP UNDER FIRE	<i>3 credits</i>
Prerequisite: 300 or permission. Study of leadership, leadership counseling and tactics at the small-unit level. Practical work with land navigation, marksmanship training, squad and platoon movement, and battlefield survival. Leadership laboratory required.		
310	ADAPTIVE TEAM LEADERSHIP LAB	<i>1 credits</i>
Prerequisite: 211. Corequisite: 300. In their third year, as students enter the ROTC Advanced course, students will take on a much larger leadership role; responsible for squads and platoons of cadets as well as training them on the subject matter of each lab. They learn to motivate, instill confidence, and take responsibility for the quality of the training and activities of the labs.		
311	LEADERSHIP UNDER FIRE LAB	<i>1 credits</i>
Prerequisite: 310. Corequisite: 301. In their third year, as students enter the ROTC Advanced course, students will take on a much larger leadership role; responsible for squads and platoons of cadets as well as training them on the subject matter of each lab. They learn to motivate, instill confidence, and take responsibility for the quality of the training and activities of the labs.		
400	DEVELOPING ADAPTIVE LEADERS	<i>3 credits</i>
Prerequisites: 300, 301, or permission. Intensive investigation of the leadership process to include applicatory work emphasizing officer ethics, duties, and responsibilities. Management and supervisory skills. Practical experience with the Leadership Development Program (LDP). Leadership laboratory required.		
401	LEADERSHIP IN A COMPLEX WORLD	<i>3 credits</i>
Prerequisites: 300, 301, or permission. Study of officer leadership and managerial responsibilities. Study of Army command organization and procedures, training management, personnel system, Uniform Code of Military Justice, and continued emphasis on counseling and human relations. Leadership laboratory required.		

410	DEVELOPNG ADAPTIVE LEADERS LAB	<i>1 credits</i>
Prerequisite: 311. Corequisite: 400. Senior ROTC students are responsible for planning, managing, and supervising leadership labs for the entire cadet Battalion, as well as acquiring the necessary resources and equipment required for training		
411	LDRSHP IN A COMPLEX WORLD LAB	<i>1 credits</i>
Prerequisite: 410. Corequisite: 401. Senior ROTC students are responsible for planning, managing, and supervising leadership labs for the entire cadet Battalion, as well as acquiring the necessary resources and equipment required for training. They will later utilize the experience gained in leading cadets to aid them in leading United States Army Soldiers.		
490	ST: MILITARY SCIENCE	<i>1-3 credits</i>
Prerequisite: permission. (May be repeated for a maximum of six credits) Content varies with special topics. Texts to be selected according to topic and will use relevant library periodicals and journals. Existing library resources are adequate to support the course. Basic Camp, Advanced Camp, Airborne, and other specialty schools qualify for course credit.		



The University of Akron
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Interdisciplinary Programs

- [Home-Based Intervention Therapy \(1820\)](#)
- [Honors College \(1870\)](#)
- [Medical Studies \(1880\)](#)



Home-Based Intervention Therapy (1820)

403	HBI THEORY	<i>3 credits</i>
Prerequisite: Admission to the Certificate Program. Overview of home based intervention to include philosophy and description of this programming as well as assessment of family, their home and community environment.		
404	HBI TECHNIQUES & PRACTICE	<i>3 credits</i>
Prerequisite: 403. Provides intervention techniques and skill areas required for home-based intervention and learning opportunities for matching techniques with specific family problems.		
405	HBI INTERNSHIP	<i>3-5 credits</i>
Prerequisite: 404. Gives students the opportunity to apply knowledge of home-based intervention in actual delivery process working with families in their homes under direct supervision of trained, experienced home based intervention therapists.		
503	HBI THEORY	<i>3 credits</i>
Prerequisite: Admission to Certificate Program. Overview of home-based intervention to include philosophy and description of this programming as well as assessment of family, their home and community environment.		
504	HBI TECHNIQUES & PRACTICE	<i>3 credits</i>
Prerequisite: 503. Provides intervention techniques and skill areas required for home-based intervention and learning opportunities for matching techniques with specific family problems.		
505	HBI INTERNSHIP	<i>3-5 credits</i>
Prerequisite: 504. Gives students the opportunity to apply knowledge of home-based intervention in actual delivery process working with families in their homes under the direct supervision of trained, experienced home-based intervention therapists.		



Honors College (1870)

250	HONORS COLLOQUIUM: HUMANITIES	<i>2 credits</i>
Prerequisite: admission to University Honors College. Interdisciplinary colloquium on important issues in humanities.		
260	HONORS COLLOQ: SOCIAL SCIENCE	<i>2 credits</i>
Prerequisite: admission to University Honors College. Interdisciplinary colloquium on important issues in social sciences.		
270	HONORS COLLOQ: NATURAL SCIENCE	<i>2 credits</i>
Prerequisite: admission to University Honors College. Interdisciplinary colloquium on important issues in natural sciences.		
350	HONORS COLLOQ: HUMANITIES	<i>2 credits</i>
Prerequisite: admission to University Honors College. Interdisciplinary colloquium on important issues in humanities.		
360	HONORS COLLOQ: SOCIAL SCIENCE	<i>2 credits</i>
Prerequisite: admission to University Honors College. Interdisciplinary colloquium on important issues in social sciences.		
370	HONORS COLLOQ: NATURAL SCIENCE	<i>2 credits</i>
Prerequisite: admission to University Honors College. Interdisciplinary colloquium on important issues in natural sciences.		
450	HONORS COLLOQUIUM: HUMANITIES	<i>2 credits</i>
Prerequisite: admission to University Honors College. Interdisciplinary colloquium on important issues in humanities.		
460	HONORS COLLOQ: SOCIAL SCIENCE	<i>2 credits</i>
Prerequisite: admission to University Honors College. Interdisciplinary colloquium on important issues in social sciences.		
470	HONORS COLLOQ: NATURAL SCI	<i>2 credits</i>
Prerequisite: admission to University Honors College and Junior standing. Interdisciplinary colloquium on important issues in natural sciences.		



Medical Studies (1880)

201

MEDICAL SEMINAR & PRACTICUM I

3 credits

Prerequisites: 3100:191. Provides field experiences in health-care delivery in geographic area served by Northeastern Ohio Universities College of Medicine and The University of Akron. Student directed in supervised roles of professional and paraprofessional in meeting health-care needs of community. Open to first-year student in Phase 1 of B.S./M.D. program.

310

MEDICINE & THE HUMANITIES

3 credits

Medical history, literature, and ethics from the perspective of the Humanities, with readings from original sources and literary works on medical subjects.



Summit College

- [Cooperative Education \(2000\)](#)
- [Developmental Programs \(2010\)](#)
- [Distinguished Study Program \(2015\)](#)
- [Associates Studies English \(2020\)](#)
- [Associates Studies Mathematics \(2030\)](#)
- [Associates Studies Social Sciences \(2040\)](#)
- [Individualized Study \(2100\)](#)
- [Early Childhood Development \(2200\)](#)
- [Criminal Justice Technology \(2220\)](#)
- [Fire Protection Technology \(2230\)](#)
- [Emergency Management \(2235\)](#)
- [Community Services Technology \(2260\)](#)
- [Hospitality Management \(2280\)](#)
- [Paralegal Studies \(2290\)](#)
- [Business Management Technology \(2420\)](#)
- [Real Estate \(2430\)](#)
- [Computer Information Systems \(2440\)](#)
- [Marketing and Sales Technology](#)
- [Office Admission \(2540\)](#)
- [Medical Assisting \(2740\)](#)
- [Surgical Technology \(2770\)](#)
- [Allied Health \(2780\)](#)
- [Respiratory Therapy \(2790\)](#)
- [General Technology \(2820\)](#)
- [Electromechanical Service Technology](#)
- [Polymer Technology \(2840\)](#)
- [Electronic Engineering Technology \(2860\)](#)
- [Automated Manufacturing Engineering Technology \(2870\)](#)
- [Manufacturing Engineering Technology \(2880\)](#)
- [Mechanical Engineering Technology \(2920\)](#)
- [Drafting and Computer Drafting Technology \(2940\)](#)
- [Surveying and Mapping \(2980\)](#)
- [Geographic and Land Information Systems \(2985\)](#)
- [Construction Engineering Technology \(2990\)](#)
- [Radiologic Technology \(2760\)](#)



Cooperative Education (2000)

201	COOPERATIVE EDUCATION	<i>0 credits</i>
(May be repeated) Prerequisite: cooperative education students only. Work experience in business, industry or governmental agency. Comprehensive performance evaluation and written report required.		
301	COOPERATIVE EDUCATION	<i>0 credits</i>
(May be repeated) Prerequisite: cooperative education students only. Work experience in business, industry or governmental agency. Comprehensive performance evaluation and written report required.		



Developmental Programs (2010)

042	BASIC WRITING	<i>0 load hours**</i>
Provides intensive practice in the process of writing, in sentence structure and punctuation, and in correct written expression. Upon successful completion of Basic Writing, the student should be prepared to enter English (2020:121), or English Composition I (3300:111). Writing Lab hours are required.		
050	BASIC MATHEMATICS I	<i>0 load hours**</i>
Prerequisite: Placement. An intensive review of arithmetic and an introduction to the concepts of elementary algebra. Emphasis is placed on developing learning strategies and controlling anxieties. Upon successful completion of Basic Mathematics I, the student should be prepared to enter Basic Mathematics II.		
052	BASIC MATHEMATICS II	<i>0 load hours**</i>
Prerequisite: Completion of 2010:050 (formerly 1020:050) with a grade of C or better or Placement. A brief review of arithmetic and intensive instruction in elementary algebra. Emphasis is placed on developing learning strategies and controlling anxieties. Upon successful completion of Basic Mathematics II, the student should be prepared to enter Business Mathematics (2420:170); Introduction to Technical Math (2020:130); Elements of Math I (2030:151); or Preparatory Math (3450:100).		
054	BASIC MATHEMATICS II SUPPORTED	<i>0 credits</i>
Prerequisites: 2010:050 and approval from Office of Accessibility. See Basic Mathematics II (2010:052). Double length class period allows supplemental instruction and assistance in beginning algebra. Emphasis on developing learning strategies and controlling anxieties.		
056	BASIC MATH II EXTENDED -PART A	<i>0 credits</i>
Prerequisite: 2010:050 and approval from Office of Accessibility. First half of a slower paced two-semester version of Basic Mathematics II (2010:052). Introduces elementary algebra, linear equations, polynomials, graphing, slope.		
057	BASIC MATH II EXTENDED -PART B	<i>0 credits</i>
Prerequisite: 2010:056 (Part A). Second half of a slower paced two-semester version of Basic Mathematics II (2010:052) covering factoring, rational expressions, radicals, and quadratic equations.		
060	COLLEGE READING	<i>0 load hours**</i>
Prerequisite: Placement. Designed to strengthen the basic comprehension skills needed for academic work, including recognition of main points and key supporting ideas, inferencing, summarizing, and vocabulary development. Upon satisfactory completion of College Reading, the student should be prepared to enter College Reading and Study Skills (1020:062). Lab hours are required.		
062	COLLEGE READING & STUDY SKILLS	<i>0 load hours**</i>
Prerequisite: College Reading (1020:060) or placement. Continued practice of comprehension strategies with emphasis on textbook reading, and implementation of effective study strategies such as note-taking, test-taking, and memory techniques. Upon successful completion of College Reading and Study Skills, the student should be prepared to apply reading and study strategies in college classes. Lab hours are required.		
064	APPL STDY STRAT:	<i>0 load hours**</i>
Corequisite: Selected General Education Courses taken concurrently. Designed to help students apply various study strategies to a specific course, such as psychology, sociology and others. Includes lecture and textbook analysis, memory techniques, and test-taking strategies. Lab hours are required.		
071	DEVELOPMENTAL CHEMISTRY	<i>0 load hours**</i>
Prerequisite: 2010:052 or 057 or equivalent with a grade of C or better. A mathematics review applied to chemistry and intensive instruction in principles of general chemistry. Emphasis is placed on developing learning strategies and controlling anxieties.		
299	ST: DEVELOPMENTAL PROGRAMS	<i>0 load hours**</i>
Instruction in one or more of the following basic skills: writing, reading, mathematics, and study skills. A combination of these skills may be presented with an overall theme such as "writing, reading and technology." See the current Schedule of Classes for course offerings.		
300	ST: BASIC MATH II SUPPORTED	<i>0 load hours**</i>
Prerequisite: Basic Mathematics I (2010:050) with a grade of C or better or Placement. A brief review of arithmetic and intensive instruction in elementary algebra. Emphasis is placed on developing learning strategies and controlling anxieties. Upon successful completion of Basic Mathematics II, the student should be prepared to enter Business Mathematics (2420:170); Introduction to Technical Math (2020:130); Elements of Math I (2030:151); or Intermediate Algebra (3450:100).		
301	ST: BASIC MATH II EXTD PART A	<i>0 load hours**</i>

Prerequisite: Basic Mathematics I (2010:050) with a grade of C or better or Placement. First half of an extended course. A brief review of arithmetic and intensive instruction in elementary algebra. Emphasis is placed on developing learning strategies and controlling anxieties. Upon successful completion of Basic Mathematics II, the student should be prepared to enter Business Mathematics (2420:170); Introduction to Technical Math (2020:130); Elements of Math I (2030:151); or Intermediate Algebra (3450:100).



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Distinguished Study Program (2015)

150 DISTINGSHED STUDENT COLLOQ *2 credits*

See department for course description.



Associates Studies English (2020)

120	WRITING AND EDITING	<i>1 credits</i>
Examination of the editing process of writing. Focuses on developing a clear, effective, and correct professional writing style appropriate for academic and business documents.		
121	ENGLISH	<i>4 credits</i>
English composition focused on inventive writing, essay structure, process, consideration of strength, source of evidence, and citation; and development options leading to persuasion and argument.		
222	TECHNICAL REPORT WRITING	<i>3 credits</i>
Prerequisite: 121, 3300:111 or equivalent. Prepares student to write the types of reports most often required of technicians, engineers, and scientists. Includes types of reports, memoranda, and letters; techniques of research, documentation and oral presentations.		
224	WRITING FOR ADVERTISING	<i>4 credits</i>
Prerequisite: 121, 3300:111 or equivalent. Introduction to the copywriter's role in print, broadcast, and Web advertising. Study of advertising language; practice in writing advertisements and producing collateral copywriting materials.		
226	ELCTR N REF RES COMPUTER AGE	<i>3 credits</i>
Prerequisites: 2020:121 or 3300:111. Designed for individuals to broaden their scope and understanding of various electronic research techniques. Study, evaluation, and use of current and emerging technologies will be examined.		
227	WRITING FOR WORLD WIDE WEB	<i>3 credits</i>
Prerequisites: 121 or equivalent (3300:111), familiarity with Internet (or attend Computer Center training seminar) knowledge of word processing software. Introductory course examines spoken and written contexts merging into one "writing space"; provides writing theory and practice for effective e-mail, newsgroup, chat, and web site writing.		
290	ST: ASSOCIATE STUDIES	<i>1-4 credits</i>
(May be repeated with a change in topic) Prerequisite: permission. Selected topics on subject areas of interest in associate studies.		



Associates Studies Mathematics (2030)

130	MATH FOR ALLIED HEALTH	<i>3 credits</i>
Prerequisite: Completion of 2010:052 or 057 with a grade of C or better or placement test. The real number system, systems of measurement, conversions, linear equations, factoring, quadratic equations, graphing, linear systems, organizing data, averages, standard deviation, the normal distribution.		
151	TECHNICAL MATHEMATICS I	<i>2 credits</i>
Prerequisite: Completion of 2010:052 or 057 with a grade of C or better or placement test. Fundamental concepts and operations, functions, graphs, factoring and algebraic fractions, and quadratic equations.		
152	TECHNICAL MATHEMATICS II	<i>2 credits</i>
Prerequisite: 151 with a grade of C- or better, or placement test. Variation, equations of lines, Cramer's rule, right triangle trigonometry, oblique triangles, complex numbers.		
153	TECHNICAL MATHEMATICS III	<i>2 credits</i>
Prerequisite: 152 or equivalent with a grade of C- or better, or placement test. Factoring, algebraic fractions, exponents and radicals, equations with radicals, equations in quadratic form, functions, their properties and graphs, exponential and logarithmic functions, radian measure.		
154	TECHNICAL MATHEMATICS IV	<i>3 credits</i>
Prerequisite: 153 or equivalent with a grade of C- or better, or placement test. Functions and their graphs, polynomial and rational functions, polynomial equations, graphs of trigonometric functions, trigonometric identities and equations, analytic geometry, complex numbers in polar form.		
161	MATH FOR MODERN TECHNOLOGY	<i>4 credits</i>
Prerequisite: 2010:052 or placement by advisor. Lines, linear regression, sets, counting, basic probability, basic statistics, binomial and normal distributions, mathematics of finance, symbolic logic, arguments, logic circuits.		
255	TECHNICAL CALCULUS I	<i>3 credits</i>
Prerequisite: 154 or equivalent with a grade of C- or better, or placement test. The derivative, applications of the derivative, derivatives of the trigonometric, logarithmic and exponential functions. Integration by antidifferentiation.		
260	ADVANCED TRIGONOMETRY	<i>2 credits</i>
Prerequisite: 2030:153 or equivalent with a grade of C- or better, or placement test. Horizontal circular curves, vertical curves, and spherical triangles.		
290	ST: ASSOC STUDIES MATH	<i>1-4 credits</i>
(May be repeated with a change in topic) Prerequisite: permission. Selected topics on subject areas of interest in associate studies.		
345	TECHNICAL DATA ANALYSIS	<i>2 credits</i>
Prerequisite: 154 or equivalent with a grade of C- or better, or placement test. Data summarization including graphic representation, numerical measures, introduction to probability, confidence intervals and hypothesis testing.		
356	TECHNICAL CALCULUS II	<i>3 credits</i>
Prerequisite: 255 or equivalent with a grade of C- or better, or placement test. Methods and applications of integration, first and second order differential equations and applications, series expansion, Laplace transform, partial derivatives, and double integrals.		
480	ADV T: TECHNICAL MATHEMATICS	<i>2 credits</i>
Prerequisite: 255 or equivalent with a grade of C- or better, or placement test. Matrices, Introduction to Series, Partial Derivatives, Least Squares Adjustments, Topics in Astronomy, and Coordinate Systems.		



Associates Studies Social Sciences (2040)

230	TECHNICAL CAREER SEARCH SKILLS	<i>1 credits</i>
Students will develop specific skills in resume writing, interviewing, self-directed job search, networking, researching employers, as well as learning the fundamentals of the job market.		
240	HUMAN RELATIONS	<i>3 credits</i>
Examination of principles and methods which aid in understanding the individual's response to society and the relationship between society and individuals.		
241	TECHNOLOGY & HUMAN VALUES	<i>2 credits</i>
Examination of impact of scientific and technical change upon people, their values and institutional arrangements. Topics include biomedical technology, automation, economic growth, natural environment and technology and quality of life.		
242	AMERICAN URBAN SOCIETY	<i>3 credits</i>
Multidisciplinary treatment of urban processes and problems. Concerns historical, political, social, economic and other environmental forces which impact the individual in an urban setting.		
243	CONTEMPORARY GLOBAL ISSUES	<i>3 credits</i>
Multidisciplinary approach to global social problems. Examines cultural, political, and economic issues in developed and developing nations. Emphasizes technology's impact and global interrelationships.		
244	DEATH & DYING	<i>2 credits</i>
Examination of a wide range of topics related to death and dying. Emphasis is placed on understanding and coping with death and dying.		
247	SURVEY OF BASIC ECONOMICS	<i>3 credits</i>
Introduction to economic analysis and issues designed for the student taking only one course in economics. Coverage includes economic systems, exchange, money and banking, national income, employment, fiscal policy and current domestic economic problems.		
251	HUMAN BEHAVIOR AT WORK	<i>3 credits</i>
Examination of relationship between human behavior and the work organization. Emphasis on how contemporary organizations are changing and what makes individuals within their organizations more effective.		
254	THE BLACK EXPERIENCE 1619-1877	<i>2 credits</i>
Prerequisite: 2020:121 or 3300:112. Examination of the black American including origins, historical achievements and striving to achieve first-class citizenship in America from 1619 to 1877.		
256	DIVERSITY IN AMERICAN SOCIETY	<i>2 credits</i>
Prerequisites: 2020:121, or 3300:112 or equivalent. Survey course covering demographic, social, economic, political, and educational realities of diversity in 21st Century. Focus on diversity and unity, historical overview.		
257	THE BLACK EXPERIENCE 1877-1954	<i>2 credits</i>
Prerequisites: 2020:121 or 3300:112. Examines the experiences of Blacks following Reconstruction. Topics to include: Separate but Equal doctrine, segregation, integration, and the achievements of Blacks in American society.		
258	BLACK EXPERIENCE 1954-PRESENT	<i>2 credits</i>
Prerequisites: 2020:121 or 3300:112. Examines the relationship of the civil rights movement, Black nationalism, integration, segregation, and desegregation as strategies to ameliorate discrimination and achieve equal opportunity.		
271	INTRODUCTION TO LABOR STUDIES	<i>3 credits</i>
Overview of Trade Unionism in America from 18th Century to present with emphasis on factors affecting growth of unions. Rise of industrial unionism as alternative to craft unions. Trade union movements in other countries examined for their influence on American unions.		
272	COLLECTIVE BARGAINING I	<i>3 credits</i>
Review of collective bargaining dealing with wages, fringes and working conditions. Examination of contract content. Development of bargaining proposals. Skills required in negotiations and union/management responsibilities to community in collective bargaining. Strikes and impasse resolution.		
273	LEGAL FRMWK:COLLECT BARGAINING	<i>3 credits</i>
Legal framework within which collective bargaining process takes place. Rights of employees, union and employer under federal and state laws discussed in context of organizing, election and bargaining.		
274	LABOR LEGISLA & ECON SECURITY	<i>3 credits</i>
Prerequisite: 273 or permission. Federal and state legislation governing employment conditions and standards. Includes minimum wage, health and safety, unemployment compensation, TDI, civil rights and anti-discrimination, social security, labor management reporting, and disclosure.		
275	COLLECTIVE BARGAINING II	<i>3 credits</i>

Prerequisite: 272. Mechanics and skills of formal grievance procedures in industrial, craft and public setting. Investigation, record keeping and presentation of grievance, as well as study of arbitration process and preparation and presentation of arbitration cases.

276	OCCUP HEALTH & SAFETY STANDARD	<i>3 credits</i>
Prerequisite: 273. Examination of William/Steiger Occupational Safety and Health Act and rights and responsibilities conferred on unions by this act. Includes not only workings of the law but also hazards recognition study.		
277	FAIR PRACTICES & EQUAL OPPORTU	<i>2 credits</i>
Prerequisite: 271. Rights and responsibilities of unions and union members as related to Title VII of the Civil Rights Act, the Voting Rights Act and development of EEOC.		
278	UNION LEADERSHIP	<i>2 credits</i>
Prerequisite: 271. Specific skills related to administration of local unions structure and duties and responsibility of officers.		
279	PROBLEMS IN LABOR STUDIES	<i>3 credits</i>
Prerequisite: final semester or permission. Each student required to combine field research and classroom time to identify, explore and propose an approach to a current problem in labor/management relations.		
280	WAGE ADMINISTRATION	<i>3 credits</i>
Prerequisites: 271, 272 or 273. Wage and salary determination: structure of wages, salaries and fringe benefits and use of merit and incentive plans. Methods of compensation analyzed. Impact of federal and state laws governing the payment of wages.		
281	PUBLIC SECTOR LABOR RELATIONS	<i>3 credits</i>
Prerequisite: 271. Analyzes current problems, developments and issues in public sector collective bargaining from growth of public employee unions to the nature of bargaining in the public sector. Includes bargaining issues, right-to-strike and use of arbitration in public sector.		
282	LABOR LAW IN THE PUBLIC SECTOR	<i>3 credits</i>
Prerequisite: 271. Provides basic understanding of legal requirements and restraints placed upon parties when bargaining within federal, state and local sectors as well as postal and educational areas. Legal framework of collective negotiations or contract administration.		
290	ST: ASSOC STUDIES-SOCIAL SCI	<i>1-4 credits</i>
(May be repeated with a change in topic) Prerequisite: permission. Selected topics on subject areas of interest in the social sciences.		
344	DEATH & DYING	<i>2 credits</i>
Examination of a wide range of topics related to death and dying. Emphasis is placed on understanding and coping with death and dying.		



Individualized Study (2100)

195

INDIVIDUALIZED STUDY

1 credits

Prerequisite: admission to the Distinguished Student Program. Focused investigation of a specific topic mutually determined by the student and a supervising faculty member.



Early Childhood Development (2200)

110	FOUNDATIONS IN EARLY CHLDHD ED	<i>3 credits</i>
Provides students with a comprehensive overview of model early childhood programs and places emphasis on interactions between home and school that impact children's development.		
245	INFANT/TODDLER DAY CARE PROG	<i>3 credits</i>
Survey of infant/toddler development. Principles of infant/toddler caregiving. Design of environment and curriculum based on child's needs. Includes ob servation of children. (20 field hours required)		
246	MULTICULT ISSUES IN CHILD CARE	<i>3 credits</i>
The study of cultural differences in child care and preschool settings to improve caregiving practices and enhance communication between caregivers and families.		
247	DIVERSITY EARLY CHILD LITERACY	<i>3 credits</i>
Examination and analysis of children's books and materials on diversity reflecting differences and similarities of groups of people that make up our society.		
250	OBSERV & RECORD CHILD BEHAVIOR	<i>3 credits</i>
Prerequisite: 7400:265 or permission. Develops observing and recording skills using different types of records to assess children's development and behavior. (10 field hours required)		
290	ST: EARLY CHILDHOOD DEVELOPMT	<i>1-3 credits</i>
Selected topics/workshops on subject areas of interest in early childhood development. May be repeated up to 4 credits.		
295	EARLY CHILDHOOD PRACTICUM	<i>5 credits</i>
Prerequisites: 245 and 5200:360, 370 and 7400:265, 270, 280. Supervised practicum in an early childhood/preschool educational setting designed for Early Childhood Development students only.		
297	INDEPENDENT STUDY	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisite: permission. Selected topics and special areas of study under supervision and evaluation of selected faculty member with whom specific arrangements have been made.		



Criminal Justice Technology (2220)

100	INTRODUC TO CRIMINAL JUSTICE	<i>3 credits</i>
Overview of criminal justice system, its history, development and evolution within the United States including subsystems of police, courts, corrections. Constitutional limitations, current criminal justice practices human relations, professionalization, prevention.		
101	INTRO TO SECURITY ADMIN TECH	<i>3 credits</i>
Introduces fundamentals such as equipment, technology, design theories, management practices, trends, concerns, and issues in security administration.		
102	PRINCIPLES OF CRIMINAL LAW	<i>3 credits</i>
Prerequisite: 2220:100. This course examines the central principles of criminal law, including its history, philosophy, the elements of major crimes and criminal defenses.		
103	INTRODUCTION TO CORRECTIONS	<i>3 credits</i>
Prerequisite: 100 Introduction to history and goals of institutional and community corrections.		
104	EVIDENCE & CRIM LEGAL PROCESS	<i>3 credits</i>
Prerequisite: 2220:100. Study of evidence law, constitutional perspectives and law enforcement officer's relationship thereto. Court procedures from arrest to incarceration.		
105	INTRO: POLICE STUDIES	<i>3 credits</i>
Prerequisite: 100. Provides a foundation for understanding police role, structure, and function in American society at the local, state, and federal levels.		
106	JUVENILE JUSTICE PROCESS	<i>3 credits</i>
Prerequisite: 2220:100. Examination of juvenile justice system, functions of its various components; adolescent subculture, legislation, causative factors, prevention and treatment methodologies and programs.		
120	CRIME PREVENT: THRY, PRCT, MGT	<i>3 credits</i>
Examines contemporary crime prevention and security strategies used in target hardening. Central theme is the use of community resources to prevent crime.		
222	INTERVIEW & INTERROGATION	<i>3 credits</i>
Prerequisite: OPOTC Certification. A course of study on interview and interrogation which will teach the student how to obtain information in an orderly, effective, and legally sufficient manner.		
224	PROFILING SERIAL KILLERS	<i>3 credits</i>
Prerequisite: 100. Introduction to the theories, analyses, and methodology used in profiling serial killers. Actual serial profiles and paradigms of crime scene analyses also examined.		
225	THE POLICE EXPERIENCE	<i>3 credits</i>
Prerequisites: 100, permission. Academic refresher course of basic police academy. Completion (C or better) and 2220:100 qualifies a commissioned police officer to test out of certain courses (see adviser).		
226	INTRVS, INTER & HOSTAGE NEGOT	<i>3 credits</i>
Prerequisite: 100. An overview of the legal, theoretical, and applied aspects of conducting interviews, interrogations, and hostage negotiations within the field of law enforcement.		
231	PHYS SEC: SYSTEMS, DSGN & CTRL	<i>3 credits</i>
Prerequisite: 101. Topics include: controlling and monitoring the access of persons and vehicles, prevention and detection of unauthorized intrusions and surveillance, and safeguarding key assets.		
232	LEGAL ISSUES IN SECURITY ADMIN	<i>3 credits</i>
Survey of laws applicable to the security administration function including tort, labor, employment, unemployment, workers' compensation, contract, insurance, cyber, criminal and constitutional law.		
233	SEC INVESTGTNS: PRINC & PRACT	<i>3 credits</i>
Overview of investigative methods employed by the security manager. Students will examine legal and ethical duties and issues related to investigation.		
234	COMPUTER AND INFO SECURITY	<i>3 credits</i>
Prerequisite: 101. Examines practical applications of effective information security measures and legal, ethical and privacy issues concerning the storage and use of information in society.		
235	SCHOOL CRIME & VIOLNCE PREVENT	<i>3 credits</i>
Prerequisites: 101, 120. Examines the nature and extent of crime and deviance in American schools. Particular focus is on the use of a systems approach to prevent crime.		
240	VICE & ORGANIZED CRIME	<i>3 credits</i>

Prerequisites: 100 and permission. An overview of organizations operating nationally and internationally in a variety of criminal activities with a particular emphasis on narcotics trafficking.

245	HOMELAND SECRTY: PRINC & PRAC	<i>3 credits</i>
Prerequisite: 101. Overview of fundamental homeland security concepts and issues such as: intelligence, critical infrastructure protection, hazards, strategy, policy, risk, organizational design and leadership.		
250	CRIMINAL CASE MANAGEMENT	<i>6 credits</i>
Prerequisites: 100, 2820:105 and permission. Reconstruction of chronological sequence of a crime including searching, collection, preserving and evaluation of physical and oral evidence. Scientific approach to criminal investigation.		
251	CRIMINAL INVESTIGATION	<i>3 credits</i>
Prerequisite: 100. The course provides the student with fundamental investigative skills and the ability to manage a criminal case from initiation through conclusion.		
253	BASIC FORENSIC METHODS	<i>3 credits</i>
Prerequisites: 100, 2820:105. Introduction to the science, technology and application of forensic methods in the investigation of crime.		
255	INTRO: FORENSIC INVESTIGATION	<i>3 credits</i>
Prerequisite: 100. This course is designed to introduce the student to the field of forensic science. The emphasis will be on skills and techniques of evidence evaluation.		
260	CRITICAL INCIDENT INTERVENT CJ	<i>3 credits</i>
Prerequisite: 100. This course is designed to introduce the student to the stressors and emotions of dealing with people and workers involved in crisis situations.		
262	POLICE ADMINISTRATION	<i>3 credits</i>
Prerequisite: OPOTC Certification. Approaches to police administration from an overview perspective providing the fundamentals of administration and management while giving the law enforcement student a framework for understanding.		
270	COMMUNITY CORRECTIONS	<i>3 credits</i>
Prerequisite: 100. Examines the corrections component of the criminal justice system. Special focus on the development and use of probation, parole, and other alternative forms of sentencing.		
275	LEGAL ASPECTS OF CORRECTIONS	<i>3 credits</i>
Examination of the influence of the legal system on corrections, especially United States Supreme Court decisions.		
280	CYBERCRIME	<i>3 credits</i>
Examines crime and deviance in cyberspace. Particular focus is on the prevention of computer intrusion in the workplace.		
281	COMPUTER FORENSIC METHODS	<i>3 credits</i>
Prerequisites: 100 or 101. Examination of computer forensic methods employed to identify, collect, recover, authenticate, preserve, analyze, and document electronic evidence for criminal or civil legal purposes.		
286	COURTROOM COMMUNICATION	<i>3 credits</i>
Prerequisite: 100. Witnessing studies the trial process, emphasizing role of witnesses. Effective communication to juries, applicable evidentiary rules and preparation techniques are taught, preparing students for direct and cross-examination.		
287	THE LEGAL SYSTEM & PSYCHOLOGY	<i>3 credits</i>
Prerequisite: 100. Examination of various areas where law and psychology interface, particularly in criminal cases by examining the expanding rule of psychology in justice system and the courtroom.		
292	ST: CRIMINAL JUSTICE	<i>1-4 credits</i>
(May be repeated for a total of six credits). Prerequisite: permission. Workshops and special programs in selected areas of criminal justice such as community relations, crime statistics, ethics, survival.		
296	CT: CRIMINAL JUSTICE	<i>1-3 credits</i>
Prerequisite: 100. A variety of course topics on current subjects relative to law enforcement and the Criminal Justice System. May be repeated for up to 12 credits.		
297	INDP STUDY: CRIMINAL JUSTICE	<i>1-3 credits</i>
Prerequisite: 100 and permission. Selected topics and special areas of study in Criminal Justice Technology under the supervision of a selected faculty member with whom specific arrangements have been made.		
298	APPLIED ETHICS IN CRIM JUSTICE	<i>3 credits</i>
Prerequisite: 100. This course deals with ethical considerations which confront justice practitioners and the legal ramifications of misconduct.		



Fire Protection Technology (2230)

100	INTRODUCTN TO FIRE PROTECTION	<i>4 credits</i>
History and philosophy of fire protection; introduction to agencies involved; current legislative developments; discussion of current related problems, expanding future of fire protection and career orientation.		
102	FIRE SAFETY BLDG DESGN & CONST	<i>3 credits</i>
Exploration of building construction and design with emphasis on fire protection concerns; review of related statutory and suggested guidelines local, state and national scope.		
104	FIRE INVESTIGATION METHODS	<i>4 credits</i>
History of fire investigation; gathering of evidence and development of technical reports; fundamentals of arson investigation; processing of criminal evidence and procedures related to local and state statutes.		
202	INCIDENT MGMT FOR EMER RESPOND	<i>4 credits</i>
Efficient and effective use of human resources, equipment and systems. Emphasis on preplanning , incident management, problem solving related to emergency preparation and response.		
204	FIRE AND LIFE SAFETY EDUCATION	<i>3 credits</i>
Application and analysis necessary for the implementation of the Life Safety Code Handbook.		
205	FIRE DETECTN & SUPPRSN SYS	<i>3 credits</i>
Design, installation, maintenance and utilization of portable fire extinguishing appliances and pre-engineered automatic systems; fire detection and alarm signaling systems operational capabilities, requirements.		
206	FIRE SPRINKLER SYSTEM DESIGN	<i>3 credits</i>
Prerequisite: 205. Design, installation and operation of automatic fire suppression systems. Includes sprinkler, foam, carbon dioxide, dry chemical, halogenated agent systems.		
250	HAZARDOUS MATERIALS	<i>4 credits</i>
Prerequisite: 100. Study of chemical characteristics and reactions related to storage, transportation and handling of hazardous materials. Emphasis on emergency situations, fire fighting and control.		
254	FIRE PREVENTION	<i>3 credits</i>
Prerequisite: 104. Fire codes and standards relative to fire prevention, inspection, and code enforcement.		
257	FIRE & SAFETY ISS FOR BUS/IND	<i>3 credits</i>
Industrial fire and safety issues related to specialized hazards, federal and state regulations. Emphasis on emergency response team preparedness, confined space entry, and rescue.		
280	FIRE SERVICE ADMINISTRATION	<i>4 credits</i>
Prerequisite: 100. Fire officer professional qualifications; federal, state regulations governing department operations- OSHA, EPA; emergency and non-emergency operations procedures-ICS, IMS, Emergency Operations Center are presented.		
290	ST: FIRE SCIENCE TECHNOLOGY	<i>1-4 credits</i>
(May be repeated for a total of four credits) Prerequisite: permission. Selected topics or subject areas of interest in fire protection technology.		
294	ADVANCED FIRE INVESTIG METHODS	<i>3 credits</i>
Prerequisites: 100, 104, 205, 206. Designed to meet student and in service fire investigators need to understand new/ updated technology and methodology in managing fire investigations.		
295	TECHNICAL FIRE TRAIN/FIELD EXP	<i>4 credits</i>
Prerequisites: 30 credit hours of successfully completed course work in the Fire Protection Technology program which includes 100, 102, 104, 204, 205, and 280. Technical training/field experience analysis by student and instruction of technical training; potentially leading to state 240-hour fire fighter certification.		
297	INDP STUDY: FIRE PROTECTION	<i>1-3 credits</i>
Prerequisite: 2230:100 and permission. Selected topics and special areas of study in fire protection technology under the supervision and evaluation of a selected faculty who assigns specific arrangements.		



Emergency Management (2235)

305	PRNCPLS OF EMERGENCY MGMT	<i>3 credits</i>
An overview of the history and philosophy, terms and concepts, and local, state and federal roles in emergency management. Emphasizes manmade, natural and technological hazards.		
320	EMERGENCY MANAGEMENT BUSINESS	<i>3 credits</i>
Prerequisites: 305 and 350. Examines business components of emergency management in both the private and public sectors. Also emphasizes business continuity plans along with case studies.		
350	EMER RESPONSE PREP & PLAN	<i>3 credits</i>
Prerequisite: 305. Legal requirement, planning formats, and response procedures are presented. Special focus community risk assessment: hazard analysis, vulnerability assessment, and community response capability assessment.		
355	EMER MGT RSCH METH & APPL	<i>3 credits</i>
Introduction to scientific method and processes, professionalism, databases and reliability, qualitative, and quantitative methods. Utilization of research for appropriate decision making.		
360	INTRODUCTION TO TERRORISM	<i>3 credits</i>
Corequisite: 305. Examines terrorism from historical, international, transnational, and domestic perspectives. Includes political and religious terrorism along with emergency management considerations.		
370	HAZARD PROCESSES FOR EMER MGMT	<i>3 credits</i>
Overview of hazards theory and various natural and technological hazards. Emphasis on an emergency management perspectives in regard to various topics.		
380	DISASTER VICTIMS: CAS & RECOV	<i>3 credits</i>
Prerequisites: 305 and 350. Analysis of citizen actions before, during and following major disasters including review of contemporary research and developing theory.		
385	DISASTERS IN FILM AND MEDIA	<i>3 credits</i>
Examines how contemporary culture perpetuates myths of natural and technological disasters. Students deconstruct and analyze reality from the myths in various types of media.		
405	HAZARD PREVENT & MITIGAT	<i>3 credits</i>
Prerequisite: 350. Examines various mitigation programs and ways in which communities can increase their levels of prevention and decrease their risk and impact of disasters and major emergencies.		
410	DISASTER RELIEF & RECOVERY	<i>3 credits</i>
Prerequisite: 305, 350. This course provides the foundation for disaster relief and recovery planning, stages of recovery, resources used, formation of public/private and the process of prioritizing various business and government and citizen needs for recovery action and resource allocation.		
490	CURRENT TOPICS: EMERGENCY MGMT	<i>1-4 credits</i>
Prerequisites: 305 and 350. A variety of course topics on current subjects related to emergency management and disaster preparedness. May be repeated for up to 12 credits.		
495	INTERNSHIP IN EMERGENCY MGMT	<i>4 credits</i>
Prerequisite: 30 hours in program and permission from program director. Supervised work experience in emergency management to increase student understanding of emergency management and disaster response.		
497	INDP STUDY: EMERGENCY MGMT	<i>1-4 credits</i>
Prerequisites: 305 and 350. Selected topics, special areas of study in emergency management, disaster preparedness under the supervision of a faculty member with whom specific arrangements have been made.		



Community Services Technology (2260)

100	INTRODUC TO COMMUNITY SERVICES	<i>3 credits</i>
Introductory course to familiarize student with role of community services technician in service delivery. Use, history and rationale for paraprofessionals, programs, volunteer experiences, self-awareness, and interaction in community services.		
120	INTRO: MENTAL HEALTH SERVICES	<i>3 credits</i>
Prerequisites: 3750:100, 7750:276. Provides students with beginning knowledge base of mental health social services, an introduction to causes and symptoms of mental health disorders, and a greater sensitivity for working with individuals who suffer from chronic and severe mental disorders.		
121	SOCIAL SERVICE TECH I	<i>3 credits</i>
Prerequisite: 171. Preparation to provide helping interventions as Social Work Assistants. Focuses on helping relationships, helping and problem-solving processes, social work values, attending skills and interview techniques.		
122	SOCIAL SERVICE TECH II	<i>3 credits</i>
Corequisite: 121. Focus on enhancing self-awareness. Provides basic knowledge about social group work and opportunities for students to practice beginning group work techniques by co-facilitating group discussions and experiential activities.		
131	INTRO: DEVELOP DISABILITIES	<i>2 credits</i>
This course provides an overview of developmental disabilities. Content includes definitions, classifications, causes, and characteristics of disabilities; legislation/regulations; service delivery models; and prevention.		
150	INTRODUC TO GERONTOLGCL SERV	<i>3 credits</i>
Basic orientation to gerontology and role of community service technician in service delivery to aged. Topics include social, biological, economical, and psychological aspects of aging; national and state legislation; services and service provider.		
171	CAREER ISSUES SOC SERV I	<i>1 credits</i>
Corequisite: 7750:276. Orients students to human service education and introduces them to the knowledge, skills, and attitudes essential for future educational and career success.		
172	CAREER ISSUES SOC SERV II	<i>1 credits</i>
Prerequisite: 171. Explores strategies to promote optimal effectiveness as a helper. Topics include time and stress management, burnout, self-care, professional development, ethical dilemmas, record-keeping, and termination.		
210	ADDICTION EDUC & PREVENTION	<i>3 credits</i>
Provides in-depth understanding of prevention and education programming with an emphasis on evidence-based practices. Logic models are used to design programs.		
220	THERAPEU TECH IN MENTAL HEALTH	<i>3 credits</i>
Prerequisite: 120; corequisites: 121, 122. This course provides students with an understanding of interventions used with, and on behalf of, persons who suffer with severe and chronic mental disabilities. Students will learn and practice sensitivity and skill development to prepare them for pre-professional and entry-level social service positions in the mental health field.		
223	SOCIAL SERVICE TECHNIQUES III	<i>3 credits</i>
Prerequisite: 122. Corequisites: 172 or 273. Provides knowledge base for working with individuals in crisis. Students apply crisis theory to developmental and situational crises and practice crisis intervention techniques.		
230	COMMUNITY-BASED RESIDENTIAL SERV	<i>3 credits</i>
Orientation to community-based residential services and role of community services technician in delivery of services to mentally disabled. Includes historical, social and legal forces in community-based services and practical aspects of operation of a residential facility.		
231	HABILITATION PROGRAMMING	<i>2 credits</i>
Prerequisite: 131. This course examines components of individualized plans, implementation of such plans, and legal issues. Content includes types of habilitation programming and the role of self-determination.		
233	BEHAVIOR SUPPORT	<i>2 credits</i>
Prerequisite: 131. This course examines the components of behavior support. Course content includes various types of behavior support programs and techniques.		
240	DRUG USE AND ABUSE	<i>3 credits</i>
Introduction to pharmacology of drugs of misuse; physiological factors of alcohol/drug-using behavior; effect of psychoactive drugs on the brain; intervention and treatment measures.		
251	COMMUN SERVICE SENIOR CITIZENS	<i>3 credits</i>
Prerequisite: 2260:150. A study of national and community resources for social service delivery to senior citizens. Specific agencies, program needs and senior citizens and resultant services.		

255	EFFECTIVE WORKPLACE RELATNSHPS	<i>3 credits</i>
This course focuses on self-evaluation and development of skills for successful interaction with clients/inmates, peers, supervisors, and colleagues in other public service systems.		
260	INTRODUCTION TO ADDICTION	<i>3 credits</i>
An overview of the continuum of use, abuse and dependency; theories of addiction; the impact of addiction on society; and the implications for professional practice.		
261	ADDICTION TREATMENT	<i>4 credits</i>
Prerequisite: 2260:260. Survey of treatment approaches used in treatment of persons with addictions. Special emphasis on MET, Solution-Focused Therapy, Twelve-Step Facilitation and Cognitive-Behavioral approaches. Critical ethical/legal issues will be covered.		
262	BASIC HELPING SKILLS	<i>4 credits</i>
Teaches micro skills through the use of didactic presentation, role play and videotaping; develops ability to give and receive feedback about effectiveness of helping others.		
263	GROUP PRINCIPLES IN ADDICTION	<i>3 credits</i>
Prerequisite: 260. Introduces group concepts and dynamics, explores issues in addiction that influence group treatment and provides experiential opportunity for students to understand roles in a group.		
264	ADDICTION & THE FAMILY	<i>3 credits</i>
Reviews theories and counseling techniques used in the assessment and treatment of the family system. Impact of addiction on child development, parenting, marital relationship, and other significant relationships will be explored.		
265	WOMEN & ADDICTION	<i>3 credits</i>
Exploration of the social, psychological, physical and family aspects of addiction in women.		
266	SOC SERV TECH CHILDRN & FAMILY	<i>3 credits</i>
Prerequisite: 122. Preparation for working with children individually and in their families. Content includes child development in relation to environmental factors, social policy concerns and helping interventions.		
267	ADDIC ASSESS & TREAT PLAN	<i>3 credits</i>
Prerequisite: 260. Overview of screening, diagnosis and assessment procedures in the addiction field, including review of the most commonly used testing instruments. Implication for treatment planning is explored.		
268	CO-OCCURRING DISORDERS	<i>3 credits</i>
Key concepts and evidence-based practices in the provision of services to people suffering from substance abuse as well as mental illness and behavioral disorders.		
269	CRIMINAL JUSTICE & ADDICTION	<i>3 credits</i>
An introduction to the problems that exist with the treatment of the alcohol/drug offenders and issues relating to their transition back to the community.		
270	RELAPSE PREVENTION	<i>3 credits</i>
A study of the concepts, evidence-based practices and strategies for relapse prevention with addictive behaviors.		
271	BEHAVIORAL ADDICTIONS	<i>3 credits</i>
Introduction to understanding human behavior and physiological responses to compulsive behaviors other than dependencies on psychoactive chemicals. Several behavioral addictions will be explored.		
273	CAREER ISSUES SOC SVC III	<i>1 credits</i>
Prerequisite: 171; corequisite: 122. Prepares students for fieldwork and future employment. Topics include resume development, job interviews and search strategies, working in organizations, supervision, safety, professionalism, and licensure requirements.		
275	THERAPEUTIC ACTIVITIES	<i>3 credits</i>
Prerequisite: 150. Preparation for planning, adapting and implementing individual and group therapeutic activities to meet diverse psychological needs. Emphasizes program planning, motivational techniques and group work skills.		
276	PRACT: THERAPEUTIC ACT	<i>1 credits</i>
Prerequisite: 150. Corequisite: 275. Supervised 90-hour experience in long-term care facility observing, planning and providing therapeutic activities. Students practice program planning, documentation and group work skills.		
277	CASE MGT-COMMUNITY SERVIC	<i>3 credits</i>
Case by case study of Social Service delivery in six primary areas of Human Services. Emphasis on case management skills, documentation and ethics.		
278	TECHNIQUES OF COMMUNITY WORK	<i>4 credits</i>
Prerequisite: 2020:121 or 3300:111. For those intending to work in community organizations in the United States and for others desiring an understanding of technical community service roles. Covers such topics as ethics, liability issues, communication and problem solving skills, values clarification, stress management systems theory, and assertive behavior.		
279	TECH EXP COMMUN&SOCIAL SERVICE	<i>5 credits</i>
Prerequisite: 278 and permission. Individual placement in selected community and social service agencies for educationally supervised experience in community and social services technician position. Does not substitute for 7750:421 or 495.		
281	RECRUIT & INTRVW OF VOLUNTEERS	<i>3 credits</i>
Prerequisite: 280 or permission. To provide knowledge for recruitment and interviewing of persons seeking volunteer positions. Will cover writing of volunteer job descriptions, methods of recruitment, techniques of interviewing; concentration on interviewing skills.		

285	SOCIAL SERVICES PRACTICUM	<i>1-2 credits</i>
Prerequisite: 293. Corequisite: 294 Supervised fieldwork in a human service organization with a bi-weekly seminar. Students apply classroom learning to helping situations, test career interests, and gain practical, on-the-job experience.		
286	ADDICTION SERVICES INTERNSHIP	<i>2 credits</i>
Prerequisites: permission of instructor. Integrates counselor assistant experience with fundamental concepts and skills from academic studies. Students are required to complete 200 hours of supervised field experience.		
287	PRACT IN THERAPY ACTIV & LT CAR	<i>1-2 credits</i>
Prerequisites: 122 or permission, 275, 293 or permission. Corequisite: 294. Supervised fieldwork in a long-term care facility that includes direct experience with one-on-one and group therapeutic activities, assessment, documentation, interdisciplinary care planning, and social services.		
289	PRACT IN GERONT SOCIAL SVCS	<i>1 credits</i>
Prerequisites: 122, 150, and 293 or permission; Corequisite: 294 or permission. Supervised field placement in a community-based or institutional setting that focuses primarily on providing social services to older adults and their families.		
290	ST: COMMUN SERVICES TECHNOLOGY	<i>1-3 credits</i>
Selected topics or subject areas of interest in community services technology.		
293	FIELD WORK ORIENTATION	<i>1 credits</i>
Prerequisite: 172 or permission Corequisites: 122, 273 or permission. Students complete a self-assessment and application process for their first practicum and practice job search strategies and workplace competencies to prepare for and arrange it.		
294	FIELD WORK EVALUATION	<i>1-2 credits</i>
Prerequisites: 273, 293 Corequisites: 285 or 287 or 289. Students complete assessments to demonstrate program competencies and evaluate their first practicum to assist in determining appropriate learning experiences for their second practicum.		
297	INDP STUDY: COMMUNITY SERVICES	<i>1-3 credits</i>
Prerequisite: permission. Selected topics and special areas of study under the supervision and evaluation of a selected faculty member with whom specific arrangements have been made.		



Hospitality Management (2280)

101	INTRODUCTION TO HOSPITALITY	<i>3 credits</i>
Explores the various segments of the hospitality industry and introduces the knowledge and skills required for success.		
120	SAFETY & SANITATION	<i>2 credits</i>
Introduction to food service sanitation, safety practices pertinent to hospitality manager. Emphasis on sanitation laws, rules, food microbiology, safe food handling, storage practices, accident prevention.		
121	FUNDAMENTALS OF FOOD PREP I	<i>4 credits</i>
Prerequisite or Corequisite: 121. Skills and basic knowledge of food preparation procedures in a laboratory situation.		
122	FUNDAMENTALS OF FOOD PREP II	<i>4 credits</i>
Prerequisites: 101, 120, 121. Continuation of 121. Food preparation techniques presented in laboratory situations for public consumption in a restaurant setting.		
160	WINE & BEVERAGE SERVICE	<i>3 credits</i>
Intensive examination of wine as related to hospitality industry. Emphasis on business practices. History and development of viticulture, enology.		
230	ADVANCED FOOD PREPARATION	<i>4 credits</i>
Prerequisites: 101 and 122. Lecture and demonstration followed by hands-on experience in the preparation of classical American dishes as well as cuisines and techniques from around the world.		
232	DINING ROOM SERVICE & TRAINING	<i>3 credits</i>
In-depth study of the styles of dining service, development of job descriptions, importance of courtesy, customer relations. Application of service techniques in restaurant environment.		
233	RESTAURANT OPERATIONS & MGMT	<i>4 credits</i>
Prerequisite: 122, 232 and 245 for restaurant management option. Additional prerequisite: 261 for culinary arts majors. Introduction to large quantity food service procedures with emphasis on sound principles of food handling service and sanitation in large quantity operations. Gourmet meals served in simulated restaurant atmosphere.		
237	INTERN: HOSPITALITY MANAGEMENT	<i>2 credits</i>
Prerequisite: permission. On/off campus observation/work experience integrated with academic instruction. Concepts applied to practical situations.		
240	SUPRVSN IN HOSPITALITY INDSTRY	<i>3 credits</i>
Prerequisite: 101. Identifies various components of the hotel and food service operations and the role of managing human resources efficiently and effectively		
243	FOOD EQUIPMENT&PLANT OPERATION	<i>3 credits</i>
Prerequisite: 120. Available food service equipment, its selection, use and care. Field trips taken to wholesale outlets and food service establishments to see food service equipment demonstrated and in operation.		
245	MENU, PURCHASING&COST CONTROL	<i>4 credits</i>
Prerequisites: 101, 2030:161 and 2420:211. Menu design and merchandising integrated with purchasing principles, specifications and receiving, as well as financial controls and procedures within the hospitality environment.		
250	FRONT OFFICE OPERATIONS	<i>3 credits</i>
Prerequisites: 2030:161, 2280:101, 2420:211. This course introduces the student to the functioning of the Front Office of a Hotel and expands student's knowledge of Hotel Operations.		
256	HOSPITALITY LAW	<i>3 credits</i>
Prerequisite: 101. Introduction to hotel, restaurant, travel law. Fundamental constitutional, statutory, administrative rules, regulations applicable to hospitality industry. Case study, problem-solving approaches applied to legal problems confronting hospitality executives.		
261	BAKING & CLASSICAL DESSERTS	<i>4 credits</i>
Prerequisite: 121. Techniques and production of quick breads, yeast products, cakes, cookies, specialty desserts and pies. Emphasis on equipment, formulas, ingredient selection and product quality evaluation.		
268	REVENUE CENTERS	<i>3 credits</i>
Prerequisite: 101. An in-depth examination of the sales producing divisions of the hotel organization. The rooms, banquet, food and beverage, and special departments as well as their interconnections are studied.		
278	HOSPITALITY INDUSTRY MARKETING	<i>3 credits</i>
Prerequisite: 101. Introduce various concepts of marketing, their application to the hospitality industry, and the key elements of a marketing plan.		
280	SPECIAL EVENTS MANAGMENT	<i>3 credits</i>

Prerequisites: 101, 232. Defines scope and segmentation of convention and group business markets and develops related marketing strategies.

290

ST: HOSPITALITY MANAGEMENT

1-3 credits

(May be repeated for a total of four credits) Prerequisite: permission. Selected topics or subject areas of interest in food service management.



Paralegal Studies (2290)

101	INTROD TO PARALEGAL STUDIES	<i>3 credits</i>
Covers the basics of paralegal studies emphasizing the fundamental concepts of the legal system. Includes overview of paralegal studies career and ethical considerations relative thereto.		
104	BASIC LEGAL RESEARCH & WRITING	<i>3 credits</i>
Prerequisite: 101. Will provide the student with basic research abilities necessary in law offices. Includes the use of law library tools (reporter systems, legal encyclopedias, codes, and computer).		
105	LAW OFFICE TECHNOLOGY	<i>3 credits</i>
Prerequisite: 101. Overview of software utilized in today's law office; including case management/trial litigations software. Stresses law-related internet applications and electronic case filings.		
106	BUSINESS ASSOCIATIONS	<i>3 credits</i>
Prerequisite: 101. Instructs students in different types of business entities, from sole proprietorships to corporations. Preparation of forms and necessary governmental filings will be stressed.		
108	REAL ESTATE TRANSACTIONS	<i>3 credits</i>
Prerequisite: 101. Acquaints students with basic real property law, including different types of deeds, ownerships, easements, and mortgages. Problems arising from sales agreements will be covered.		
110	TORT LAW	<i>3 credits</i>
Prerequisite: 101. Covers the traditional civil wrongs, from the plaintiff's and defendant's standpoints. Actual cases will be briefed and discussed. Stresses importance of preparation prior to trial.		
112	FAMILY LAW	<i>3 credits</i>
Prerequisite: 101. Covers antenuptial agreements, marriage, divorce, dissolutions, annulments, adoptions, juvenile law, artificial insemination, and paternity.		
118	PROBATE ADMINISTRATION	<i>4 credits</i>
Prerequisite: 101. Covers law necessary to draft and interpret wills, trusts. Includes administration of a typical estate within Probate Court. Touches on guardianship, commitment of mentally ill.		
204	ADVANCED LEGAL RESEARCH	<i>3 credits</i>
Prerequisite: 101; 104. Continuation of 104. Will especially stress importance of clear, concise legal writing. Students will write briefs, motions, and complaints as part of their endeavor.		
214	CIVIL PROCEDURE	<i>3 credits</i>
Prerequisite: 101. Covers aspects of legal assisting in different types of civil litigation. Includes Ohio Rules of Civil Procedure, preparation of complaints, answers, motions, basic trial preparation.		
216	DEBTOR-CREDITOR RELATIONS	<i>3 credits</i>
Prerequisite: 101. Covers bankruptcy primarily, as well as collection methods and state law remedies.		
218	ADVANCED PROBATE ADMINISTRATION	<i>3 credits</i>
Prerequisites: 101; 118. Covers guardianships, marriage licenses, living wills and advanced directives, adoptions, name changes, and the probate and tax issues of intestate and testate estates.		
220	PARALEGAL INTERNSHIP	<i>4 credits</i>
Prerequisites: 101; 104. Must have completed first-year courses. Students are provided experience in law-related environment. Students work at placement and meet with the course instructor.		
290	ST: LEGAL ASSISTING TECHNOLOGY	<i>1-3 credits</i>
Prerequisites: 101, 104 or permission. (May be repeated for a maximum of six credits.) Selected topics on subject areas of interest in Legal Assisting Technology.		
297	INDP STUDY: LEGAL ASSISTING	<i>3-5 credits</i>
Prerequisite: 101. (May be repeated for a maximum of six credits.) Selected topics and special areas of study in Legal Assisting Technology.		



Business Management Technology (2420)

103	ESSENTIALS OF MANAGEMENT TECH	<i>3 credits</i>
Survey of management principles for business and other organizations. Emphasizes the basic management functions including planning, organizing, staffing, influencing, and control.		
104	INTROD TO BUSIN GLOBAL ENVIRON	<i>3 credits</i>
Survey of business emphasizing the global nature of business and including entrepreneurship concepts, form, marketing, management, human resources, financial resources and production.		
110	PRINCIPLES OF TRANSPORTATION	<i>3 credits</i>
Analysis of role of transportation in nation's economic development. Survey of historical development and economic aspects of rail, highway, water, air, and pipeline.		
117	SMALL BUSINESS DEVELOPMENT	<i>3 credits</i>
Prerequisite: 211 or permission. Introduction to small business and entrepreneurship: opportunities and qualifications for establishing, financing, operating and developing managerial policies and procedures for small business		
125	ESSENTIALS OF PERSONAL FINANCE	<i>3 credits</i>
Consumer decision making including credit and budgets, time value of money, major purchases, insurance, investments, tax planning, retirement and estate planning.		
140	KEYBOARDING	<i>2 credits</i>
Fundamentals in the operation of the keyboard; application emphasis on individual student needs such as resumes, application letters and forms, term reports, abstracting, etc.		
170	APPLIED MATH FOR BUSINESS	<i>3 credits</i>
Prerequisite: Completion of 2010:052 or 057 with a grade of C or better or placement test. Mathematics of business including retail pricing, simple and compound interest, discounts, mortgages, payroll, annuities, depreciation, inventory, insurance, taxes, stock and bonds, and basic statistics.		
171	BUSINESS CALCULATIONS	<i>3 credits</i>
Applied fundamental mathematical principles within the business setting. Electronic calculator proficiency will be developed through repeated problem-solving applications using these principles.		
202	ELEMENTS OF HUMAN RESOURC MGMT	<i>3 credits</i>
Prerequisite: 103 or permission. Provides students with an overview of human resource management functions. Includes planning, EEO/AA, selection, development, legal environment, compensation, labor relations, appraisal systems and career planning.		
211	BASIC ACCOUNTING I	<i>3 credits</i>
Accounting for sole proprietorships operating as service and merchandising concerns. Introduction to financial statements. Includes handling of cash, accounts receivable, inventories, plant/equipment, and payroll.		
212	BASIC ACCOUNTING II	<i>3 credits</i>
Prerequisite: 211. Accounting as it applies to partnerships and corporations. Includes stocks, bonds, cash flows, financial statement analysis, and specialized accounting software.		
213	ESSENTIALS OF MGMT ACCOUNTING	<i>3 credits</i>
Prerequisite: 211. Study of the interpretation and use of accounting data by management in decision making and the planning and controlling of business activities.		
214	ESSENTIALS OF INTERMED ACCTG	<i>3 credits</i>
Prerequisite: 212. Study of development of financial accounting theory and its application to problems of financial statement generation, account valuation, analysis of working capital, and determination of net income.		
215	COMP APPL FOR ACCT CYCLES	<i>3 credits</i>
Prerequisites: 212, 213, 2540:270. Develops the skills of computer accounting as used in today's marketplace through hands on experience with general ledger accounting software.		
216	SURVEY OF COST ACCOUNTING	<i>3 credits</i>
Prerequisite: 213. Provides student with conceptual understanding of how accounting information is developed and used for product costing, decision making and managerial planning and control.		
217	SURVEY OF TAXATION	<i>4 credits</i>
Survey course of basic tax concepts, research, planning, and preparation of returns for individuals, partnerships and corporations. Federal, state and local taxes are discussed.		
218	AUTOMATED BOOKKEEPING	<i>2 credits</i>
Corequisite: 2420:212. Provides experience with accounting software packages to include the processing of general ledger, accounts receivable, accounts payable, and payroll transactions.		
220	APPLIED ACCOUNTING	<i>3 credits</i>

Prerequisites: 212, 213, 2540:270. An applied orientation focusing on all accounting functions through adjusted trial balance and basic payroll skills. Emphasis on skills required for the Certified Bookkeeping designation.

227	ENTREPRENEURSHIP PROJECTS	<i>3 credits</i>
Prerequisite: 103, 104, 117, 212, 243, 2540:270. Requires the student to research, design, and complete a comprehensive business plan which will become the blueprint for a new or existing business.		
243	SURVEY IN FINANCE	<i>3 credits</i>
Prerequisites: 170 and 211. Survey of field including instruments, procedures, practices and institutions. Emphasis on basic principles.		
245	BUSINESS MGMT ACCTG INTERNSHIP	<i>3 credits</i>
Prerequisites: 212 and 213 or 215 and 216. An accounting field experience exposing the student to the actual accounting environment and general workplace.		
246	BUSINESS MANAGEMENT INTERNSHIP	<i>3 credits</i>
Prerequisites: 32 credits completed, including: 103, 104, 212, 280, 2040:240, 6300:201. A management field experience exposing the student to the actual management environment and general workplace.		
250	PROBLEMS IN BUSINESS MGMT	<i>3 credits</i>
Prerequisites: 103, 104, 212, 243, 2520:101, 2540:270. Capstone course studies the development of solutions and the formulation of policies to solve business problems, emphasizes case studies, group projects, oral and written presentations.		
263	PROF COMMUNCTN & PRESENTATIONS	<i>3 credits</i>
Prerequisite or corequisite: 2020:121 or 3300:111. Application of the principles of communication in speeches, business presentations, group discussions, and business documents.		
270	BUSINESS SOFTWARE APPLICATIONS	<i>4 credits</i>
Prerequisite: 2440:105; Wayne College students - 2440:125, 2540:241, 253. Use of business application software and critical thinking skills to solve business problems. Word processing, spreadsheets, database, presentation software, integration of applications, and the Internet.		
271	DESKTOP PUBLISHING	<i>3 credits</i>
Desktop publishing software used to create printed materials such as newsletters, brochures, and forms. Course addresses design/layout decision and editing skills.		
280	ESSENTIALS OF BUSINESS LAW	<i>3 credits</i>
History of the law and the judicial system, torts and criminal law affecting business, contracts with emphasis on sales under the UCC, and commercial paper.		
290	ST: BUSINESS MANAGEMENT TECHN	<i>1-3 credits</i>
(May be repeated for a total of four credits) Prerequisite: permission. Selected topics or subject areas of interest in business management technology.		
300	SUPERVISION IN A TECHNICAL ENV	<i>3 credits</i>
Competencies required for successful transition from individual contributor to supervisor. Emphasis on working effectively with others and self-development as a leader.		
301	INFORMATION DESIGN	<i>3 credits</i>
Prerequisites: 2020:121 and 222 or 3300:111 and 112 or equivalent. Principles of visual rhetoric and practice in communicating with text and graphics. Examines the role of design in a variety of workplace communication documents.		
302	ETHICAL ISSUES IN THE WRKPLACE	<i>3 credits</i>
Prerequisites: 2020:121 and 222 or 3300:111 and 112 or equivalent. Ethical principles (liability, safety, quality, honesty, confidentiality) in workplace communication. Case studies and projects explore global, legal, and technological issues affecting employee interaction.		
310	LDRSHP PRIN & PRAC FOR TEC ORG	<i>3 credits</i>
Prerequisite: 300 or permission. Contemporary perspectives and issues in leadership and supervision. Development of effective leadership characteristics.		
311	COMM SRV & LDRSHP IN A GLO CON	<i>3 credits</i>
Prerequisite: 300 or permission. Theory and best practices in community service and leadership in local, national and global settings. Identify leadership opportunities for future contributions.		
401	LEADING PROJ TEAMS IN TECH ORG	<i>3 credits</i>
Prerequisite: 310. Examines and applies the operational and human aspects of project team management from conception to completion.		
402	ASSESSING & IMPROVING TECH ORG	<i>3 credits</i>
Prerequisites: 3470:250 or 3470:260; and 2420:310. Methods for conducting business process assessments and evaluating results in technical organizations/settings.		
420	HUMAN CAPITAL DEV FOR TECH ORG	<i>3 credits</i>
Prerequisite: 310. Overview of current theories and best practices in human capital development.		
421	SEN SEMINAR IN ORG SUPERVISION	<i>3 credits</i>
Prerequisite: 402. Integration and application of professional knowledge, skills, and technologies to organizational issues.		



Real Estate (2430)

105	REAL ESTATE PRINCIPLES	<i>3 credits</i>
Introduction to real estate as a profession, process, product and measurement of its productivity. The student is responsible for reading and discussions relative to real estate and the American system.		
185	REAL ESTATE LAW	<i>3 credits</i>
Prerequisite: 105. Contents of contemporary real estate law. The student is responsible for readings covering units on estates, property rights, license laws, contracts, deeds, mortgages, civil rights, and zoning.		
245	REAL ESTATE FINANCE	<i>2 credits</i>
Prerequisites: 105, 185. Study of contents of contemporary real estate finance. Units on reading and discussion include mortgage instruments, financial institutions, mortgage market, government influence on finance, and risk analysis and mortgage lending.		
255	VALUATION OF RESID PROPERTY	<i>2 credits</i>
Prerequisites: 105, 185. Methods used to estimate value in residential property including cost of reproduction, market data and income approach. Student prepares an appraisal on a residential property.		
265	REAL ESTATE BROKERAGE	<i>2 credits</i>
Prerequisites: 105, 185 or permission. Application of management functions of planning, organizing, directing, controlling and staffing to real estate brokerage office. Student activities include reading, discussion and research.		
275	SPEC PRO: REAL ESTATE	<i>2 credits</i>
Prerequisites: 105, 185, 245, 255, and 265. Student demonstrates knowledge of real estate by preparing a written report covering brokerage process as it relates to a parcel of property.		



Computer Information Systems (2440)

105	INTRO: COMPTR & APPL SOFTWARE	<i>3 credits</i>
Overview of basic computer concepts, electronic mail and Internet terminologies. Introductory-level instruction and hands-on experience in word processing, spreadsheet, and presentation software.		
121	INTROD OF LOGIC/PROGRAMMING	<i>3 credits</i>
Prerequisites: 105 or pass placement test. An introduction to business problem solving using computer-based solutions. Topics include structured design, documentation and modularity. Includes a component of hands-on programming.		
125	SPREADSHEET SOFTWARE	<i>2 credits</i>
Prerequisites: 105 or pass placement test. Emphasizes mastery of spreadsheet applications using Excel.		
140	INTERNET TOOLS	<i>3 credits</i>
Prerequisite: 105 or placement exam. Students will learn to create web pages using HTML and enhance their documents by including hyperlinks, tables, forms, frames and images in their HTML code.		
141	WEB SITE ADMINISTRATION	<i>3 credits</i>
Prerequisites: 105 or pass placement test. Provides step-by-step Web site administration guides such as selecting software and hardware, dealing with ISPs, domain name registration, structuring and updating content, analyzing security and legal issues, and implementing marketing strategies.		
145	INTRODUCTION TO UNIX/LINUX	<i>3 credits</i>
Prerequisite: 105 or pass placement exam (CISBR). This course explores the vital functions that an operating system performs. A multi-user operating system is studied from a functional and hands-on approach.		
160	JAVA PROGRAMMING	<i>3 credits</i>
Prerequisite: 121. Course introduces the JAVA programming language. Programming techniques are demonstrated through the coding, testing and debugging of JAVA applications and applets.		
170	VISUAL BASIC	<i>3 credits</i>
Prerequisites: 121. Course includes hands-on experience with Visual BASIC, design of Graphical User Interface (GUI) applications, event-driven programming, linking of windows, and accessing relational databases.		
175	MICROCOMPUTER APPLIC SUPPORT	<i>3 credits</i>
Prerequisite: 105 or pass placement test. This course is a continuation of Software Fundamentals. In-depth use of word processing and spreadsheet software packages.		
180	DATABASE CONCEPTS	<i>3 credits</i>
Prerequisites: 121 and 145. Overview of models and functions of Database Management Systems. Data definition and data manipulation in the relational model using SQL. Introduction to database design.		
201	NETWORKING BASICS	<i>3 credits</i>
Prerequisites: 105 or placement exam. The introductory course in networking. It includes study of the common network protocols, structures, and models. Basic router and switch configurations are introduced.		
202	ROUTER & ROUTING BASICS	<i>3 credits</i>
Prerequisite: 201. The second course to networking. It covers basic router configuration as well as routed and routing protocols.		
203	SWITCHING BASICS AND WIRELESS	<i>3 credits</i>
Prerequisite: 201. The third of four courses leading to the CCNA certification. The course covers switching basics and basic wireless networking.		
204	WAN TECHNOLOGIES	<i>3 credits</i>
Prerequisite: 202,203. The fourth of four courses leading to the CCNA certification. Topics covered include IP services and Wide Area Network theory and design.		
210	CLIENT/SERVER PROGRAMMING	<i>3 credits</i>
Prerequisite: 180. Introduces student to client/server programming. Includes hands-on experience using a Rapid Application Development (RAD) tool to show integration of database and program development.		
211	INTERACTIVE WEB PROGRAMMING	<i>3 credits</i>
Prerequisites: 121, 140. Provides students with instruction on interactive Web programming using HTML, Common Gateway Interface (CGI) using Perl and JavaScript. Programming languages may change based on current industry practice.		
212	MULTIMED&INTERACT WEB ELEMENTS	<i>3 credits</i>
Prerequisite: 140. Reviews and demonstrates web tools and techniques like RealAudio, Shockwave, QuickTime, video conferencing and other dynamic graphical elements to enhance Web-based communication. Multimedia software may change to reflect current technology.		

234	BUSINESS PROGRAMMING	<i>3 credits</i>
Prerequisite: 180. Course emphasizes programming and documentation skills to solve business problems, Topics include business application programming, file handling, and advanced data manipulation.		
240	COMPUTER INFO SYSTEMS INTRNSHP	<i>3 credits</i>
Prerequisites: 2440:202 or 2600:242, and 2440:247. Gives student experience in networking or computer maintenance in the workplace. Student with instructor to discuss and examine experiences.		
241	SYSTEMS ANALYSIS & DESIGN	<i>3 credits</i>
Prerequisite: 170 and 180. Covers all phases of business systems analysis, design, development, and implementation. Such principles as system flowcharting and file and document design emphasized.		
245	INTRO TO DATABASES FOR MICROS	<i>3 credits</i>
Prerequisites: 105 or pass placement test. Explains fundamental data base concepts and provides hands-on experience using database software.		
247	HARDWARE SUPPORT	<i>3 credits</i>
Prerequisites: Admission to program or permission of program director. This course introduces the student to the basic skills required to troubleshoot, maintain and repair computers.		
248	SERVER HARDWARE SUPPORT	<i>3 credits</i>
Prerequisite: 247. This course introduces the student to server hardware and expands student knowledge of client hardware.		
251	CIS PROJECTS	<i>3 credits</i>
Prerequisite: 241 or permission. Using a simulated work environment, project teams are set up and required to analyze an unstructured problem, prepare alternative designs and implement a solution.		
256	C++ PROGRAMMING	<i>3 credits</i>
Prerequisite: 121. This course explores object-oriented programming through C++ program development.		
258	INFO CONTINUITY & RECOVERY	<i>3 credits</i>
Prerequisites: 201, 247. This course focuses on issues in keeping organizational information secure and available. It also covers contingency planning for disasters and security breaches.		
259	COMPUTER AND NETWORK SECURITY	<i>3 credits</i>
Prerequisites: 202, 247. This course focuses on computer and network security issues related to conducting business over the Internet. A common framework of information security terms and principles is used, and students learn to implement these principles in a business environment.		
267	MICRO DATABASE APPLICATIONS	<i>3 credits</i>
Prerequisite: 170 and 180. Students receive hands-on experience using a database applications package. Topics include database creation, organization, updates, queries and generation of reports.		
268	NETWORK CONCEPTS	<i>3 credits</i>
Prerequisite: 105 or pass placement exam (CISBR). This course introduces network concepts and the terminology of network computing. Data communications, network components, the OSI reference model and communication protocols are explored.		
290	ST: COMPUTER INFO SYSTEMS	<i>1-5 credits</i>
Prerequisite: permission. Selected topics or subject areas of interest in computer information systems.		
301	ADVANCED ROUTING	<i>4 credits</i>
Prerequisites: Must have a current CCNA certification and be able to program a router to the CCNA standards. Requires permission. OR Must have successfully completed all four Cisco Networking Academy CCNA courses from an accredited academy - 2440:201, 202, 203, 204. This course focuses on advanced routing protocols and features and complies with the content of the Cisco Academy Cisco Certified Network Profession (CCNP) Advanced Routing course.		
302	REMOTE ACCESS	<i>4 credits</i>
Prerequisites: Must have a current CCNA certification and be able to program a router to the CCNA standards. Requires permission. Or 2440:201, 202, 203, 204. This course focuses on remote access protocols, features, and configuration and complies with the content of the Cisco Academy Cisco Certified Network Profession (CCNP) Remote Access course.		
310	WIRELESS NETWORKING	<i>3 credits</i>
Prerequisite: 204. This course provides students with various wireless networking technologies.		
338	UNIX/LINUX SYSTEM ADMIN	<i>3 credits</i>
Prerequisites: 145. This course provides students with the necessary knowledge and skills to perform basic system administration tasks on a network operating system.		
388	UNIX/LINUX NETWORKING ADMIN	<i>3 credits</i>
Prerequisite: 338. This course provides students with the necessary knowledge and skills to perform advanced system administration tasks on a network operating system.		
401	MULTILAYER SWITCHING	<i>4 credits</i>
Prerequisites: Must have a current CCNA certification and be able to program a router to the CCNA standards. Requires permission. OR Must have successfully completed all four Cisco Networking Academy CCNA courses from an accredited academy - 2440:201, 202, 203, 204. This course focuses on switching protocols and features. This course complies with the content of the Cisco Academy Cisco Certified Network Profession (CCNP) Switching course.		
402	TROUBLESHTG CMLPX IP-BAS NETWK	<i>4 credits</i>

Prerequisites: 2440:301 and 401. This course focuses on maintaining and troubleshooting complex IP-based networks. It complies with the content of the Cisco Academy Cisco Certified Network Profession (CCNP) Troubleshooting course.

410	NETWORK AUTHENTIC & SECURITY	<i>3 credits</i>
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Prerequisite: 204. This course focuses on network security issues related to conducting business over the Internet, including authentication, authorization, and firewalls. Security issues have evolved from server-centric security to network-level security. This course will allow students to discover the extent of the concerns and current solutions.

420	VOICE, DATA, AND VIDEO	<i>3 credits</i>
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Prerequisite: 204. This course focuses on network issues related to the integration of voice, data, and video over the same network media and equipment.

430	NETWORK MONITORING & MGMT	<i>3 credits</i>
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Prerequisite: 204. This course provides students the basic theory and practical application of network monitoring and management skills.

452	CIS PRACTICUM	<i>3 credits</i>
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Prerequisite: Permission. Provides students with experience in computer information systems operation and maintenance in the workplace. Practicum must be relevant to the specialization area.

456	C++ PROGRAMMING II	<i>3 credits</i>
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Prerequisite: 256. This course explores object-oriented programming through C++ program development at a more advanced level. Also considers Visual programming and connection to databases.

480	CT: COMPUTER INFO SYSTEMS	<i>3 credits</i>
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Prerequisite: permission. Seminar in topics of current interest in information technology or special individual topics in information technology.

490	CIS SENIOR PROJECTS	<i>3 credits</i>
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Prerequisites: 338; and at least two of: 301, 401, 310, or 402. This course is used to research, document and implement current and advanced IT topics beyond the scope of what was learned in the prior CIS courses.



Marketing and Sales Technology (2520)

101	ESSENTIALS OF MARKETING TECH	<i>3 credits</i>
Survey of marketing including its environment, buyer behavior, target market selection, product decision, distribution decisions, promotion decisions, pricing decisions and marketing management.		
202	RETAILING FUNDAMENTALS	<i>3 credits</i>
Presents basic principles and practices of retailing operations, including site selection, buying, pricing and promotion practices. Use is made of extensive projects and investigations and actual retail operations.		
203	PRINCIPLES OF ADVERTISING	<i>3 credits</i>
Prerequisite: 101 or 6600:300. Focuses on principles and functions of advertising, creation and evaluation of advertisements, research of target market, message selection strategy, and media placement options.		
204	SERVICES MARKETING	<i>3 credits</i>
Prerequisites: 203 and 212. Corequisites: 202. Focuses on quality customer service and its role in marketing. Evaluation of customers' needs and expectations, interpretation of customer data and creation of service strategies.		
206	RETAIL PROMOTION & ADVERTISING	<i>3 credits</i>
Prerequisite: 202 or permission. Studio course in retail display and promotion techniques. Window, interior and point of purchase categories; principles of design as applied to commercial art; function in visual design, elements of design, color theory, lettering, printing process, layout to camera-ready art.		
212	PRINCIPLES OF SALES	<i>3 credits</i>
Prerequisite: 101 or permission. Study of basic principles of selling, emphasizing individual demonstrations and sales projects. Includes review of sales function as integral part of marketing process.		
221	ADVERTISING CAMPAIGN	<i>3 credits</i>
Prerequisite: 203. Student will prepare an advertising campaign for a product assigned by the AAF. The campaign may be entered in the AAF national contest.		
240	MARKETING INTERNSHIP	<i>3 credits</i>
Prerequisites: 101, 203, 202, 212. On-the-job work experience in a marketing environment in which students apply learned skills and concepts to practical business situations. Periodic reports and projects required as appropriate.		
254	SALES MANAGEMENT TECHNOLOGY	<i>3 credits</i>
Prerequisite: 212 and 2030:151. Process relating to the formulation, implementation, and control of a strategic sales program. Students will learn how to select, evaluate, and motivate a sales force.		
290	ST: MARKETING & SALES	<i>1-3 credits</i>
(May be repeated for a total of four credits) Prerequisite: permission. Selected topics or subject areas of interest in sales and merchandising.		



Office Admission (2540)

119	BUSINESS ENGLISH	<i>3 credits</i>
Prerequisite: placement test. Fundamentals of English language with emphasis on grammatical correctness, acceptable usage, spelling and punctuation. Limited writing primarily involves choice of precise words and effective sentence structure with some attention to paragraph development.		
121	INTROD TO OFFICE PROCEDURES	<i>3 credits</i>
Introduction to concepts regarding role of office worker, human relations, communications, productivity, reference materials, technological advances in processing information and employment opportunities.		
123	MICROSOFT OUTLOOK	<i>2 credits</i>
Prerequisite: placement by adviser. An introduction to Microsoft Outlook software. Students will learn how to use Outlook for email, contacts, calendaring, making appointments, and instant messaging.		
136	SPEECH RECOGNITION TECHNOLOGY	<i>2 credits</i>
Prerequisite: placement by adviser. Course will present the features of speech-recognition software to assist students to increase their productivity at computer tasks while improving their communication skills.		
138	PROJECT MANAGMENT	<i>2 credits</i>
Prerequisite: placement by adviser. Introductory course that examines elements of projects and project management terminology. Also provides an understanding of Microsoft Project software for managing and evaluating projects.		
143	MICROSOFT WORD-BEGINNING	<i>2 credits</i>
Introduction to word processing software for non-Office Administration majors. Training on personal computers for personal and business communications using Microsoft Word software.		
144	MICROSOFT WORD - ADVANCED	<i>2 credits</i>
Prerequisite: 143 or permission. Intermediate and advanced skills of Microsoft Word to include tables, importation of spreadsheets, outlines, advanced file management, macros, merges, labels and graphics.		
243	INTERNSHIP: OFFICE ADMINISTRN	<i>2-3 credits</i>
Prerequisites: 119; 121; 129; 253; 263; 270; and 281. Work experience in an office environment related to the student's degree major. Application of office administration skills/knowledge.		
253	ADVANCED WORD PROCESSING	<i>3 credits</i>
Prerequisites: 151; Wayne College students: 2540:151 or 144. To increase student's ability to produce office documents on computers. Minimum requirement: 50 wpm with maximum of 5 errors for 5 minutes.		
256	MEDICAL OFFICE PROCEDURES	<i>3 credits</i>
Prerequisite: 2740:120. Simulates a professional medical office which "employs" the student to perform office administration duties and manage office information and finances on specialized computer software.		
273	MICROSOFT POWERPOINT	<i>2 credits</i>
Prerequisites: 140 or 143 or permission. Introduction to the basic principles of preparation, design, and organization necessary to produce exciting and effective PowerPoint presentations using Microsoft PowerPoint.		
279	LEGAL OFFICE PROCEDURES	<i>4 credits</i>
Prerequisite: 2540:121, 144. Provides an understanding of various facets of the law, when and how to use documents, important legal procedures and typical office routine.		
282	MEDICAL MACHINE TRANSCRIPTION	<i>3 credits</i>
Prerequisite: 2540:256. Introduction to medical terminology. Emphasis on meaning, pronunciation, spelling and application of common medical terms, abbreviations, stems and suffixes as related to the human body in computerized transcription. Speed, accuracy, and proofreading skills emphasized.		
284	OFFICE NURSING TECHNIQUES I	<i>2 credits</i>
Prerequisite or corequisite: 2740:120. Provides theory and practice in nursing duties most often performed in a physician's and dentist's office. These include temperature, pulse and respiration reading; and taking blood pressure.		
289	CAREER DVLPMT FOR BUS PROFESS	<i>3 credits</i>
Fundamentals of job search technique, professional image development and personal and interpersonal dynamics within the business environment.		
290	ST: SECRETARIAL SCIENCE	<i>0.5-3 credits</i>
(May be repeated for a total of four credits) Prerequisite: permission. Selected topics or subject areas of interest in office administration.		



Medical Assisting (2740)

120	MEDICAL TERMINOLOGY	<i>3 credits</i>
Study of language used in medicine.		
121	STUDY OF DISEASE PROCESSES	<i>3 credits</i>
Prerequisite: 120. A study of human disease, the disease process, and a review of medical terminology.		
122	EMERGENCY RESPONDER I	<i>1 credits</i>
Theory and practice in recognition and response to emergencies such as breathing difficulty, cardiac arrest, stroke, bleeding, wound care, musculoskeletal injuries, burns, and poisonings.		
126	ADMIN MEDICAL ASSISTING I	<i>4 credits</i>
Theory and practice in administrative competencies such as legal and ethical concepts, professionalism, telephone skills, scheduling and managing appointments, organizing/filing the patient's medical record.		
127	ADMIN MEDICAL ASSISTING II	<i>4 credits</i>
Theory and practice in competencies including financial administration utilizing computerized billing software program. Posting, encounter forms, claims, statements, and aging of accounts will be generated.		
128	BASIC PROCEDURAL CODING	<i>3 credits</i>
Students will learn how to convert medical procedure language into standard Current Procedural Terminology (CPT) and the Health Care Financing Administration Common Procedure Coding System (HCPCS) which are utilized for healthcare reimbursement.		
129	BASIC DIAGNOSTIC CODING	<i>3 credits</i>
This class focuses on converting the diagnostic language learned in Medical Terminology into industry standard character strings for purposes of reimbursement?ICD-9-CM codes.		
135	CLINICAL MEDICAL ASSISTING I	<i>4 credits</i>
Introduction to medical laboratory, theories and procedures essential for a medical assistant's career.		
228	MEDICAL INSURANCE	<i>3 credits</i>
Prerequisites: 120, 128, 129. Theory and practice in billing and collecting for medical services.		
230	BASIC PHARMACOLOGY	<i>3 credits</i>
Overview of drugs used in a medical setting		
235	CLINICAL MEDICAL ASSISTING II	<i>4 credits</i>
Prerequisites: 135. Advanced medical laboratory theories and practices essential for a medical assistant's career.		
242	MEDICAL TRANSCRIPTION II	<i>3 credits</i>
Prerequisites: 2540:119, 151; 120, 240. This course is an advanced medical transcription course. Emphasis will be placed on development of accuracy, speed, and medical knowledge for transcription of medical documents.		
245	MEDICAL EXTERNSHIP	<i>4 credits</i>
Prerequisites: permission from Medical Assisting Program Director and 2.0 accumulative GPA. A seminar course including 200 hours of clinical experience in ambulatory medicine.		
246	MEDICAL ASSISTING PRACTICUM	<i>4 credits</i>
Prerequisites: 126, 127, 135, 235, 230, 2780:106 and 107. This course for Medical Assistants includes 200 hours of practicum experience in ambulatory medicine where the student can perform administrative/clinical procedures with actual patients.		
290	ST: MEDICAL ASSISTING	<i>1-2 credits</i>
Prerequisite: permission. Selected topics or workshops of interest in medical assisting technology.		



Surgical Technology (2770)

100	INTRO: SURGICAL TECHNOLOGY	<i>4 credits</i>
Prerequisite: admission to the program. Study of basic principles which underlie patient care in the operating room. Role of operating room technician and legal and ethical responsibilities defined.		
221	SURGICAL TECHNLGY PROCEDURE I	<i>4 credits</i>
Prerequisite: Admission to the program. Corequisite: 100. Covers principles and practices of surgical asepsis, surgical patients, procedures, maintenance of equipment and materials, immediate postoperative responsibilities and emergency situations in the operating room.		
222	SURGICAL TECHNLGY PROCEDURE II	<i>4 credits</i>
Prerequisite: 221. Corequisite: 232. Principles of surgical asepsis, surgical patients, surgical procedures, maintenance of equipment and materials, immediate postoperative responsibilities and emergency situations in the operating room.		
231	CLINICAL APPLICATION I	<i>2 credits</i>
Prerequisite: Formal admission to the Surgical Assisting Technology Program. Corequisites: 100 and 121. Student assigned to surgical service of affiliated hospitals. Emphasis on aseptic techniques and skills associated with their implementation.		
232	CLINICAL APPLICATION II	<i>5 credits</i>
Prerequisite: 131; Corequisite: 222. Student assigned to surgical service of affiliated hospitals. Emphasis on "scrubbing" on general surgery and gynecology procedures.		
233	CLINICAL APPLICATION III	<i>5 credits</i>
Prerequisites: 232 and 222. Student assigned to surgical service of affiliated hospitals. Emphasis on "scrubbing" in the specialty areas.		
248	SURGICAL ANATOMY I	<i>3 credits</i>
Prerequisites: 2740:120 and 2780:107. Corequisite: 100. Emphasis on human anatomy and understanding the body in its three dimensions and the relationships of parts to one another in the various surgical specialties.		
249	SURGICAL ANATOMY II	<i>3 credits</i>
Prerequisite: 248. Emphasis on human anatomy and understanding the body in its three-dimensions and the relationships of parts to one another in the various surgical specialties.		
290	ST: SURGICAL ASSISTING	<i>1-2 credits</i>
Prerequisite: permission. Selected topics or workshops of interest in surgical assisting technology.		



Allied Health (2780)

106	ANAT & PHYS FOR ALLIED HLTH I	<i>3 credits</i>
Introduction to the study of human structure and function. No laboratory.		
107	ANAT & PHY FOR ALLIED HLTH II	<i>3 credits</i>
Prerequisite: 106. Introduction to the study of human structure and function. No laboratory.		
290	ST: ALLIED HEALTH	<i>1-2 credits</i>
(May be repeated for a total of four credits) Prerequisite: permission. Selected topics or subject areas of interest in allied health.		



Respiratory Therapy (2790)

100	CONCEPTS IN RESPIR THERAPY	<i>3 credits</i>
Prerequisite: 2030:161. Introductory concepts regarding the practice and application of the concepts employed in respiratory therapy, including career information and equipment. (lecture/discussion).		
210	RESPIRATORY THERAPY PROCED I	<i>3 credits</i>
Prerequisites: 100, 2740:120, 2780:106 or 3100:200, 201. Application of oxygen and aerosol therapy equipment. Lecture/laboratory.		
215	RESPIRATORY THERAPY PHARMACLOGY	<i>3 credits</i>
Prerequisites: 100, 3150:110, 111. Pharmacologic actions and effects of medications delivered by respiratory therapists, and routes of administration.		
290	ST: RESPIRATORY CARE	<i>1-3 credits</i>
(May be repeated for a maximum of three credits) Prerequisite: permission. Selected topics or subject areas of interest in respiratory therapy technology.		
301	CARDIOPULMONARY ASSESSMENT TECH	<i>2 credits</i>
Prerequisites: 2780:107 or 3100:202, 203. Overall patient assessment, with concentration on the cardiopulmonary systems. Overview of common illness and related clinical manifestations. Lecture/laboratory.		
302	CARDIOPULMONARY ANATOMY & PHYSIOLOGY	<i>3 credits</i>
Prerequisites: 210, 2780:107 or 3100:202, 203; Corequisite: 2790:301. Study of normal anatomy and physiology of cardiopulmonary systems.		
303	CARDIOPULMONARY PATHOLOGY	<i>4 credits</i>
Prerequisites: 301, 302. Discussion of diseases of the heart and lungs, and their relationship to the role of the respiratory therapist.		
311	RESPIRATORY THERAPY PROCED II	<i>3 credits</i>
Prerequisites: 210, 2780:107 or 3100:202, 203. Airway Care and Lung Inflation Techniques. Lecture/laboratory.		
312	DIAGNOSTICS I	<i>3 credits</i>
Prerequisite: 210; corequisites: 301, 302, 311. Bedside screening studies for the evaluation of cardiopulmonary diseases. Lecture/laboratory.		
313	DIAGNOSTICS II	<i>3 credits</i>
Prerequisites: 311, 312; corequisite: 303. Laboratory diagnostic studies for the evaluation of cardiopulmonary diseases. Lecture/laboratory.		
315	ADV PHARMACLOGY FOR RESP THERAPY	<i>3 credits</i>
Prerequisite: 215. Pharmacologic actions and effects of Cardiopulmonary Medications.		
320	NEONATAL/PED FOR RESP THERAPY I	<i>3 credits</i>
Prerequisite: 301. In depth coverage of neonatal & pediatric respiratory care concepts. Emphasis placed on anatomy and physiology, assessment, and therapeutics.		
325	MECHANICAL VENTILATION	<i>4 credits</i>
Prerequisites: 303, 312, 315, 320 341. Introduction to mechanical ventilation and equipment. Lecture/lab.		
340	APPL OF CLINICAL CONCEPTS	<i>2 credits</i>
Prerequisite: 210; corequisite: 301. Introduction to basic respiratory therapy in a hospital setting, and hands-on practice with respiratory therapy equipment, including CPR for the professional. Lecture/clinical.		
341	RT CLINICAL EXPERIENCE I	<i>3 credits</i>
Prerequisites: 215, 311, 340. Application of clinical procedures in a hospital setting, with emphasis on basic therapeutic interventions. Clinical. 225 clinical hours.		
342	RT CLINICAL EXPERIENCE II	<i>2 credits</i>
Prerequisites: 315, 325, 341. Application of clinical procedures in a hospital setting, with emphasis on mechanical ventilation techniques. 150 clinical hours.		
413	RESP THERAPY IN ALTERNATE SETTING	<i>3 credits</i>
Prerequisite: 313. Pulmonary rehabilitation and home care, as well as care in alternate settings. Lecture/lab.		
420	NEONATAL/PED FOR RESP THERAPY II	<i>3 credits</i>
Prerequisite: 320. Detailed study of airway management, pathophysiology and treatment modalities as they relate to neonatal/pediatrics.		
421	ACLS & PALS	<i>3 credits</i>

Prerequisites: 303, 315, 320, 340 or permission. Advanced Cardiac Life Support and Pediatric Advanced Life Support, with mega codes and case studies.

430	PROBLEMS IN RESPIRATORY THERAPY	<i>4 credits</i>
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Prerequisites: 313, 420, 443. Capstone course, applies the concepts from clinical situations, using computer simulations and cases and evaluates research in Respiratory therapy.

443	RT CLINICAL EXPERIENCE III	<i>4 credits</i>
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Prerequisites: 342. Rotation to a variety of Health care facilities to practice specialty procedures in each institution. 300 clinical hours

444	RT CLINICAL EXPERIENCE IV	<i>4 credits</i>
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Prerequisite: 443. Rotation to a variety of health care facilities to practice specialty procedures from each institution. Clinical (total of 300 hours).



General Technology (2820)

100	INTRO ENGINEERING TECHNOLOGY	<i>2 credits</i>
This introductory course stresses skills needed for academic success. Discussion of fields in engineering technology, job searches, calculators, and data measurement and analysis are included.		
105	BASIC CHEMISTRY	<i>3 credits</i>
Prerequisites: 2010:052 or 057 or 054 with a grade of C or better or 1 year of high school mathematics or placement test. Elementary treatment of facts and principles of chemistry emphasizing biological application. Elements and compounds important in everyday life, biological processes and medicine. Introduction to laboratory techniques. Primarily for medical assistant, criminal justice and allied health students. Laboratory.		
110	PHYSICAL SCIENCE FOR TECHNICNS	<i>3 credits</i>
Elementary presentation of theory and facts of general chemistry and physics (excluding electricity). Includes atomic structure, chemical reactions, energy, electromagnetic radiation, sound and mechanics.		
111	INTRODUCTORY CHEMISTRY	<i>3 credits</i>
Corequisite: 2030:152. Facts and theories of general chemistry. Elements and compounds and their uses. Elementary treatment of atomic structure, gaseous state, periodic table, water, solutions. Laboratory.		
112	INTRO & ANALYTICAL CHEMISTRY	<i>3 credits</i>
Prerequisite: 111 or permission. Chemical equilibria, ionization, radioactivity. Properties of selected metals and nonmetals. Introduction to organic chemistry. Basic concepts of qualitative analysis. Identifications of cations and anions. Laboratory.		
131	SOFTWARE APPLICATION TECHNOLOGY	<i>1 credits</i>
Prerequisite: 2030:151. Word processing, spreadsheet, database, and internet applications in engineering technology. Computer basics also. Limited to students in Engineering & Science Technology Department programs. Laboratory.		
161	TECHNICAL PHYSICS: MECHANICS I	<i>2 credits</i>
Corequisite: 2030:153. Principles of mechanics that include motion, vectors, forces, equilibrium; also significant figures and unit conversions. Laboratory.		
162	TECHNICAL PHYSICS: MECHANCS II	<i>2 credits</i>
Prerequisites: 161, 2030:153. Principles of mechanics that include work, power, conservation of energy, rotational motion, torque. Laboratory.		
163	TECH PHYSICS: ELECT & MAGNETSM	<i>2 credits</i>
Prerequisites: 161; corequisite: 2030:153. Principles of electricity and magnetism. Electrostatics, basic direct current circuits, magnetism and electromagnetism, alternating currents, basic AC circuits. Laboratory.		
164	TECH PHYSICS: HEAT & LIGHT	<i>2 credits</i>
Prerequisites: 161 and 2030:153. Topics include thermal behavior of matter,thermodynamics, light, geometric and physical optics. Introduction to atomic and nuclear physics. Laboratory.		
290	ST: GENERAL TECHNOLOGY	<i>1-2 credits</i>
(May be repeated for a total of four credits.) Prerequisite: Permission. Selected topics of subject areas of interest in General Technology.		
310	PROGRAMMING FOR TECHNOLOGISTS	<i>2 credits</i>
Prerequisites: 131 and 2030:255. A study of a technical programming language with applications in engineering technology. Limited to students in Engineering & Science Technology Department programs.		



Electromechanical Service Technology (2830)

110	ELECTROMECHANICAL DEVICES	<i>4 credits</i>
Prerequisite: 2860:110. Application-oriented study of electromagnetic sensors and the electronic devices and circuits used to implement industrial control sensors.		
210	MOTION CONTROL I	<i>4 credits</i>
Prerequisite: 110. Principles, applications, and troubleshooting of AC and DC electric generators and motors. Introduction to basic mechanical and motion control.		
220	MOTION CONTROL II	<i>3 credits</i>
Prerequisite: 210. Integration of basic devices with the speed and position controlling systems for DC and AC motors, servomotors, stepper motors, and hydraulic valves and cylinders.		
230	MACHINE & PROCESS CONTROL	<i>4 credits</i>
Prerequisite: 110. Introduction to the integration of control components into a complete industrial machine or process control system. Study of the types of systems and the required documentation.		
240	INDUSTRIAL COMPUTER CONTROL	<i>3 credits</i>
Prerequisite: 110. Introduction to digital electronics as it applies to industrial control. Survey of number systems, basic digital devices, microprocessors, microcomputer-based control components.		
250	PROGRAMMABLE CONTROLLERS	<i>3 credits</i>
Prerequisite: 230. Principles of operation, application, and troubleshooting of programmable controllers. Includes programming of ladder logic systems.		
260	ELECTRICAL POWER & WIRING	<i>3 credits</i>
A study of electrical power distribution, residential, commercial, industrial wiring, and electrical safety. Emphasis on the requirements of the National Electrical Code.		
270	TROUBLESHOOTING & REPAIR PRACT	<i>3 credits</i>
Prerequisite: 210, 230. Surveys mechanical, hydraulic, pneumatic, electrical, and electronic troubleshooting and repair practices. Problem isolation, repair, and shop practices are considered. Safety practices are emphasized.		



Polymer Technology (2840)

111	POLYMER TECHNOLOGY I	<i>3 credits</i>
Introduction to chemical and physical structure, properties and applications of polymers. Interaction between materials properties, product design and processing. Characterization of the major processes.		
112	POLYMER TECHNOLOGY II	<i>3 credits</i>
Prerequisite: 111. This course emphasizes the processing of thermoplastics and thermosetting plastics. The laboratory introduces students to some of the major processes and equipment operation.		
202	INSTRUMENTAL METHODS	<i>3 credits</i>
Prerequisites: 2820:111, 2840:111, 2860:110. Instrumentation employed in qualitative and quantitative analysis. Theory and practice in chromatographic, spectrophotometric and other instrumental methods. Laboratory.		
211	POLYMER TECHNOLOGY III	<i>3 credits</i>
Prerequisites: 2820:131, 2840:101, 112. This course emphasizes the testing and characterization of materials used in polymer product fabrication, and the testing and analysis of finished polymer products.		
220	POLYMER DESIGN & PROCESSING	<i>2 credits</i>
Prerequisite: 211. Combines study of polymer properties, processing, and design guidelines to analyze complete manufacturing, testing, and quality assurance programs. Examples of significant applications analyzed in detail.		
260	COMPOUNDING METHODS	<i>2 credits</i>
Principles and methods of selecting and compounding rubber for specific end uses. The compounder's art. Processing and testing of basic elastomers and products. Laboratory.		
281	POLYMER PROJECT	<i>2 credits</i>
Prerequisite: 211. Student teams, choosing their own projects, design a polymeric product, select materials, processes, and simulate design and development of the product. Individual final reports required.		
290	ST: POLYMER TECHNOLOGY	<i>1-2 credits</i>
(May be repeated for a total of four credits) Prerequisite: permission. Selected topics or subject areas of interest in polymer technology.		



Electronic Engineering Technology (2860)

110	BASIC ELEC & ELECTRONICS	<i>4 credits</i>
Corequisite: 2030:151 or 2030:161. Principles of electronics: resistors, inductance, capacitance, transistors, microprocessors, power sources, motors, generators, test equipment, circuit diagnosis, troubleshooting. Credit not applicable toward the A.A.S. in Electronic Technology.		
120	CIRCUIT FUNDAMENTALS	<i>4 credits</i>
Corequisite: 121, 2030:152, 153. SI units, current, voltage, resistance, Ohm's Law, circuit analysis, network theorems, computer simulation, inductor, capacitor, RLC dc analysis, transients, laboratory support of circuit concepts, ac introduction.		
121	INTRO: ELECTRONICS & COMPUTERS	<i>2 credits</i>
Prerequisite: 2030:151 or placement. Corequisite: 2860:120. Supporting 2860:120 Circuit Fundamentals, this course introduces students to computers and software, technical communications, laboratory practices, and to the electronics industry.		
122	AC CIRCUITS	<i>3 credits</i>
Prerequisite: 120; corequisites: 2030:154. Sinusoidal voltage and current, reactance and impedance, methods of AC circuit analysis, AC power, transformers, AC meters and oscilloscopes, dependent and independent sources.		
123	ELECTRONIC DEVICES	<i>4 credits</i>
Prerequisite: 120. Physical theory, characteristics and operational parameters of solid-state devices. Analysis and design of electronic circuits incorporating these devices, utilizing characteristic curves and linear modeling.		
206	PERSONAL COMPUTER MAINTENANCE	<i>4 credits</i>
Corequisite: 217. Personal computer fundamentals, software diagnostics to isolation of hardware faults. Set up, maintain, diagnose, repair, upgrade personal computers. Not applicable towards an EET degree.		
217	SUVEY OF DIGITAL ELECTRONICS	<i>4 credits</i>
Prerequisite: 136. Adders, flip-flops, data storage, counters, shift registers, memory. This course also includes an introduction to computer architecture and hardware. Credit not applicable toward the A.A.S. in Electronic Engineering Technology.		
225	APPLS OF ELECTRONIC DEVICES	<i>4 credits</i>
Prerequisite: 123, 2030:154. Frequency response, filter concepts, electronic amplifiers, power amplifiers, multistage amplifiers, differential amplifiers, operational amplifiers, voltage regulators, feedback and oscillators, special devices, computer simulation analysis.		
231	CONTROL PRINCIPLES	<i>3 credits</i>
Prerequisites: 225, 2030:255. Principles and design for control of physical systems. Mathematical and analog computer modeling of physical systems. Principles of closed-loop control systems. Design of simple servomechanisms.		
237	DIGITAL CIRCUITS	<i>4 credits</i>
Prerequisites: 123 and 136. Devices used in logic circuits, interfacing, combinational logic, arithmetic circuits, encoders, multiplexers, programmable logic devices, flip-flops, counters, shift registers, computer modeling of digital circuits.		
238	MICROPROCESSOR APPLICATIONS	<i>4 credits</i>
Prerequisite: 237. Programmable logic devices, computer modeling of digital circuits, memory circuits. Computer architecture, programming the microprocessor, microprocessor hardware, microprocessor applications, parallel I/O and programmable timers.		
242	MACHINERY & CONTROLS	<i>3 credits</i>
Prerequisites: 120, 121 or 370 (previously 270). Study of DC and AC motors and generators and their control. Fundamentals of power transformers. Three-phase distribution and motor control. Principles of industrial electronic devices.		
251	ELECTRONIC COMMUNICATIONS	<i>4 credits</i>
Prerequisite: 225. Resonance, coupling, filters, oscillators, mixers, power amplifiers, AM, FM, receivers.		
260	ELECTRONIC PROJECT	<i>2 credits</i>
Prerequisites: final semester or permission and 2940:210. Design, construction, and testing of an electronic circuit of choice. Progress reports, oral, and a formal written report required. Discussion of electronic design, fabrication, and troubleshooting techniques.		
280	MICROPROC SERVICE PRACT/SEM	<i>3 credits</i>
Prerequisite: 206, 217. Setup, maintain, diagnose, repair, upgrade personal computers, peripheral devices. Include teamwork, assisting others and review alternative solutions. Not applicable towards an Electronic Engineering Technology degree.		
290	ST: ELECTRONIC ENGR TECHNOLOGY	<i>1-4 credits</i>

Prerequisite: permission of instructor. Directed study in a special field of interest chosen by the student in consultation with the instructor(may be repeated for a total of six credits).

350	ADVANCED CIRCUIT THEORY	<i>3 credits</i>
Prerequisite: 251. Corequisite: 2030:356. Nodal, mesh, Thevenin, and dependent sources in resistive circuits. Inductor and capacitor as time domain elements. First- and second-order circuit analysis. Phasor analysis. Operational amplifier analysis.		
352	MICROCONTROLLERS	<i>4 credits</i>
Prerequisite: 238; corequisite: 350. Using a typical microcontroller, study its architecture, program it, use subroutines and interrupts, use it in various applications, utilize various on-board modules including analog-to-digital, and timers.		
354	ADVANCED CIRCUITS APPLICATIONS	<i>4 credits</i>
Prerequisites: 350, 2030:356, and 2820:310 or 2440:170 or 3460:126 or 2440:256 or 3460:208 or 2440:160 or 4450:208 or 3460:209. Introduction to PSpice. Calculating electrical power. Series and parallel resonance. Laplace transforms in operational circuit analysis. Transfer functions, impulse function, Bode diagrams, Fourier Series.		
370	SURVEY OF ELECTRONICS I	<i>3 credits</i>
Prerequisite: 2820:163. Fundamentals of DC and AC electrical circuits and rotating machinery. For non-Electronic Engineering Technology majors.		
371	SURVEY OF ELECTRONICS II	<i>3 credits</i>
Prerequisite: 370. Survey of the most commonly used solid state circuit components including typical applications. Introduction into digital circuits and microprocessor applications. For non-Electronic Technology majors.		
400	COMPUTER SIMULATIONS IN TECH	<i>3 credits</i>
Prerequisites: 354, 2030:345. Introduce the use of software widely used in industry to simulate and study electrical circuits and signals. Methods of data sampling, management and presentation will be studied.		
406	COMMUNICATION SYSTEMS	<i>3 credits</i>
Prerequisites: 251 and 354. Digital communications, transmission lines, waveguides, microwave devices and antennas.		
420	BIOMED ELECTRONIC INSTRTN	<i>3 credits</i>
Prerequisite: 354. Introduction to electrical signals from the body, transducers, recording devices, telemetry, microprocessor applications, and electrical safety of medical equipment.		
430	SENIOR TOPICS ELECTRONIC TECH	<i>3 credits</i>
Prerequisites: 354, 400. Study of advanced topics in electronic technology.		
451	INDUSTRIAL ELECTRICAL SYSTEMS	<i>3 credits</i>
Prerequisites: 354. Electric power, industrial nameplates, power factor correction, mutual inductance, linear transformers, power transformers, polyphase systems, per-phase analysis, system grounding, protective device coordination computer-aided analysis.		
453	CONTROL SYSTEMS	<i>4 credits</i>
Prerequisites: 354, 2870:301. Modeling and responses of closed-loop systems. Laplace transforms, root-locus analysis. Stability, compensation, digital control, optimal control. Digital computer in system simulation and design.		
490	ST: ELECTRONIC ENGR TECHNOLOGY	<i>1-4 credits</i>
Prerequisite: permission of instructor. Directed study in a special field of interest chosen by the student in consultation with the instructor (may be repeated for a total of six credits).		
497	SR HONORS PROJ: ELECTRON TECHN	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program, permission of department preceptor and major in electronic technology. Independent research leading to completion of Senior Honors Thesis or other original work.		



Automated Manufacturing Engineering Technology (2870)

301	COMP CNTRL AUTOMATED SYS	<i>3 credits</i>
The development of computer based systems and computer programs using robotics and machine controllers as the solutions for automated manufacturing problems.		
311	FACILITIES PLANNING	<i>3 credits</i>
Prerequisite: 2940:180 or 2940:210 or permission. An application based study of facilities analysis, design and layout utilizing software based solutions.		
332	MGMT OF TECH BASED OPERATIONS	<i>3 credits</i>
A study of the techniques and knowledge necessary to effectively manage technical personnel.		
348	CNC PROGRAMMING I	<i>3 credits</i>
Prerequisites: 2940:121, 2030:154; or permission. Introduction to numerical control (N/C) of operation of machine tools and other processing machines. Includes programming, types of N/C systems, economic evaluation.		
441	ADVANCED QUALITY PRACTICES	<i>3 credits</i>
Prerequisites: 2880:241 or permission. Specific quality assurance procedures will be developed conceptually, proven mathematically, and then tested in lab exercises. Industry accepted SQC software will be used.		
448	CNC PROGRAMMING II	<i>3 credits</i>
Prerequisite: 348. Introduction to computer-assisted interactive part programming system. Writing of milling and drilling programs.		
470	SIMULATION OF MFG SYSTEMS	<i>3 credits</i>
Prerequisite: 2880:211. Computer simulation solutions applied to the traditional manufacturing problems of equipment justification production line balancing, and capacity planning.		
480	AUTOMATED PRODUCTION	<i>3 credits</i>
Prerequisites: 2880:211 or senior status. A study of the automated production system. The various systems studied thus far, CNC, robotics, automated machines via PLCs, and facilities design, are integrated and analyzed from a production standpoint. The issues of line balance, reliability, queue sizing, and personnel matters are included.		
490	MANUFACTURING PROJECT	<i>2 credits</i>
Prerequisite: Senior status. Advanced CAD/CAM topics are presented. A comprehensive project is undertaken.		
495	INDIV INVEST MANUFAC ENGR TECH	<i>2 credits</i>
Selected topic(s) that provide for specific individual study in the area of manufacturing engineering technology under the direct supervision of a faculty member.		
496	ST: MANUFACTURING ENGR TECH	<i>1-3 credits</i>
Prerequisite: permission. Selected topic(s) that provide for specific course work in the area of manufacturing engineering technology offered once or only occasionally in areas where no formal course exists.		
499	W: MANUFACTURING ENGR TECH	<i>1-3 credits</i>
Prerequisite: permission. Group studies of special topics in manufacturing engineering technology.		



Manufacturing Engineering Technology (2880)

100	BASIC PRINCIPLES OF MFG MGMT	<i>4 credits</i>
A survey of basic concepts of management and their interrelationships to a manufacturing environment. Includes production control, quality control, work measurement, and employee motivation.		
110	MANUFACTURING PROCESSES	<i>3 credits</i>
Study of the machines, methods, and processes used in manufacturing.		
130	WORK MEASUREMENT & COST ESTIM	<i>3 credits</i>
Prerequisite: 100. Time and motion study. Development of accurate work methods and production standards, and their relationship to manufacturing cost estimates.		
151	INDUSTRL SAFETY & ENVIR PROTEC	<i>2 credits</i>
A contemporary overview of the science and management of occupational health and safety programs, policies, and procedures in an industrial and business type environment.		
201	ROBOTICS & AUTOMATED MFG	<i>3 credits</i>
Prerequisite: 100 or permission of instructor. Study of manufacturing automation and the computer-based products and processes available for this task. Robots, machine controllers, and machine/process interfaces are investigated.		
211	COMPUTERIZED MFG CONTROL	<i>3 credits</i>
Prerequisite: 100. Processing of production order by computer through requisitioning, plant loading, expediting, scheduling and shipping of product. Creation on computer of material requisitions, plant schedules, sent-to-stocks and shipping orders as by-products of processing production order.		
232	LABOR MANAGEMENT RELATIONS	<i>3 credits</i>
Prerequisite: 100. Study of historical background of labor movement, management viewpoints, legal framework for modern labor organizations and collective bargaining process.		
241	INTRODUCTION TO QUALITY ASSURA	<i>3 credits</i>
Prerequisite: 100 and 2030:152. Theory and practice of inspection and sampling techniques for measurement of quality, QC charts, sampling plans, mill specs, checking machine capabilities, and setting tolerances.		
290	ST: INDUSTRIAL TECHNOLOGY	<i>1-2 credits</i>
(May be repeated for a total of four credits) Prerequisite: permission. Selected topics or subject areas of interest in industrial technology.		



Mechanical Engineering Technology (2920)

100	SURVEY OF MECHANICAL ENGR TECH	<i>2 credits</i>
Overview of the Mechanical engineering Technology degree programs; pre-testing; career opportunities; professional societies & certification; standards; and useful tools of the MET field.		
101	INTRO TO MECHANICAL DESIGN	<i>3 credits</i>
Prerequisite: 2940:121; corequisite: 2030:154. Topics in engineering drawing: conventions, sections, dimensioning and tolerancing. Detail drawings, subassembly and assembly drawings. Manufacturing processes. Descriptive geometry. Drawing mechanical components.		
130	INTRO TO HYDRAULICS & PNEUM	<i>3 credits</i>
Principles of hydrostatic forces, pressure, density, viscosity, incompressible and compressible fluids. Principles of hydraulic and pneumatic devices and systems.		
142	INTRO TO MATERIAL TECHNOLOGY	<i>3 credits</i>
Fundamental properties of materials. Material testing. Applications of methods to control material properties.		
243	KINEMATICS	<i>3 credits</i>
Prerequisite: 2990:125; Corequisite: 2920:101. Study of rigid-body motions of simple linkages, cams, gears, and gear trains. Vector solutions emphasized. Industrial applications presented and computers used to analyze mechanisms.		
245	MECHANICAL DESIGN II	<i>5 credits</i>
Prerequisites: 2940:210, 2990:241; Corequisite: 2920:142, 243. Design of machine elements: springs, shafts, fasteners, welded joints. Combined stress and fatigue analysis. Design projects. Experimental stress analysis.		
249	APPLIED THERMAL ENERGY I	<i>2 credits</i>
Prerequisites: 2030:255, 2820:164. Thermodynamic principles. Study of power cycles. Applications in I.C. engines, compressors, steam power cycles, refrigeration.		
251	FLUID POWER	<i>2 credits</i>
Prerequisites: 2820:162, 164. Statics and dynamics of fluids. Viscosity, energy and momentum relationships. Fluid machinery and measurements.		
252	THERMO-FLUIDS LABORATORY	<i>1 credits</i>
Prerequisite: 251; corequisite: 249. Laboratory experiments in applied thermal energy and fluid power.		
290	ST: MECHANICAL ENGR TECHNOLOGY	<i>1-3 credits</i>
(May be repeated for a total of four credits) Prerequisite: permission. Selected topics or subject areas of interest in Mechanical Engineering Technology.		
310	ECONOMICS OF TECHNOLOGY	<i>3 credits</i>
Prerequisite: 64 credits or permission. Economic principles as they pertain to technology. Equivalence, alternatives, costs, depreciation, valuation. Project studies.		
336	WELDING PROJECTS	<i>1 credits</i>
Prerequisite: 335. Individual projects containing elements of analysis, design and laboratory implementation.		
344	DYNAMICS	<i>3 credits</i>
Prerequisites: 243; 2030:255; 2990:125. Introduces particle dynamics, displacement, velocity, and acceleration of constrained rigid bodies in plane motion. Kinetics of particles and rigid bodies, work and energy, mechanical vibration.		
346	MECHANICAL DESIGN III	<i>4 credits</i>
Prerequisites: 244, 245; 2820:310. Continuation of design of mechanical components: gears, bearings, brakes, and clutches. Special topics presented will be coordinated with assigned design projects.		
347	PRODUCTION MACHINERY & PROCESS	<i>3 credits</i>
Prerequisites: 245 and 2030:255. Study of manufacturing processes (casting, forging, welding, forming sheet metal), integrating material technology, mechanical design, and mechanics of materials.		
365	APPLIED THERMAL ENERGY II	<i>3 credits</i>
Prerequisites: 249, 251, 2030:255. Review and application of basic thermodynamic principles used in designing automotive engines and refrigeration equipment. Introduction to heat transfer, heating, ventilation, and air conditioning.		
370	PLASTICS DESIGN & PROCESS	<i>3 credits</i>
Prerequisites: 2820:111 or higher. Introduction to structure and properties of polymers, selection based on properties and cost, design of products and tools, basic principles of the major processes.		
402	MECHANICAL PROJECTS	<i>1 credits</i>
Prerequisite: senior standing. Individual projects emphasizing creative technical design.		
405	INTRO TO INDUST MACH CONTROL	<i>3 credits</i>

Prerequisite: 2860:370 (previously 270). Principles and design of industrial machine control systems. Application oriented study of typical control devices. Utilization of programmable controllers as the system logic controllers.

470 **PLASTICS PROCESS & TESTING** *2 credits*

Prerequisites: 370 or permission. Use of basic polymer testing methods. Setup and operation of modern molding and extrusion equipment. Basic troubleshooting procedures. Study of processing effects on final properties.

490 **MECH ENGR TECH SENIOR SEMINAR** *1 credits*

Prerequisite: Senior Standing. An opportunity for post-testing of all MET students and the presentation of social and professional responsibilities, diversity, professional certification, life-long learning, and career opportunities.

497 **SR HNR PRJCT IN MECH ENGR TECH** *1-3 credits*

(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program, permission of area honors preceptor and major in mechanical technology. Independent research leading to completion of senior honors thesis or other original work.

498 **INDP STUDY: MECH ENGR TECH** *1-4 credits*

Prerequisite: department permission. Directed study in a special field of interest chosen by the student in consultation with the instructor (may be repeated for a total of six credits).



Drafting and Computer Drafting Technology (2940)

121	TECHNICAL DRAWING I	<i>3 credits</i>
Lettering and proper use of drawing instruments; freehand sketching; geometric drawing; orthographic projection; auxiliary views, sections, pictorials; introduction to basic descriptive geometry.		
122	TECHNICAL DRAWING II	<i>3 credits</i>
Prerequisite: 121, 210. Covers dimensioning; allowances and tolerances; geometric tolerancing; threads and fasteners; descriptive geometry; intersections; developments; and computer applications.		
150	DRAFTING DESIGN PROBLEMS	<i>2 credits</i>
Prerequisite: 2030:152. Introductory course in basic concepts in engineering technology computations. A study of technical terminology and applied mathematics.		
170	SURVEYING DRAFTING	<i>3 credits</i>
Corequisite: 2030:152 or permission. Drafting procedures, techniques, and tools required for the various phases of survey office work. Projects include topographic maps, plan and profile drawings, and cross-section drawings.		
180	INTRODUCTION TO CAD	<i>1 credits</i>
Drafting techniques using AutoCAD. Topics include drawing, editing, dimensioning, plotting, layers and text. Credit not applicable toward the AAS in Drafting and Computer Aided Drafting Technology.		
200	ADVANCED DRAFTING	<i>3 credits</i>
Prerequisite: 122. Principles of descriptive geometry applied to practical problems pertaining to the civil and mechanical fields of technology.		
210	COMPUTER AIDED DRAWING I	<i>3 credits</i>
Drafting procedures and techniques used for creating drawings using AutoCAD software. Topics include basic components, drawing, editing, dimensioning, layers, text, blocks, plotting, and hatch.		
211	COMPUTER AIDED DRAWING II	<i>3 credits</i>
Prerequisite: 2940:210. Continuation of 2940:210. This course covers advanced topics in the use of AutoCAD. Those topics include UCS, VPoint, DView, wire frames, Boolean functions, customization, and AutoLISP.		
230	MECHANICAL SYSTEMS DRAFTING	<i>3 credits</i>
Prerequisite: 122. Drawing fundamentals and terminology of welding, gears, cams, piping, sheet metal, and fluid power drawings.		
240	ELECTRICAL & ELECTRONIC DRFTG	<i>3 credits</i>
Corequisite: 122. Drafting fundamentals, terms, and symbols required for electrical, electronics, and instrumentation drawings. Included are interconnecting diagrams, PC boards, and architectural and industrial plans.		
245	STRUCTURAL DRAFTING	<i>2 credits</i>
Prerequisite: 121, 210 or equivalent. Duties of the structural draftsman in preparation of detailed working drawings for steel and concrete. Emphasis on portrayal, dimensions, and notes on a working drawing.		
250	ARCHITECTURAL DRAFTING	<i>3 credits</i>
Prerequisite: 121. Drawing fundamentals, terminology, and symbols for developing a set of basic construction plans and details. Included also are presentation drawings and interior and exterior planning.		
260	DRAFTING TECHNOLOGY PROJECT	<i>3 credits</i>
Prerequisite: Completion of 20 credits of 2940. Provides opportunity to research and develop a specific drafting project within chosen field of interest.		
290	ST: DRAFTING TECHNOLOGY	<i>1-3 credits</i>
(May be repeated for a total of three credits) Prerequisite: permission. Selected topics on subject areas of interest in drafting technology.		



Surveying and Mapping (2980)

100	INTRODUCTION TO GEOMATICS	<i>2 credits</i>
An introductory course into the field of surveying and mapping technology. Integrated topics include: types of surveys, cartography, and geographic information systems.		
101	BASIC SURVEYING	<i>3 credits</i>
Corequisites: 2030:153. Care and use of basic surveying field instruments and the basic computations and adjustments necessary to post process the field survey measurements.		
102	TOPOGRAPHIC SURVEYING	<i>2 credits</i>
Prerequisites: 101 and 2030:153. Computations and adjustments of field survey measurements using both conventional and computer methods. Development of maps and plans stressed.		
122	ELEMENTARY SURVEYING	<i>3 credits</i>
Elementary surveying for non-surveying and construction majors. Basic tools and computations. Field practice.		
123	SURVEYING FIELD PRACTICE	<i>2 credits</i>
Prerequisite: 102 or equivalent. Practical experience in use of surveying equipment and methods of surveying. Provides students with responsibility for making decisions and planning and directing complete project.		
222	CONSTRUCTION SURVEYING	<i>3 credits</i>
Prerequisite: 102; corequisite: 2940:210. Methods and procedures for establishing line and grade for construction. Circular and parabolic curves. Cross-sectioning methods earthwork., communication and plan reading. Field practice.		
223	FUNDAMENTALS OF MAP PRODUCTION	<i>3 credits</i>
Introduction to the art and science of maps and map production. Course includes the history of mapping and an overview of the field of cartography.		
225	ADVANCED SURVEYING	<i>3 credits</i>
Prerequisite: 228. Introduction to topographic mapping, flood maps, and ALTA surveys. Advanced topics in control surveys, State Plane Coordinates, and bearings from celestial observations. Field practice.		
228	BOUNDARY SURVEYING	<i>3 credits</i>
Prerequisites: 102, 355, 2940:170 or equivalent. Analysis of evidence and procedures for boundary location; establishing and/or locating points for boundary and mortgage location surveys; plat preparation. Ohio survey minimum standards.		
251	CST SEMINAR	<i>1 credits</i>
Prerequisite: 225. Prepares students for the National Society of Professional Surveyors Certified Surveying Technician Examination. Examination is given at the end of the review.		
310	SURVEY COMPUTATIONS & ADJUST	<i>2 credits</i>
Prerequisite: 222, 223. Concepts relating to measurement error, probability, and reliability. Computation and adjustment of horizontal and vertical networks.		
315	BOUNDARY CNTRL & LGL PRIN	<i>3 credits</i>
Prerequisite: 12 credits in surveying courses or permission. Historical development of boundaries, rectangular system of public land surveys, systems to describe property, wording and interpretation of deed descriptions, surveyor's rights, duties and responsibilities.		
325	OSHA SAFETY REQ FOR SURVEYORS	<i>1 credits</i>
To provide OSHA safety training and certification required for surveying companies.		
330	APPLIED PHOTOGRAMMETRY	<i>3 credits</i>
Prerequisite: 355. An introduction to metrical and quantitative photogrammetry using both hard- and soft-copy systems. Laboratory.		
335	THE BUSINESS OF SURVEYING	<i>2 credits</i>
A course focused on the business aspects of surveying, including development of business plan components for a company offering professional surveying and mapping services.		
340	CADASTRAL SURVEYING	<i>2 credits</i>
Prerequisites: 101 or 4300:230. A study of the official surveys of the United States. Cadastral surveys establish or recreate boundaries and /or tracts of land.		
355	COMPUTER APPLICTN IN SURVEYING	<i>3 credits</i>
Use of current surveying software to solve typical problems/projects in surveying technology.		
415	LEGAL ASPECTS OF SURVEYING	<i>3 credits</i>
Prerequisite: 315. A study of statute and common law related to land surveying. Case studies related to legal precedent and the surveyor's role in the judicial process.		

420	ROUTE SURVEYING	<i>3 credits</i>
Prerequisite: 225. Surveying for long but narrow strips of land such as highways, railroads, and pipe lines. Course includes all requisite calculations and drawings.		
421	SUBDIVISION DESIGN	<i>3 credits</i>
Prerequisite: 222, 315. Site analysis, land use controls, and plotting procedures. Laboratory includes preparation of various types of projects leading to a complete subdivision.		
422	GPS SURVEYING	<i>3 credits</i>
Prerequisites: 225, 2985:101 or permission. Introduction to the Global Positioning System (GPS). Course includes the planning, data collection, and processing of GPS data.		
425	LAND NAVIGATION	<i>3 credits</i>
Interpretation and use of topographic maps. Study of basic map elements with emphasis on identification of features and coordinate systems. Map use for land navigation.		
426	HISTORY OF SURVEYING TO 1785	<i>2 credits</i>
A history of land surveying. Emphasis on the development of survey procedures through history. Part I (to 1785) covers the ancient world to the colonial period.		
427	OHIO LANDS	<i>2 credits</i>
Study of the history of the original Ohio Land Subdivisions		
428	HIST OF SURVEYING SINCE 1785	<i>2 credits</i>
A history of land surveying. Emphasis on the development of survey procedures through history. Part II (Since 1785) covers the history of the United States to date.		
430	SURVEYING PROJECT	<i>3 credits</i>
Prerequisite: senior standing and permission. Provides opportunity to research and develop a specific surveying project within chosen area of surveying. Oral, written and graphical presentation of completed project(s).		
431	SENIOR SEMINAR	<i>2 credits</i>
Prerequisite: Senior standing. Students demonstrate knowledge and skills acquired as surveying majors through assessment testing and review of professional licensure laws. Preparation for national exams.		
445	APPLICATIONS IN GIS USING GPS	<i>3 credits</i>
Prerequisite: 2985:101. Advanced instruction in GIS applications using GPS as well as other surveying and mapping methods. Laboratory.		
450	TOPICS: PROFESSIONAL PRACTICE	<i>2 credits</i>
Prerequisite: Junior standing. Topics in applicational areas of surveying from the point of view of the practitioner and the consumer of land-related data.		
489	ST: SURVEYING	<i>1-3 credits</i>
Prerequisite: permission. Special lecture/laboratory courses offered once or only occasionally in areas where no formal course exists. (May be repeated for a maximum of six credits.)		
490	W: SURVEYING	<i>1-3 credits</i>
Prerequisite: permission. Group study of special topics in surveying. May not be used to meet undergraduate major requirements in surveying. May be used for elective credit only. (May be repeated for a maximum of six credits.)		
495	INTERNSHIP:SURVEYING & MAPPING	<i>3 credits</i>
Prerequisite: 64 hours in program and permission from program director. Supervised work experience in surveying and mapping to increase student understanding of surveying and mapping technology.		
497	SURVEYING IN HONORS PROJECT	<i>3 credits</i>
Prerequisites: Senior Studies as an honor student. Provides opportunities to research and develop a specific surveying project within chosen area of surveying. Oral, written , and geographical presentation of completed projects.		
498	INDEPENDENT STUDY	<i>1-3 credits</i>
Prerequisites: permission of instructor. Directed study in a special field of interest chosen by student in consultation with instructor (may be repeated for a total of six credits).		



Geographic and Land Information Systems (2985)

101	INTRO TO GEOG & LAND INFO SYST	<i>3 credits</i>
Introduction to the principles and concepts of Geographic and Land Information Systems used in surveying and mapping applications. Laboratory.		
151	GIS ESSENTIAL SKILLS	<i>3 credits</i>
Prerequisites: 101 or permission from instructor. Continued instruction and hands-on emphasis on common skills used in the GIS industry. Skills: Creating reference maps, geocoding, digitizing, reports and mapbooks. Laboratory.		
201	INTERMED GEOG & LAND INFO SYS	<i>3 credits</i>
Prerequisite: 101. Continued instruction in the hands-on technical applications of Geographic and Land Information Systems. Laboratory.		
205	BUILDING GEODATABASES	<i>3 credits</i>
Prerequisite: 101 or equivalent. Introduction and application of spatial geodatabases. The student will create, use, and manage geodatabases. Geodatabases are used for storing spatial and attribute data. Laboratory.		
210	GEOG & LAND INFO SYS PROJECT	<i>3 credits</i>
Prerequisites: 101. Practical application and presentation techniques using the principles and concepts of cartography and geographic information systems. Laboratory.		
280	TOPICS: PROFESSIONAL PRACTICE	<i>2 credits</i>
Topics in applicational areas of Geographic and Land Information Systems (GIS/LIS) from the point of view of the practitioner and the consumer.		
290	ST: GEOGRAPHIC & LAND INFO SYS	<i>1-3 credits</i>
Prerequisite: Permission of instructor. Special lecture/laboratory courses offered once or only occasionally in areas where no formal course exists.		
291	GEOG & LAND INFO SYS INTERNSHP	<i>3 credits</i>
Prerequisite: Permission of Program Director. Supervised professional experience in GIS/LIS agencies or related setting.		
295	WORKSHOP: GEOG & LAND INFO SYS	<i>1-3 credits</i>
Prerequisite: Permission of instructor. Group studies of special topics in GIS/LIS. May be used for elective credit only to a maximum of three credits.		
299	INDEPENDENT STUDY	<i>1-3 credits</i>
Prerequisite: Permission of instructor. Directed study in a special field of interest chosen by the student in consultation with the instructor.		
301	EXPLORING ARCGIS EXTENSIONS	<i>3 credits</i>
Prerequisites: 101 or permission from instructor. Specialized instruction and laboratory exercises in working with the ArcGIS extensions, Spatial Analyst, 3-D Analyst and Network Analysis. Laboratory.		



Construction Engineering Technology (2990)

125	STATICS	<i>3 credits</i>
Prerequisites: 2820:162, 2030:153. Forces, resultants, and couples. Equilibrium of force systems. Trusses, frames, centroid, moment of inertia, and friction.		
131	BUILDING CONSTRUCTION	<i>2 credits</i>
Materials and methods used in construction. Encompasses buildings constructed with wood, steel, concrete or a combination of these materials.		
150	PLAN READING	<i>2 credits</i>
Prerequisite: 131. The language of construction. Symbols, scales, plan views, elevation views, sections and details. Quantity take-off estimation.		
225	STRENGTH OF MATERIALS	<i>3 credits</i>
Prerequisite: 125. Stress, strain and stress-strain relationships. Tension, compression, torsion, beams. Shear and moment diagrams. Combines stresses.		
234	ELEMENTS OF STRUCTURES	<i>3 credits</i>
Prerequisite: 125 and 225. Principles of stress and structural analysis, concepts of steel, timber design, and reinforced concrete.		
237	MATERIALS TESTING I	<i>2 credits</i>
Prerequisite: 2030:153. Laboratory testing of soils with emphasis on physical properties of soil. Laboratory and field procedures used for quality control.		
238	MATERIALS TESTING II	<i>2 credits</i>
Prerequisite: 2030:153. Mix design of concrete. Laboratory testing of concrete containing ordinary Portland cement and pozzolanic admixtures. Experiments demonstrate physical properties as related to design and quality control.		
245	CONSTRUCTION ESTIMATING	<i>3 credits</i>
Prerequisite: 150 and 2030:153. Quantity takeoffs in construction to include mass excavations, foundation systems, structural steel, residential construction, and various commercial construction methods.		
246	SITE ENGINEERING	<i>3 credits</i>
Prerequisites: 131 and 2980:101. Development of a site including surveying, excavation, soil treatment, heavy equipment requirements, storm water management, pavement design, and construction of roadways.		
310	RESIDENTIAL BLDG CONSTRUCTION	<i>3 credits</i>
Introduction to building design, wood framing, and mechanical systems as commonly found in residential housing.		
312	NEIGHBORHOOD REVITALIZATION PR	<i>3 credits</i>
Residential construction and inspection knowledge used to perform field work, service projects, and written inspection reports.		
320	ADVANCED MATERIALS TESTING	<i>3 credits</i>
Prerequisite: 241. This course investigates the usage of precision strain gage applications used by technicians in determining stresses in structural elements and mechanical parts.		
351	CONSTRUCTION QUALITY CONTROL	<i>3 credits</i>
Prerequisites: Admission into the BCET program or permission of instructor. Overview of quality control concepts and techniques as related to the construction industry including the necessary statistical tools; exposes students to civil, mechanical and electrical inspection requirements.		
352	FIELD MANAGEMENT & SCHEDULING	<i>2 credits</i>
Prerequisites: 245 or permission. Planning, scheduling, and controlling of field work within time and cost constraints. Manual methods and computer software packages studied.		
354	FOUNDATION CONSTRUCTION METHOD	<i>3 credits</i>
Prerequisites: 234, 237. Soil mechanics and soils exploration as related to construction. Foundation construction methods and practice in the interest of safety and suitable economy.		
355	COMPUTER APPLS IN CONSTR	<i>3 credits</i>
Prerequisite: 2820:131. Work includes visual basic programming, software packages for construction management, presentation software, and website development.		
356	SAFETY IN CONSTRUCTION	<i>2 credits</i>
The purpose of this course is to explain what creates hazards and why, and to suggest where to anticipate trouble in each phase of the work as it progresses.		
358	ADVANCED ESTIMATING	<i>3 credits</i>

Prerequisite: 245 or permission of instructor. This course focuses on estimating and bidding for public and private construction. Includes heavy/highway, residential and building construction with use of computer software to facilitate bid price.

359	CONSTRUCTION COST CONTROL	<i>3 credits</i>
Prerequisite: 6200:201 or 2420:211. Course develops a practical understanding of the latest managerial accounting principles and practices as they apply to the construction business.		
360	ADMIN OF PUBLIC PROJECTS	<i>3 credits</i>
Prerequisite: Must have completed a minimum of 64 credit hours. Course focus is on the specialized administrative procedures required for public construction projects.		
361	CONSTRUCTION FORMWORK	<i>3 credits</i>
Prerequisite: 234 or permission. Introduction to design and construction of formwork and temporary wood structures.		
362	ADVANCED ELEMENTS OF STRUCTURE	<i>3 credits</i>
Prerequisite: 234. This course examines advanced topics in structural engineering and is an extension of Elements of Structures.		
371	GREEN & SUSTAINABLE BUILD PRAC	<i>3 credits</i>
This course is designed to provide an understanding of sustainable construction practices and their importance on environmental issues.		
420	HYDROLOGY AND GROUNDWATER	<i>3 credits</i>
Prerequisite: 2030:154. The topics addressed include the impact of rainfall events on civil facilities and groundwater flow as it relates to the natural water supply.		
453	LEGAL ASPECTS OF CONSTRUCTION	<i>2 credits</i>
Prerequisite: Admission into the BCET program or permission of instructor. Study of business of contracting and subcontracting and legal problems therein such as breach, partial performance, payment, insolvency, subsurface. Review of standard contracts and construction industry rules of arbitration.		
455	COMPUTER PRECISION ESTIMATING	<i>3 credits</i>
Prerequisite: 245. Students will explore sophisticated software programs utilized by the construction industry to prepare estimates and bid packages.		
462	MECHANICAL SERVICE SYSTEMS	<i>3 credits</i>
Introduction to materials and equipment used in mechanical heating, ventilating, air conditioning, water and waste systems.		
463	ELECTRICAL SERVICE SYSTEMS	<i>3 credits</i>
Introduction to materials and equipment in electrical systems of buildings. Includes illumination, electrical sources, materials and distribution. Emphasis of fire safety.		
465	HEAVY CONSTRUCTION ESTIMATING	<i>3 credits</i>
Prerequisite: 245. Quantity takeoffs and cost analysis to include methods, systems, and equipment relevant to heavy highway and civil infrastructure projects.		
466	HYDRAULICS	<i>3 credits</i>
Prerequisite: 2030:255. Introduction to hydrology. Flow in closed conduits and open channels, distribution, systems, storage requirements and basic concepts of hydraulic structures. Basic concepts of seepage and working knowledge of pumps.		
468	CONSTRUCTION MANAGEMENT	<i>3 credits</i>
Prerequisites: 352, 358. Construction Management takes established construction practices, current technological advances, and latest management methods and makes them into an efficient, smooth working system.		
469	CONTRACTS AND SPECIFICATIONS	<i>2 credits</i>
Prerequisite: Admission to BSCET program or permission. This course studies the principles and applications of construction specifications, contracts, processes for managing professional risk and increasing economic performance of the construction process.		
471	UNDERSTANDING LEED GUIDELINES	<i>3 credits</i>
Prerequisite: 2990:371 or permission of instructor. Provides an understanding of LEED guidelines and requirements and help prepare the student for the LEED associate exam.		
479	CPC SEMINAR	<i>3 credits</i>
Prerequisite: Must be of senior level status towards a B.S. Degree in Construction Engineering Technology or permission of instructor. This course prepares students for the content and format of the Certified Professional Constructor's Examination.		
489	ST: CONSTRUCTION	<i>1-3 credits</i>
Prerequisite: permission of instructor. (May be repeated for up to six credits.) Special lecture/laboratory courses offered once or only occasionally in areas where no formal courses exist.		
490	W: CONSTRUCTION	<i>1-3 credits</i>
Prerequisites: permission of instructor. (May be repeated for up to six credits.) Group studies of special topics in construction. May not be used to meet undergraduate major requirements in construction. May be used for elective credit only.		
497	HONORS PROJECT	<i>1-3 credits</i>

Prerequisite: Senior standing in Honors College and permission of supervising faculty in student's degree field and pursuit of major in CET. Individual Senior Honor's Project relevant to student's major field of study. Specific projects are approved and supervised by a designated member of the faculty in the student's degree field.

498

INDP STUDY: CONSTRUCTION

1-3 credits

Prerequisite: permission of instructor. (May be repeated for up to six credits.) Directed study in a special field of interest chosen by student in consultation with instructor.



Radiologic Technology (2760)

141	ANATOMY & POSITIONING I	<i>3 credits</i>
Prerequisites: 2780:106, 107 and admission to the program. Radiographic anatomy and positioning of skeletal systems, including introductory cross-sectional anatomy. Identification of correct & incorrect positioning including remedies.		
142	ANATOMY & POSITIONING II	<i>3 credits</i>
Prerequisite: 141. Radiographic anatomy and positioning of various body systems in all planes, including cross-sectional anatomy. Identification of correct & incorrect positioning, including remedies.		
151	METHODS OF PATIENT CARE I	<i>2 credits</i>
Prerequisite: Admission to the program. Covers basic radiologic patient care and professionalism issues. Includes surgical aseptic training for performing radiographic images in the operating room.		
152	METHODS OF PATIENT CARE II	<i>1 credits</i>
Prerequisite: 151. Addresses patient care considerations for medical emergencies, patients receiving contrast media, alternative medical treatments. Overview of pharmacology and drug administration.		
161	RADIOLOGIC PHYSICS & PRINCPL I	<i>3 credits</i>
Prerequisites: 2780:106, 107 and Admission to the program. Orientation to radiologic sciences. Introduction to systems of measurement, physics, electromagnetism, and components of the x-ray tube. Also includes electricity, radiation physics, and radiation protection.		
162	RADIOLOGIC PHYSICS & PRINCP II	<i>3 credits</i>
Sequential. Prerequisite: 161. Discussion of radiologic factors involved in producing quality radiographs. Review of various radiographic components and their influences on photographic technique. Includes quality assurance testing.		
171	CLINIC CLASS I	<i>1 credits</i>
Prerequisite: Admission to the program. Corequisite: 181. Review of the clinical site-specific radiographic positioning of the skeletal system. Also includes mobile & surgical radiography.		
172	CLINIC CLASS II	<i>1 credits</i>
Prerequisite: 171. Corequisite: 182. Review of the clinical site-specific radiographic positioning of various body systems. Includes mobile & surgical radiography.		
181	CLINICAL I	<i>3 credits</i>
Prerequisite: Admission to the program. Corequisite: 171. Hands-on application of didactic anatomy & positioning lessons in learning how to image the skeletal system. Includes mobile & surgical radiography.		
182	CLINICAL II	<i>3 credits</i>
Prerequisite: 181. Corequisite: 172. Hands-on application of didactic anatomy & positioning lessons in learning how to image the various body systems. Includes mobile & surgical radiography.		
192	RADIOBIOLOGY	<i>2 credits</i>
Prerequisite: 161. Corequisite: 162. History and development of federal and state radiation standards. Identifying natural vs. artificial radiation sources. Includes applications of diagnostic imaging and therapeutic radiation modalities.		
221	CLINICAL EXPERIENCE	<i>0 credits</i>
Prerequisite: admission to the Radiologic Technology program. Off-campus clinical course. May be repeated as needed.		
252	IMAGING OBSTACLES AND SOLUTION	<i>2 credits</i>
Prerequisite: 142. Introduction problem solving skills, using case studies and role-playing situations. Includes comprehensive image analysis of proper technique, positioning, & the use of radiation protection principles.		
261	RADIOLOGIC PHYSICS & PRIN III	<i>3 credits</i>
Prerequisite: 162. Review of radiation physics and radiographic principles that are included with advanced imaging concepts, and radiation protection techniques for both the patient and the radiographer.		
262	A&P REGISTRY REVIEW	<i>2 credits</i>
Prerequisite: 271. Comprehensive review of anatomical structures and positioning to prepare for the ARRT Registry examination. A global perspective on positioning, using critical thinking skills.		
271	SPECIAL IMAGING I	<i>3 credits</i>
Prerequisite: 142. Review of anatomy and advanced radiologic procedures for the following anatomical systems: Cardiac & Circulatory System, Respiratory & Lymphatic Systems, GI System, & Skeletal Articulations.		
272	SPECIAL IMAGING II	<i>3 credits</i>
Prerequisite: 271. Review of anatomy and advanced procedures for the following anatomical systems: Genitourinary System, Nervous System, Muscular System, and computer based imaging.		

281	CLINICAL III	<i>4 credits</i>
Prerequisite: 182. Competency level skills are refined radiographing the vertebral column, skull, facial bones, surgical & mobile Radiography, special procedures, and other infrequently seen radiologic procedures.		
282	CLINICAL IV	<i>4 credits</i>
Prerequisite: 281. Competency level skills are refined in all radiologic areas.		
291	PATHOPHYSIOLOGY	<i>2 credits</i>
Prerequisite: 142. Review of disease processes of the various body systems related to the effect pathology produces on radiographic images. Extensive discussion of optimum techniques used.		
292	CROSS SECTIONAL ANATOMY	<i>2 credits</i>
Prerequisite: 271. Reorientation of anatomical structures and their relationships to axial, coronal, and sagittal planes. These structures are then identified on cadaver, CT, and MRI images.		



Buchtel College of Arts and Sciences

- [Cooperative Education \(3000\)](#)
- [Pan-African Studies \(3002\)](#)
- [International Development Sciences \(3004\)](#)
- [Institute for Lifespan Development and Gerontology \(3006\)](#)
- [English Language Institute \(3030\)](#)
- [Biology \(3100\)](#)
- [Biology/N.E.O.U.C.O.M.** \(3110\)](#)
- [Chemistry \(3150\)](#)
- [Classics \(3200\)](#)
- [Anthropology \(3230\)](#)
- [Archeology \(3240\)](#)
- [Economics \(3250\)](#)
- [English \(3300\)](#)
- [Geography and Planning \(3350\)](#)
- [Geology and Environmental Science \(3370\)](#)
- [History \(3400\)](#)
- [Mathematics \(3450\)](#)
- [Computer Science \(3460\)](#)
- [Statistics \(3470\)](#)
- [Engineering Applied \(3490\)](#)
- [Modern Languages \(3500\)](#)
- [Arabic \(3501\)](#)
- [Chinese \(3502\)](#)
- [Latin \(3510\)](#)
- [French \(3520\)](#)
- [German \(3530\)](#)
- [Italian \(3550\)](#)
- [Japanese \(3560\)](#)
- [Russian \(3570\)](#)
- [Spanish \(3580\)](#)
- [Philosophy \(3600\)](#)
- [Physics \(3650\)](#)
- [Political Science \(3700\)](#)
- [Psychology \(3750\)](#)
- [Sociology \(3850\)](#)
- [Public Administration and Urban Studies ** \(3980\)](#)
- [New Media \(7000\)](#)
- [Art - Myers School of \(7100\)](#)
- [Family and Consumer Sciences \(7400\)](#)
- [Music - School of \(7500\)](#)
- [Music Organizations \(7510\)](#)
- [Applied Music \(7520\)](#)
- [Communication - School of \(7600\)](#)
- [Theatre \(7800\)](#)
- [Theatre Organizations \(7810\)](#)
- [Arts Administration \(7850\)](#)
- [Dance \(7900\)](#)
- [Dance Organizations \(7910\)](#)
- [Dance Somatics \(7915\)](#)
- [Dance Performance \(7920\)](#)



Cooperative Education (3000)

200	JOB SEARCH STRATEGIES-A&S MAJ	<i>2 credits</i>
Students engage in comprehensive career planning and develop job search strategies. Course topics include navigating a search, creating resumes/cover letters, interviewing, and portfolio development. No prerequisites required.		
301	COOPERATIVE EDUCATION	<i>0 credits</i>
(May be repeated) For cooperative education students only. Work experience in business, industry, or governmental agency. Comprehensive performance evaluation and written report required.		
501	COOPERATIVE EDUCATION	<i>0 credits</i>
Prerequisite: must complete 12 graduate credit hours with at least a 3.0 overall grade point average. (May be repeated.) For cooperative education students only. Work experience in business, industry, or governmental agency. Comprehensive performance evaluation and written report required. Graded credit/noncredit.		



Women's Studies (3001)

100	SOCIAL & CULT DIVERSITY - U.S.	<i>3 credits</i>
See department for course description.		
110	MULTICULT SENSITIVITY TRN	<i>1 credits</i>
See department for course description.		
200	INTRODUC TO WOMENS STUDIES	<i>3 credits</i>
Introduction to the interdisciplinary program in Women's Studies. Explores current scholarship in women's issues and experiences from perspectives of psychology, history, sociology, anthropology, and literary criticism. Feminist orientation and methodology.		
480	FEMINIST THEORY	<i>3 credits</i>
Prerequisite: 300. A summary of feminist theory to familiarize students with the main currents in contemporary feminist theory and the origins and evolution of that thought.		
485	ST: WOMENS STUDIES	<i>1-3 credits</i>
(May not be repeated). Special topics and current issues in Women's Studies. Covers content not currently addressed in other courses. Fosters a critical approach to knowledge about women.		
489	INTERN: WOMENS STUDIES	<i>1-4 credits</i>
Prerequisite: 300, permission of Director of Women's Studies. This class provides supervised experience and on-the-job training in an organization, agency, corporation or group dealing with women's issues.		
490	W: WOMENS STUDIES	<i>1-3 credits</i>
Various topics focused on women. Themes and course materials vary each semester. Lecture and discussion.		
493	INDIVIDUAL STUDIES ON WOMEN	<i>1-3 credits</i>
Prerequisite: 300, and approval of Director of Women's Studies. Directed study of selected topics related to women. Projects are chosen by student in consultation with instructor.		
499	SEMINAR IN WOMENS STUDIES	<i>1 credits</i>
See department for course description.		
580	FEMINIST THEORY	<i>3 credits</i>
A summary of feminist theory to familiarize students with the main currents in contemporary feminist theory and the origins and evolution of that thought.		
585	ST: WOMENS STUDIES	<i>1-3 credits</i>
(May be repeated.). Specialized topics and current issues in Women's Studies. Covers content and issues not currently addressed in other academic courses. Emphases will be on original source materials, critical analyses and the synthesis of empirical and theoretical aspects.		
589	INTERN: WOMENS STUDIES	<i>1-4 credits</i>
(May be repeated for a maximum of 4 credits.). Prerequisite: permission of Director of Women's Studies. This class provides supervised experience and on-the-job training in an organization, agency, corporation or group dealing with women's issues.		
590	W: WOMENS STUDIES	<i>1-3 credits</i>
(May be repeated.). Group experiential study of special issues in Women's Studies.		
593	INDIVIDUAL STUDIES ON WOMEN	<i>1-3 credits</i>
Directed study of selected topics related to women. Projects are chosen by student in consultation with instructor and approval of Director of Women's Studies.		



Pan African Studies (3002)

201	INTRO TO PAN-AFRICAN STUDIES	<i>3 credits</i>
Prerequisites: 3300:112 or 2020:121. An interdisciplinary study from an Afrocentric perspective of African and African diaspora experiences. The course will focus on central issues related to the discipline.		
301	CIVIL RIGHTS AMERICA: 1945-74	<i>3 credits</i>
Social and political actions, events and environment which produces civil rights movement in America. Legal, political and organizational strategies; philosophical arguments; prominent civil rights activists.		
401	SEMINAR AFRO-AMERICAN STUDIES	<i>3 credits</i>
Prerequisite: 3400:260 or permission. Exploration and intensive examination of variety of issues related to role and minority group relations which normally stand outside the compass of any one subject matter area.		
405	AFRICAN AMER MEN'S HIST & STUD	<i>3 credits</i>
This course will examine the experiences of the African American Men from a historical, socio-economic, philosophical, religious/spiritual, psychological standpoint.		
410	AFRICAN AMERICAN RELIGIOUS EXP	<i>3 credits</i>
This course explores the diversity of African American religious beliefs, experiences, and expressions from the colonial era to the present.		
420	ST: AFRO-AMERICAN STUDIES	<i>1-3 credits</i>
(May be repeated for a maximum of three semester credits). Prerequisite: permission of instructor.		
498	INDP STUDY: PAN-AFRICAN	<i>1-3 credits</i>
(May be repeated for a maximum of three semester credits). Prerequisites: 3002:201 and 3400:260 or 3400:261 and permission of director. Directed study in a special field of interest chosen by student in consultation with instructor.		



International Development Sciences (3004)

201

INTRO:INTERNATIONAL DEVELOPMNT

3 credits

Uses multiple perspectives: economic, geographical, anthropological, political etc. to study relationships between industrialized and developing countries, poverty, productivity, justice and other aspects of development.

401

INTERNATIONAL DEVLPMNT PROJECT

3 credits

Prerequisites: 21 credits towards International Development Certificate. Research project to be carried out abroad. Students must arrange international experience through channels outside the Certificate program. Project report is capstone requirement of Certificate.



Institute for Lifespan Development and Gerontology(3006)

450	INTER SEM LIFE-SPAN DEV & GERO	<i>2 credits</i>
<p>(May be repeated for a total of two credits) Prerequisite: permission of instructor. Introduction to interdisciplinary study of gerontology including discussion of dimensions of aging, historical framework of aging in America, demographics, service systems, and current issues.</p>		
485	ST: LIFE-SPAN DEV & GERONTOL	<i>1-3 credits</i>
<p>Prerequisite: permission of instructor. Specialized topics and current issues in life-span development or gerontology. Covers content or issues not currently addressed in other academic courses.</p>		
486	RETIREMENT SPECIALIST	<i>2 credits</i>
<p>An investigation of issues related to the design and implementation of pre-retirement planning and examination of life-span planning education as employed by labor, business and education.</p>		
490	W: LIFE-SPAN DEV & GERONTOLOGY	<i>1-3 credits</i>
<p>(May be repeated) Group studies of special topics in life-span development and gerontology. May not be used to meet certificate requirements. May be used for elective credit only.</p>		
495	PRACT: LIFE-SP DEV & GERONTOL	<i>1-3 credits</i>
<p>(May be repeated) Prerequisite: permission. Supervised experience in research or community agency work.</p>		
680	INTER SEM LIFE-SPAN DEV & GER	<i>3 credits</i>
<p>Prerequisite: permission. The certificate program student only. Explores interdisciplinary issues in life-span development and gerontology. Guest speakers from various disciplines and services which have life-span development and gerontological components and from government and community facilities and services.</p>		
685	ST: LIFE-SPAN DEV & GERONTOL	<i>1-3 credits</i>
<p>Prerequisite: permission of instructor. Specialized topics and current issues in life-span development, gerontology, or gender. Emphasis is on original source materials, critical analyses and syntheses of empirical, theoretical and applied aspects.</p>		
686	RETIREMENT SPECIALIST	<i>2 credits</i>
<p>An investigation of issues related to the design and implementation of pre-retirement planning and examination of life-span planning education as employed by labor, business and education.</p>		
690	W: LIFE-SPAN DEV & GERONTOLOGY	<i>1-3 credits</i>
<p>(May be repeated) Group studies of special topics in life-span development and gerontology. May be used as elective credit but not as part of certificate required courses.</p>		
695	PRACTICUM LIFE SPAN DEV & GERO	<i>3 credits</i>
<p>Prerequisite: permission. Supervised experience in research or community agency work.</p>		



English Language Institute (3030)

031	ELI WRITTEN EXPRESSION	<i>0 credits</i>
Prerequisite: Permission of Instructor. Intensive course in English as a second language writing skills, designed to help students develop effective strategies for expressing ideas clearly and correctly in writing. May be repeated an unlimited number of times as course is noncredit.		
032	ELI READING COMPREHENSION	<i>0 credits</i>
Prerequisite: Permission of instructor. Intensive course in English as a second language reading skills, designed to help students develop efficient reading strategies and build vocabulary. May be repeated an unlimited number of times as course is noncredit.		
033	ELI GRAMMAR & ORAL COMMUNICATN	<i>0 credits</i>
Prerequisite: Permission of instructor. Intensive course in English as a second language grammar with an emphasis on oral skills, designed to help students speak fluently and correctly. May be repeated an unlimited number of times as course is noncredit.		
034	ELI LISTENING COMPREHENSION	<i>0 credits</i>
Prerequisite: Permission of instructor. Intensive course in English as a second language listening skills, designed to help students develop strategies to understand spoken English and take academic lecture notes. May be repeated an unlimited number of times as course is noncredit.		
041	ESL WRITING: DEVL P WRIT PROF CY	<i>0 credits</i>
Prerequisite: permission of instructor. Provides intensive instruction in English as a second language writing. Students develop effective composing strategies while learning to write for a variety of academic purposes. May be repeated an unlimited number of times as course is noncredit.		
042	ESL READING: DEVL P READ PROF CY	<i>0 credits</i>
Prerequisite: permission of instructor. Provides intensive instruction in English as a second language reading. Students acquire effective reading and vocabulary development strategies for a range of academic purposes. May be repeated an unlimited number of times as course is noncredit.		
043	ESL GRAMMAR: DEVL P ORAL PROF CY	<i>0 credits</i>
Prerequisite: permission of instructor. Provides intensive instruction in English as a second language grammar for speaking purposes. Students review grammar basics and expand their knowledge and usage of patterns. May be repeated an unlimited number of times as course is noncredit.		
044	ESL LISTEN: DEVL P AURAL PROF CY	<i>0 credits</i>
Prerequisite: permission of instructor. Provides intensive instruction in English as a second language listening for academic purposes. Students acquire effective listening strategies for a range of contexts. May be repeated an unlimited number of times as course is noncredit.		
051	ESL WRITING & STUDY SKILLS	<i>0 credits</i>
Prerequisite: permission of instructor. Intensive course in English as a second language writing and study skills. Students learn and extensively practice techniques for writing, revising, and editing academic texts. May be repeated an unlimited number of times as course is noncredit.		
052	ESL READING & STUDY SKILLS	<i>0 credits</i>
Prerequisite: permission of instructor. Intensive course in English as a second language reading and study skills. Students learn and extensively practice techniques for comprehending a variety of academic texts. May be repeated an unlimited number of times as course is noncredit.		
053	ESL GRAMMAR & SPEAKING SKILLS	<i>0 credits</i>
Prerequisite: permission of instructor. Intensive course in English as a second language grammar. Students learn and extensively practice a range of grammatical forms and functions in spoken contexts. May be repeated an unlimited number of times as course is noncredit.		
054	ESL LISTENING & STUDY SKILLS	<i>0 credits</i>
Prerequisite: permission of instructor. Intensive course in English as a second language listening and study skills. Students learn and practice techniques for comprehending spoken English in an academic setting. May be repeated an unlimited number of times as course is noncredit.		
096	ELI WORKSHOP	<i>0 credits</i>
Prerequisite: Permission of instructor. Provides instruction in English language and related topics for speakers of languages other than English. May be repeated an unlimited number of times as course is noncredit.		
099	ELI INDEPENDENT STUDY	<i>0 credits</i>
Prerequisite: permission of instructor. Independent study in English as a Second Language under the supervision and evaluation of selected faculty member. May be repeated an unlimited number of times as course is noncredit.		



Biology (3100)

100	INTRODUCTION TO BOTANY	<i>4 credits</i>
Identification and biology of common plants of this region. Recommended for teachers of nature study. Not available for credit toward a degree in biology. Laboratory.		
101	INTRODUCTION TO ZOOLOGY	<i>4 credits</i>
Identification and biology of common animals of this region. Recommended for teachers of nature study. Not available for credit toward a degree in biology. Laboratory.		
103	NATURAL SCIENCE: BIOLOGY	<i>4 credits</i>
Designed for non-science majors. Laboratory and class instruction illustrate concepts of living organisms with emphasis on mankind's position in, and influence on, the environment.		
108	INTRO TO BIOLOGICAL AGING	<i>3 credits</i>
Prerequisite: 3100:103. Survey of normal anatomical and physical changes in aging and associate diseases. (For students in gerontological programs at Wayne College. Not for B.S. biology credit.)		
111	PRINCIPLES OF BIOLOGY I	<i>4 credits</i>
Prerequisite or Corequisite: 3150:151 Molecular, cellular basis of life; energy transformations, metabolism; cell reproduction, genetics, development, immunology, evolution, and origin and diversity of life (through plants). Laboratory.		
112	PRINCIPLES OF BIOLOGY II	<i>4 credits</i>
Prerequisite: 111 with a grade of C- or better. Animal diversity; nutrients, gas exchange, transport, homeostasis, control in plants and animals; behavior; ecology. (111-112 are an integrated course for biology majors.) Laboratory.		
130	PRINCIPLES OF MICROBIOLOGY	<i>3 credits</i>
Basic principles and terminology of microbiology; cultivation and control of microorganisms; relationships of microorganisms; medical microbiology. Laboratory. Not available for credit toward a degree in biology.		
180	BS/MD ORIENTATION	<i>1 credits</i>
Orientation to the BS/MD Program. Restricted to students in the BS/MD Program. Graded credit/no credit. Not available for credit toward a biology degree.		
190	HLTH CARE DELIVERY SYSTS	<i>1 credits</i>
Health-care principles and practices. Restricted to the student in NEOUCOM, six-year BS/MD program. Graded credit/noncredit. Not available toward credit as major in biological sciences.		
191	HLTH CARE DELIVERY SYSTS	<i>1 credits</i>
Health-care principles and practices. Restricted to the student in NEOUCOM, six-year BS/MD program. Graded credit/noncredit. Not available toward credit as major in biological sciences.		
200	HUMAN ANAT & PHYSIOLOGY I	<i>3 credits</i>
Study of structure and function of the human body. Molecular, cellular function, histology, integumentary system, skeletal system, muscular system, nervous system, and the sense organs. Not available for credit toward a degree in biology.		
201	HUMAN ANAT & PHYS LAB I	<i>1 credits</i>
Laboratory devised to allow hands on experience using models, dissections of various animals, virtual dissection, and physiological exercises. Not available for credit toward a degree in biology.		
202	HUMAN ANAT & PHYSIOLOGY II	<i>3 credits</i>
Prerequisite: 200. Study of structure and function of the human body. Endocrine system, cardiovascular system, lymphatics, respiratory system, urinary system, digestive system, and reproductive systems. Not available for credit toward a degree in biology.		
203	HUMAN ANAT & PHYS LAB II	<i>1 credits</i>
Laboratory devised to allow hands on experience using models, dissections of various animals, virtual dissection, and physiological exercises. Not available for credit toward a degree in biology.		
211	GENERAL GENETICS	<i>3 credits</i>
Prerequisite: 112. Principles of heredity, principles of genetics.		
212	GENETICS LAB	<i>1 credits</i>
Prerequisite or corequisite: 211. Laboratory experiments in genetics with emphasis on scientific method; techniques in molecular biology.		
217	GENERAL ECOLOGY	<i>3 credits</i>
Prerequisite: 112 with a grade of C- or better. Study of interrelationships between organisms and environment.		
225	BIOLOGY OF AIDS	<i>1 credits</i>

Prerequisite: permission. Course examines the Human Immunodeficiency Virus and the disease of AIDS. Virus structure, replication, therapy, transmission, epidemiology, disease process and social consequences are studied. Not available for credit toward a degree in biology.

265	INTRODUCTORY HUMAN PHYSIOLOGY	<i>4 credits</i>
Study of physiological processes in human body, particularly at organ-systems level. Not open to preprofessional majors. Laboratory. Not available for credit toward a degree in biology.		
290	HLTH CARE DELIVERY SYSTS	<i>1 credits</i>
Health-care principles and practices. A continuation of 190/191 for a second year student in NEOUCOM six-year BS/MD program. Graded credit/noncredit. Not available toward credit as major in biological sciences.		
291	HLTH CARE DELIVERY SYSTS	<i>1 credits</i>
Health-care principles and practices. A continuation of 190/191 for a second year student in NEOUCOM six-year BS/MD program. Graded credit/noncredit. Not available toward credit as major in biological sciences.		
295	ST: BIOLOGY	<i>1-3 credits</i>
Prerequisite: Permission. Special courses offered occasionally in areas where no formal course exists. Not available for credit toward a degree in biology.		
311	CELL & MOLECULAR BIOLOGY	<i>4 credits</i>
Prerequisites: 3100: 211, 3150:151, 152, 153, 154. Study of structure and function of cells, with emphasis on both classical and modern approaches to understanding organelles, energy balance, protein synthesis, and replication.		
315	EVOLUTIONARY BIOLOGY DISC	<i>1 credits</i>
Prerequisite: 211. Informal discussions of various aspects of organic evolution of general or special interest.		
316	EVOLUTIONARY BIOLOGY	<i>3 credits</i>
Prerequisite: 112 with a grade of C- or better. Description of core evolutionary concepts and the history of evolutionary thought including natural selection, sexual selection, genetic drift, higher level selection and speciation.		
331	MICROBIOLOGY	<i>4 credits</i>
Prerequisites: 112, 211 and prerequisite or corequisite 3150:263. Survey of monera with emphasis on the bacteria: their morphology, cultivation and chemical characteristics. Relationships of microorganisms to humans and their environment. Laboratory.		
342	FLORA & TAXONOMY	<i>3 credits</i>
Prerequisite: 112 with a C- or better. Origins of Ohio flora, ecological and evolutionary relationships. Survey of local flowering plant families, collection and identification of flora. Laboratory and field trips.		
343	DIVERSITY OF PLANTS	<i>3 credits</i>
Prerequisites: 112, 217. A broad survey of the traditional plant "branches" of the tree of life. Diversity, structure, and function of fungi, algae, and land plants.		
344	DIVERSITY OF PLANT LABORATORY	<i>2 credits</i>
Prerequisites: 112, 217; Corequisite: 343. A broad laboratory survey of the traditional plant "branches" of the tree of life. Students will have hands-on experience with fungi, algae, and land plants.		
345	BIOLOGY OF VASCULAR PLANTS	<i>4 credits</i>
Prerequisite: 112 with a grade of C- or better. A lecture and laboratory course which presents an overview of the anatomy, morphology, development and evolution of vascular plants.		
363	ANIMAL PHYSIOLOGY I	<i>3 credits</i>
Prerequisite: 112 with a grade of C- or better. Comparative study of transport mechanisms, excitatory membranes, sensory reception, neuroendocrine systems, and muscle contraction. The foundation for all physiology courses.		
364	ANIMAL PHYSIOLOGY LAB I	<i>1 credits</i>
Prerequisite: 112 with a grade of C- or better. Corequisite: 363. Laboratory experiments in animal physiology. (Transport processes, neurophysiology, endocrinology, muscle physiology.) Presentation of results in written scientific format.		
365	HISTOLOGY	<i>4 credits</i>
Prerequisite: 112 with a grade of C- or better. Cellular structure of organs in relation to their functional activity, life history, comparative development. Laboratory.		
406	PRINCIPLES OF SYSTEMATICS	<i>3 credits</i>
Prerequisites: 112,211,316. The science of identifying, naming, and classifying the diversity of life. Topics include: nomenclature, types, techniques of data collection, and methods of phylogenetic reconstruction.		
418	FIELD ECOLOGY	<i>4 credits</i>
Prerequisite: 217 (statistics strongly recommended). Introduction to sampling methods, design of experiments and observations, and computer analysis; some local natural history. Laboratory.		
421	TROPICAL FIELD BIOLOGY	<i>4 credits</i>
Prerequisites: 111/112 or equivalent. Ecology of coral reefs, tide pools, mangroves, intertidal zones, terrestrial flora and fauna, island biogeography. Taught at a field station in the tropics. Field trips involved; transportation costs.		
422	CONSERVATION BIOLOGY	<i>3 credits</i>
Prerequisite: 217. Explores the factors affecting survival of biodiversity, and how to develop practical approaches to resolve complicated conservation issues.		
423	POPULATION BIOLOGY	<i>3 credits</i>
Prerequisites:211, 217. Discussions of animal and plant ecology and evolutionary biology from a species and population level perspective. Includes topics in population ecology and population genetics.		

426	WETLAND ECOLOGY	<i>4 credits</i>
Prerequisite: 217. Wetland ecology; principles and conservation. Field studies will be conducted at Bath Nature Preserve. Laboratory.		
427	FRESHWATER ECOLOGY	<i>4 credits</i>
Prerequisite: 112 with a grade of C- or better, or by permission. The course explores the diversity of aquatic life and key characteristics of freshwater ecosystems with emphasis on the Laurentian Great Lakes. Includes field trips, laboratory.		
428	BIOLOGY OF BEHAVIOR	<i>3 credits</i>
Prerequisites: 211, 217, and 316. Biological basis of behavior, ethology, and behavioral ecology. An evolutionary perspective is emphasized.		
429	BIOLOGY OF BEHAVIOR LABORATORY	<i>1 credits</i>
Prerequisite or corequisite: 428 and permission of instructor. Individualized, directed study to provide the student with first hand experience in observing, describing and interpreting animal behavior..		
430	COMMUNITY/ECOSYSTEM ECOLOGY	<i>3 credits</i>
Prerequisite: 217. An examination of the components, processes, and dynamics in communities and ecosystems. Includes reading and discussion of primary literature.		
433	PATHOGENIC BACTERIOLOGY	<i>4 credits</i>
Prerequisite: 331. Study of major groups of bacteria which produce infections in humans. Biochemical properties of microorganisms which engender virulence and nature of host resistance. Laboratory.		
437	IMMUNOLOGY	<i>4 credits</i>
Prerequisite: 211, 311. Nature of antigens, antibody response, and antigen-antibody reactions. Site and mechanism of antibody formations, hypersensitivity, immunologic tolerance and immune diseases considered. Laboratory.		
439	ADVANCED IMMUNOLOGY	<i>3 credits</i>
Prerequisite: 437. Immunology is studied from a historical and current perspective. Topics include T cells, B cells, antigen presentation, HIV, and transplantation.		
440	MYCOLOGY	<i>4 credits</i>
Prerequisite: 112 with a grade of C- or better. Structure, life history, classification of representative fungi with emphasis on the importance of fungi to humans. Laboratory.		
443	PHYCOLOGY	<i>4 credits</i>
Prerequisite: 112. Examination of the major groups of algae with emphasis on life histories and their relationship to algal form and structure. Laboratory.		
444	FIELD MARINE PHYCOLOGY	<i>3 credits</i>
Collection and identification of tropical marine algae on San Salvador Island, The Bahamas. Discussion of characteristics and ecology of major groups of Caribbean algae. Laboratory.		
451	GENERAL ENTOMOLOGY	<i>4 credits</i>
Prerequisites: 112, 217. Structure, physiology, life cycles, economic importance and characteristics of orders and major families of insects. Laboratories parallel lectures.		
453	INVERTEBRATE ZOOLOGY	<i>4 credits</i>
Prerequisites: 112, 217. Invertebrate groups, their classification, functional morphology, adaptive radiation and life history. A phylogenetic approach is used. Laboratories parallel lectures.		
454	PARASITOLOGY	<i>4 credits</i>
Prerequisites: 112 with a grade of C- or better. Principles of parasitism; host parasite interactions; important human and veterinary parasitic diseases; and control measures. Laboratories parallel lectures.		
455	ICHTHYOLOGY	<i>4 credits</i>
Prerequisites: 217. Study of fishes; incorporates aspects of evolution, anatomy, physiology, natural history, and commercial exploitation of fishes. Laboratory incorporates field-based exercises and fish taxonomy.		
456	ORNITHOLOGY	<i>4 credits</i>
Prerequisite: 112 with a grade of C- or better. Introduction to biology of birds: classification, anatomy, physiology, behavior, ecology, evolution, natural history and field identification. Laboratory and field trips.		
457	HERPETOLOGY	<i>4 credits</i>
Prerequisite: 112 with a grade of C- or better. Survey of the diversity, ecology and evolution of amphibians and reptiles. Special emphasis is given to Ohio species. Laboratory.		
458	VERTEBRATE ZOOLOGY	<i>4 credits</i>
Prerequisite: 316 or permission. Biology of vertebrates, except birds evolution, ecology, behavior, systematics and anatomy. Laboratory with field trips.		
463	EXERCISE PHYSIOLOGY	<i>3 credits</i>
Prerequisite: 3100:363 or instructor permission. Through lecture, reading and critical analysis of current literature, physiologic mechanisms of exercise in animals will be explored.		
465	ADVANCED CARDIOVAS PHYSIOLOGY	<i>3 credits</i>
Prerequisite: 202 or 363 or 473. Study of biological mechanisms involved in heart attack, strokes, fluid balance, hypertension and heart disease. Controversial issues in each area will be examined and current research presented.		
466	VERTEBRATE EMBRYOLOGY	<i>4 credits</i>

Prerequisite: 112 with a grade of C- or better. Lectures focus on development of model vertebrate organisms, and cellular and molecular mechanisms underlying animal development. Laboratory focuses on frog and chick development.

467	COMP VERTEBRATE MORPHOLOGY	<i>4 credits</i>
Prerequisite: 112 with a grade of C- or better. An introduction to the comparative morphology of major vertebrates. The laboratories consist of dissections of representative vertebrates.		
468	THE PHYSIOLOGY OF REPRODUCTION	<i>3 credits</i>
Prerequisites: 112 or 202. Study of the physiological mechanisms of reproduction throughout the animal kingdom with emphasis upon mammalian endocrinological control. Controversial issues and current research will be examined.		
469	RESPIRATORY PHYSIOLOGY	<i>3 credits</i>
Prerequisite: 202 or 363 or 473. Study of mechanisms determining gas exchange including mechanics, ventilation, blood flow, diffusion, and control systems. Emphasis is given to normal human lung function. (Clinical aspects are not considered in detail.)		
470	LAB ANIMAL REGULATIONS	<i>1 credits</i>
Required of anyone working with animals, and covers government regulations, care of animals and a lab to teach basic animal handling and measurement techniques.		
471	PHYSIOLOGICAL GENETICS	<i>4 credits</i>
Prerequisite: 211 or equivalent. 202 or 363 or 473. The integrative study of how genetics and physiology influence complex systems from molecular to behavioral in plants and animals. Laboratory.		
472	BIOL MECHANISMS OF STRESS	<i>3 credits</i>
Prerequisite: 202 or 363 or 473. Study of mechanisms from molecular to behavioral of how stress influences body systems and signals. The latest research and experimental issues are discussed.		
473	ANIMAL PHYSIOLOGY II	<i>3 credits</i>
Prerequisite: 363. Comparative study of respiration, circulation, digestion, metabolism, osmoregulation and excretion in a variety of invertebrate and vertebrate animals. Adaptation to the environment is emphasized.		
474	ANIMAL PHYSIOLOGY LAB II	<i>1 credits</i>
Prerequisite: 364; corequisite 473. Laboratory experiments in animal physiology (respiration, circulation, metabolism, osmoregulation). Presentation of results in scientific format and as oral reports.		
475	COMPARATIVE BIOMECHANICS	<i>3 credits</i>
Prerequisite: 112 with a grade of C- or better, or equivalent. Investigation of how physical constraints on biological materials, structural mechanics and locomotion relate to the survival and evolution of living organisms.		
478	RENAL PHYSIOLOGY	<i>3 credits</i>
Prerequisite: 112 with a grade of C- or better. The study of how the kidneys affect other body systems and how, in turn, they are affected by these systems.		
480	MOLECULAR BIOLOGY	<i>3 credits</i>
Prerequisite: 211 and 311. Fundamentals of molecular biology, including recombinant DNA technology, applications in biotechnology, medicine, and genetic engineering. Mechanisms of gene regulation.		
481	ADVANCED GENETICS	<i>3 credits</i>
Prerequisite: 211. Nature of the gene; genetic codes; hereditary determinants; mutagenesis and genes in population. Lecture and seminar.		
482	NEUROBIOLOGY	<i>3 credits</i>
Prerequisites: 111,112 with grades of C- or better. History of Neuroscience; organization, function and development of the central nervous system; electrophysiological properties of nerve cells; learning and memory; molecular basis for mental diseases.		
485	CELL PHYSIOLOGY	<i>3 credits</i>
Prerequisite: 112 and 3150:401. Explores molecular and biochemical aspects of energy metabolism, inter and intracellular signaling, growth and death of cells. Emphasizes up-to-date scientific literature.		
486	CELL PHYSIOLOGY LABORATORY	<i>1 credits</i>
Prerequisite: 112 and 3150:401. Corequisite: 485. Practice of modern cell physiology laboratory techniques. Emphasis on student directed original research.		
494	W: BIOLOGY	<i>1-3 credits</i>
(May be repeated) Prerequisite: permission of instructor. Group studies of special topics in biology. May not be used to meet undergraduate or graduate major requirements in biology. May be used for elective credit only.		
495	ST: BIOLOGY	<i>1-3 credits</i>
Prerequisite: permission. Special courses offered occasionally in areas where no formal course exists.		
497	BIOLOGICAL PROBLEMS	<i>1-3 credits</i>
(May be repeated for a total of 6 credits) Permission; 2.0 GPA or better in Biology coursework; currently in the College of Arts & Sciences. Advanced level work, usually consisting of laboratory investigations. A maximum of 4 credits may apply toward the major degree requirements.		
499	SR HONORS PROG IN BIOLOGY	<i>1-3 credits</i>
(May be repeated for a total of five credits) Prerequisites: senior standing in Honors College and approval of honors preceptor. Open only to biology and natural sciences divisional majors in Honors College. Independent study leading to completion of approved senior honors.		
506	PRINCIPLES OF SYSTEMATICS	<i>3 credits</i>

The science of identifying, naming, and classifying the diversity of life. Topics include: nomenclature, types, techniques of data collection, and methods of phylogenetic reconstruction.

512	ADVANCED ECOLOGY	<i>3 credits</i>
Advanced study of the ecology of individuals, populations, communities, and conservation/applied ecology. Active participation/discussion of primary literature in ecology is required.		
518	FIELD ECOLOGY	<i>4 credits</i>
Introduction to sampling methods, design of experiments and observations, and computer analysis; some local natural history. Laboratory.		
521	TROPICAL FIELD BIOLOGY	<i>4 credits</i>
Ecology of coral reefs, tide pools, mangroves, intertidal zones, terrestrial flora and fauna, island biogeography. Taught at a field station in the tropics.		
522	CONSERVATION BIOLOGY	<i>3 credits</i>
Explores the factors affecting survival of biodiversity, and how to develop practical approaches to resolve complicated conservation issues.		
523	POPULATION BIOLOGY	<i>3 credits</i>
Discussion of animal and plant ecology and evolutionary biology from a species and population level perspective. Includes topics in population ecology and population genetics.		
526	WETLAND ECOLOGY	<i>4 credits</i>
Wetland ecology; principles and conservation. Field studies will be conducted at Bath Nature Preserve. Laboratory. *Field trips involved; minor transportation costs.		
527	LIMNOLOGY	<i>4 credits</i>
This course explores the diversity of aquatic life and key biotic characteristics of freshwater ecosystems with emphasis on the Great Lakes. Includes field trips.		
528	BIOLOGY OF BEHAVIOR	<i>3 credits</i>
Biological basis of behavior, ethological theory; function, causation, evolution, and adaptiveness of behavior. May be taken without 429/529.		
529	BIOLOGY OF BEHAVIOR LABORATORY	<i>1 credits</i>
Prerequisites or corequisite: 528. Individualized, directed study to provide the student with first hand experience in observing, describing and interpreting animal behavior.		
530	COMMUNITY/ECOSYSTEM ECOLOGY	<i>3 credits</i>
History of the ecosystem concept; components, processes and dynamics of communities and ecosystems; analysis and design of ecosystem experiments. Laboratory.		
533	PATHOGENIC BACTERIOLOGY	<i>4 credits</i>
Study of major groups of bacteria which produce infections in humans. Biochemical properties of microorganisms which engender virulence and nature of host resistance. Laboratory.		
537	IMMUNOLOGY	<i>4 credits</i>
Nature of antigens, antibody response, and antigen-antibody reactions. Site and mechanism of antibody formations, hypersensitivity, immunologic tolerance and immune diseases considered. Laboratory.		
539	ADVANCED IMMUNOLOGY	<i>3 credits</i>
Immunology is studied from a historical and current perspective. Topics include T cells, B cells, antigen presentation, HIV, and transplantation.		
540	MYCOLOGY	<i>4 credits</i>
Structure, life history, classification of representative fungi with emphasis on the importance of fungi to humans. Laboratory.		
543	PHYCOLOGY	<i>4 credits</i>
Examination of the major groups of algae with emphasis on life histories and their relationship to algal form and structure. Laboratory.		
544	FIELD MARINE PHYCOLOGY	<i>3 credits</i>
Collection and identification of tropical marine algae on San Salvador Island, The Bahamas. Discussion of characteristics and ecology of major groups of Caribbean algae. Laboratory.		
551	GENERAL ENTOMOLOGY	<i>4 credits</i>
Structure, physiology, life cycles, economic importance characteristics of orders and major families of insects. Laboratories parallel lectures.		
553	INVERTEBRATE ZOOLOGY	<i>4 credits</i>
Invertebrate groups, their classification, functional morphology, adaptive radiation and life history. A phylogenetic approach is used. Laboratories parallel lectures.		
554	PARASITOLOGY	<i>4 credits</i>
Principles of parasitism; host parasite interactions; important human and veterinary parasitic diseases; and control measures. Laboratories parallel lectures.		
555	ICHTHYOLOGY	<i>4 credits</i>
Study of fishes; incorporates aspects of evolution, anatomy, physiology, natural history, and commercial exploitation of fishes. Laboratory incorporates field-based exercises and fish taxonomy.		
556	ORNITHOLOGY	<i>4 credits</i>

Introduction to biology of birds: classification, anatomy, physiology, behavior, ecology, evolution, natural history and field identification. Laboratory. *Field trips involved; minor transportation costs.

557	HERPETOLOGY	<i>4 credits</i>
Survey of the diversity, ecology and evolution of amphibians and reptiles. Special emphasis is given to Ohio species. Laboratory.		
558	VERTEBRATE ZOOLOGY	<i>4 credits</i>
Prerequisite: permission. Biology of vertebrates, except birds. Evolution, ecology, behavior, systematics and anatomy. Laboratory with field trips.		
565	ADVANCED CARDIOVASCULAR PHYSIOLOGY	<i>3 credits</i>
Prerequisite: 573. Study of biological mechanisms involved in heart attack, strokes, fluid balance, hypertension and heart disease. Controversial issues in each area will be examined and current research presented.		
566	VERTEBRATE EMBRYOLOGY	<i>4 credits</i>
Lectures focus on development of model vertebrate organisms, and cellular and molecular mechanisms underlying animal development. Laboratory focuses on frog and chick development.		
567	COMPARATIVE VERTEBRATE MORPHOLOGY	<i>4 credits</i>
An introduction to the comparative morphology of major vertebrates. The laboratory consists of dissections of representative vertebrates.		
568	THE PHYSIOLOGY OF REPRODUCTION	<i>3 credits</i>
Study of the physiological mechanisms of reproduction throughout the animal kingdom with special emphasis upon mammalian endocrinological control. Controversial issues in the field will be examined and current research presented.		
569	RESPIRATORY PHYSIOLOGY	<i>3 credits</i>
Prerequisite: 573. Study of mechanisms determining gas exchange including mechanics, ventilation, blood flow, diffusion, and control systems. Emphasis is given to normal human lung function. (Clinical aspects are not considered in detail.)		
570	LAB ANIMAL REGULATIONS	<i>1 credit</i>
Required of anyone working with animals, and covers government regulations, care of animals and a lab to teach basic animal handling and measurement techniques.		
571	PHYSIOLOGICAL GENETICS	<i>4 credits</i>
Prerequisite: 573. The integrative study of how genetics and physiology influence complex systems from molecular to behavioral in plants and animals. Laboratory.		
572	BIOLOGICAL MECHANISMS OF STRESS	<i>3 credits</i>
Prerequisite: 573. Study of mechanisms from molecular to behavioral of how stress influences body systems and signals. The latest research and experimental issues are discussed.		
573	COMPARATIVE ANIMAL PHYSIOLOGY	<i>3 credits</i>
Study of respiration, circulation, digestion, metabolism, osmoregulation, and excretion in a variety of invertebrate and vertebrate animals. Adaptation to the environment is emphasized.		
574	COMPARATIVE ANIMAL PHYSIOLOGY LAB	<i>1 credit</i>
Corequisite: 573. Laboratory experiments in animal physiology (respiration, circulation, metabolism, osmoregulation). Presentation of results in scientific format and as oral reports.		
580	MOLECULAR BIOLOGY	<i>3 credits</i>
Fundamentals of molecular biology, including recombinant DNA technology, applications in biotechnology, medicine, and genetic engineering. Mechanisms of gene regulation.		
581	ADVANCED GENETICS	<i>3 credits</i>
Nature of the gene; genetic codes; hereditary determinants; mutagenesis and genes in population. Lecture and seminar.		
582	NEUROBIOLOGY	<i>3 credits</i>
History of Neuroscience; organization, function and development of the central nervous system; electrophysiological properties of nerve cells; learning and memory; molecular basis for mental diseases.		
585	CELL PHYSIOLOGY	<i>4 credits</i>
Explores molecular and biochemical aspects of energy metabolism, inter and intracellular signaling, growth and death of cells. Emphasizes up-to-date scientific literature and techniques. Laboratory.		
594	W: BIOLOGY	<i>1-3 credits</i>
(May be repeated) Prerequisite: permission of instructor. Group studies of special topics in biology. May not be used to meet undergraduate or graduate major requirements in biology. May be used for elective credit only.		
597	BIOLOGICAL PROBLEMS	<i>1-2 credits</i>
Prerequisite: permission. Honors-level work, usually consisting of laboratory investigations. A maximum of 4 credits may apply toward the major degree requirements.		
598	BIOLOGICAL PROBLEMS	<i>1-2 credits</i>
Prerequisite: permission. Honors-level work, usually consisting of laboratory investigations. A maximum of 4 credits may apply toward the major degree requirements.		
601	EVOLUTIONARY ECOLOGY	<i>3 credits</i>
Advanced studies of topics in ecology and evolution, including population genetics, coevolution, metapopulations, and conservation genetics. Lecture/discussion format.		

604	TOPICS IN INTEGRATIVE BIOLOGY	<i>2 credits</i>
Reading, critical analysis, presentation, discussion and debate of cutting edge biological research with an emphasis on understanding the integrative approach to biological investigation.		
616	GRADUATE EVOLUTIONARY BIOLOGY	<i>4 credits</i>
A survey of theory and methods in evolutionary biology including: evolutionary genetics, natural selection, drift, mating systems, trait integration, plasticity, phylogenetics, and paleontology.		
617	GRADUATE ECOLOGY	<i>3 credits</i>
Advanced training for students pursuing a professional/academic career in ecology or associated disciplines. Exploration of interactions at the organismal, population, community, and ecosystem levels.		
618	EXPER APPROACHES FIELD ECOLOGY	<i>4 credits</i>
Prerequisite: Graduate status. Field oriented course intended to help students learn to formulate questions and hypotheses, design field studies, analyze and interpret data, and present conclusions. Laboratory.		
624	ADVANCED AQUATIC ECOLOGY	<i>4 credits</i>
Prerequisite: permission. This course examines interactions between aquatic organisms and their environment across freshwater and marine systems. It includes primary literature, field trips, and student-designed experiments.		
625	BASIC DNA TECHNIQUES	<i>3 credits</i>
Basic DNA techniques including extraction of DNA, cleavage of DNA and cloning. Laboratory.		
626	TECHNIQUES IN MOLECULAR BIOL	<i>3 credits</i>
Discussion of current techniques in molecular biology such as microscopy, cell culture, gene expression and protein analysis. Laboratory.		
628	ADVANCED TOPICS IN BEHAVIOR	<i>3 credits</i>
Prerequisite: 528 or equivalent. Advanced studies of topics in behavior, emphasizing current scientific literature.		
651	ENTOMOLOGY	<i>4 credits</i>
Prerequisite: graduate standing in Biology. Exploration of the diversity and biology of insects and their relatives. Laboratories emphasize field exercises and a collection.		
660	ENVIRONMENTAL PHYSIOLOGY	<i>3 credits</i>
Prerequisites: 561, 562. Study of physiological reactions of healthy mammals to natural changes or extremes of physical environment.		
663	ADVANCED EXERCISE PHYSIOLOGY	<i>3 credits</i>
Through lecture, reading and critical analysis of current literature, physiologic mechanisms of exercise in animals will be explored.		
665	HIST, CELL BIOL, & INTRO PATH	<i>4 credits</i>
This course integrates cell biology and histology to show how organs are structured and function, and how they are altered during sample pathologies. Laboratory.		
671	DEVELOPMENTAL BIOLOGY	<i>4 credits</i>
The study of cellular and molecular mechanisms underlying animal development. Laboratory.		
673	INTEGRATIVE STRESS PHYSIOLOGY	<i>3 credits</i>
Prerequisite: B.S. in Biology or equivalent. This course is designed to examine the behavioral, physiological, genomic and molecular mechanisms of how various types of stressors affect the organism.		
674	INTEGRTD CARDIOVSCLR PHYSIOLGY	<i>3 credits</i>
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 PHYSIOLGCL GENOMICS	<i>4 credits</i>
Prerequisite: B.S. degree in science discipline. This course uses methodologies from genetics and physiology as an integrated approach to studying whole body systems.		
676	INTEGRATIVE PHYSIOLOGY	<i>3 credits</i>
Exploration of the integrative nature of physiology through lecture, reading, and critical analysis of current literature.		
677	SYSTEMS PHYSIOLOGY	<i>3 credits</i>
Study of the complex nature of specific physiological systems both as separate entities and interacting units.		
681	CYTOLOGY	<i>3 credits</i>
The study of how a cell's structure, biochemistry, metabolism, and molecular biology integrate to produce cell function. Laboratory.		
683	SELECTED TOPICS: NEUROBIOLOGY	<i>3 credits</i>
The study of organization, function, and development of the vertebrate nervous system.		
685	ADVANCED CELL PHYSIOLOGY	<i>4 credits</i>
The study of how a cell's structure, biochemistry, metabolism and molecular biology integrate to produce cell function. Laboratory.		
688	PRIN OF TRANS ELEC MICRO	<i>3 credits</i>
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	PRINC SCAN ELECTRON MICROSCOPY	<i>3 credits</i>

Prerequisite: 681 or equivalent. 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	ST: BIOLOGY	<i>1-3 credits</i>
(May be repeated) Prerequisite: permission. Special courses offered once or only occasionally in areas where no formal course exists.		
697	BIOLOGY COLLOQUIUM	<i>1 credits</i>
(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.		
698	BIOLOGY COLLOQUIUM	<i>1 credits</i>
(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	MASTERS THESIS	<i>1-6 credits</i>
(May be repeated) A minimum of six credits is required for thesis option student.		
701	RSRCH TECHNQ IN INTGRTD BIOSCI	<i>4 credits</i>
Students will learn standard, common techniques that are applicable across broad areas of research in integrated bioscience.		
702	COMMUNICATNG IN INTGRTD BIOSCI	<i>2 credits</i>
Communication of bioscience 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 SOLV IN INTGRTD BIOSCI	<i>3 credits</i>
Prerequisite: 702. Students will learn how to study complex systems and get hands-on experience working in interdisciplinary teams.		
797	INTGRTD BIOSCIENCE COLLOQUIUM	<i>1 credits</i>
Prerequisite: permission. Seminars of original research from a broad range of bioscience-related disciplines.		
798	INTGRTD BIOSCIENCE COLLOQUIUM	<i>1 credits</i>
Prerequisite: permission. Seminars of original research from a broad range of bioscience-related disciplines.		
899	DOCTORAL DISSERTATION	<i>1-12 credits</i>
Original research by the doctoral student.		



Biology/N.E.O.U.C.O.M. (3110)**

630	HUMAN GROSS ANATOMY I	<i>3 credits</i>
Prerequisites: graduate standing and permission. An intensive survey of human macromorphology.		
631	HUMAN GROSS ANATOMY II	<i>3 credits</i>
Prerequisite: graduate standing and permission. An intensive survey of human macromorphology.		
695	ST: BIOLOGY/NEOUCOM	<i>1-6 credits</i>
Prerequisite: permission of instructor. Advanced topics in medical education covering areas not otherwise available. May be repeated with a change in topic.		

** Graduate-level courses only. See Graduate Bulletin.



Chemistry (3150)

100	CHEMISTRY & SOCIETY	<i>3 credits</i>
Qualitative introduction to chemistry using current world problems and commercial products, such as the ozone layer, nuclear fission, polymers and drugs, to introduce chemical principles.		
101	CHEMISTRY FOR EVERYONE	<i>4 credits</i>
Integrated, hands-on, laboratory instruction in the fundamental concepts of chemistry for general education and middle-level licensure for pre-service and in-service teachers.		
110	INTRO GEN ORGN & BIOCHEM I LEC	<i>3 credits</i>
Sequential. Introduction to principles of chemistry, fundamentals of inorganic, organic and biochemistry. Structure and chemistry of carbohydrates, lipids, proteins; biochemistry of enzymes, metabolism, radiation.		
111	INTRO GEN ORG & BIOCHEM I LAB	<i>1 credits</i>
Prerequisite/Corequisite: 3150:110. Sequential. Laboratory course applying principles of chemistry and fundamentals of inorganic, organic and biochemistry.		
112	INTRO GEN ORG & BIOCHEM II LEC	<i>3 credits</i>
Prerequisite: 110. Sequential. Introduction to principles of chemistry, fundamentals of inorganic, organic and biochemistry. Structure and chemistry of carbohydrates, lipids, proteins; biochemistry of enzymes, metabolism, radiation.		
113	INTRO GEN ORG & BIOCHEM II LAB	<i>1 credits</i>
Prerequisite/Corequisite: 3150:112. Sequential. Laboratory course applying principles of chemistry and fundamentals of inorganic, organic and biochemistry.		
151	PRINCIPLES OF CHEMISTRY I	<i>3 credits</i>
Prerequisite: placement in 3450:149 or higher or permission. Introduction to basic facts and principles of chemistry including atomic and molecular structure, states of matter and thermodynamics. For chemistry majors, pre-medical students and most other science majors. Discussion (day sections).		
152	PRINCIPLES OF CHEMISTRY I LAB	<i>1 credits</i>
Pre/Corequisite: 151, Laboratory course applying principles of thermodynamics, chemical analysis and laboratory practice.		
153	PRINCIPLES OF CHEMISTRY II	<i>3 credits</i>
Prerequisite: 151. Continuation of 151, 152, including aqueous solution theory, chemical kinetics, equilibrium, electrochemistry and nuclear chemistry. For chemistry majors, premedical students and most other science majors. Discussion (day sections).		
154	QUALITATIVE ANALYSIS	<i>2 credits</i>
Prerequisite: 152; pre/corequisite: 153. Laboratory course applying principles of chemical equilibrium to inorganic qualitative analysis.		
199	INTRO SEMINAR IN CHEMISTRY	<i>1 credits</i>
Basic concepts in chemistry practice including written and oral communication skills, computer skills, professional ethics, environmental issues, chemical literature, degree options, and career considerations.		
263	ORGANIC CHEMISTRY LECTURE I	<i>3 credits</i>
Sequential. Prerequisite: 153 or permission. Structure and reactions of organic compounds, mechanism of reactions.		
264	ORGANIC CHEM LECTURE II	<i>3 credits</i>
Sequential. Prerequisite: 263 or permission. Structure and reactions of organic compounds, mechanism of reactions.		
265	ORGANIC CHEMISTRY LAB I	<i>2 credits</i>
Sequential. Prerequisite: 154; pre/corequisite: 263. Laboratory experiments to develop techniques in organic chemistry and illustrate principles. Discussion.		
266	ORGANIC CHEMISTRY LAB II	<i>2 credits</i>
Sequential. Prerequisite: 265. Laboratory experiments to develop techniques in organic chemistry and illustrate principles. Discussion.		
305	PHYS CHEMISTRY FOR BIO SCIENCE	<i>4 credits</i>
Prerequisites: 3150:264, 3450:222, 3650:262 or 3650:292. Chemical thermodynamics, kinetics, molecular structure and spectra. Accepted for the BS degree in Biochemistry.		
313	PHYSICAL CHEMISTRY LECTURE I	<i>3 credits</i>
Prerequisites: 264, 3450:223, 3650:291 or permission. Gases, thermodynamics, thermochemistry, solutions, dilute solutions, chemical equilibrium, phase rule, chemical kinetics, electrochemistry, electrolytic equilibria.		
314	PHYSICAL CHEMISTRY LECTURE II	<i>3 credits</i>

Prerequisites: 264, 3450:335, 3650:292 or permission of instructor. Atomic and molecular structure and spectroscopy.

370	BIOCHEMISTRY LABORATORY	<i>2 credits</i>
Prerequisite: 266. An integrated laboratory experience covering the isolation, characterization and analysis of enzymes and DNA, protein synthesis and purification, enzyme kinetics, biochemical databases and statistical treatment of data.		
380	ADVANCED CHEMISTRY LAB I	<i>2 credits</i>
Prerequisite: 266. A laboratory experience that focuses on the synthetic and spectroscopic techniques of modern inorganic chemistry, including bioinorganic and organometallic compounds.		
381	ADVANCED CHEMISTRY LAB II	<i>2 credits</i>
Prerequisite 266: corequisite: 314 or 305 or permission. Integrated laboratory experience covering the areas of quantitative analysis, physical chemistry, and instrumental techniques.		
399	INTERNSHIP IN CHEMISTRY	<i>1-3 credits</i>
Prerequisites: minimum GPA of 2.5; permission of the Department. Work experience focused on career applications of the discipline of Chemistry. (May repeat for a maximum of six credits.)		
401	BIOCHEMISTRY LECTURE I	<i>3 credits</i>
Prerequisite: 264. Biochemistry of amino acids, carbohydrates, lipids, and nucleic acids: structure/function relations. Enzymes as catalysts: kinetics and regulation. Cofactors.		
402	BIOCHEMISTRY LECTURE II	<i>3 credits</i>
Prerequisite: 401. Overview of metabolism; thermodynamics; carbohydrate, fatty acid, amino acid, and nucleoside anabolism and catabolism; hormonal control of metabolism. Photosynthesis.		
423	ANALYTICAL CHEMISTRY I	<i>3 credits</i>
Prerequisite: 154, 263. Theoretical principles of quantitative and instrumental analysis.		
424	ANALYTICAL CHEMISTRY II	<i>3 credits</i>
Prerequisite: 154 and 263. Instrumental analysis with emphasis on newer analytical tools and methods.		
463	ADVANCED ORGANIC CHEMISTRY	<i>3 credits</i>
Prerequisite: 264. Introduction to study of mechanisms of organic reactions.		
472	ADVANCED INORGANIC CHEMISTRY	<i>3 credits</i>
Prerequisites: 314 or 305 or permission. 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.		
480	ADVANCED CHEMISTRY LAB III	<i>2 credits</i>
Prerequisites: 381 or 305 or permission. Integrated laboratory experience covering the areas of quantitative analysis, physical chemistry, instrumental techniques, and inorganic chemistry.		
490	W: CHEMISTRY	<i>1-3 credits</i>
(May be repeated) Group studies of special topics in chemistry. May not be used to meet undergraduate or graduate major requirements in chemistry.		
497	HONORS PROJECT IN CHEMISTRY	<i>2 credits</i>
(May be repeated for a total of eight credits) Prerequisites: junior or senior standing in Honors College and permission of department honors preceptor. Independent research leading to completion of honors thesis under guidance of honors project adviser.		
498	ST: CHEMISTRY	<i>1-3 credits</i>
Special Topics in Chemistry.		
499	RESEARCH PROBLEMS IN CHEMISTRY	<i>1-2 credits</i>
(May be repeated for a total of eight credits) Prerequisite: permission. Assignment of special problems to student, designed as an introduction to research problems.		
501	BIOCHEMISTRY LECTURE I	<i>3 credits</i>
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. Cofactors.		
502	BIOCHEMISTRY LECTURE II	<i>3 credits</i>
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	<i>3 credits</i>
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	W: CHEMISTRY	<i>1-3 credits</i>
(May be repeated) Group studies of special topics in chemistry. May not be used to meet undergraduate or graduate major requirements in chemistry.		
592	ST: CHEMICAL EDUCATION	<i>1-3 credits</i>
(May be repeated up to 6 credits) Consideration of topics in chemical education.		
603	BIOCHEMISTRY LECTURE III	<i>3 credits</i>

Prerequisite: 501, 502, graduate status or permission of department. DNA, RNA and protein metabolism. Translation and transcription. Gene function and expression.

610	BASIC QUANTUM CHEMISTRY	<i>3 credits</i>
Prerequisite: graduate status or permission of department. Quantum mechanics with applications to molecular systems. Includes angular momentum, molecular hamiltonians, variation and perturbation methods and molecular orbital theories.		
611	SPECTROSCOPY	<i>3 credits</i>
Prerequisite: 610, graduate status or permission of department. Interaction of light with matter, linear and nonlinear spectroscopies. Rotational, vibrational and electronic spectroscopy. Radiationless transitions and photochemistry.		
619	TRNSTN METAL ORGANOMETALLICS	<i>3 credits</i>
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	<i>3 credits</i>
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	<i>1 credits</i>
Prerequisite: graduate status or permission of department. Lectures on current research topics in chemistry by invited speakers.		
629	PHYSICAL INORGANIC CHEMISTRY	<i>3 credits</i>
Prerequisite: 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 CHEM II	<i>2 credits</i>
Prerequisite: 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	<i>3 credits</i>
Prerequisite: 572, graduate status or permission of department. This course will cover the synthesis and development of metal based medicines including the tumor drug cisplatin, technetium 99m based imaging agents, and silver antimicrobials.		
635	THERMODYN & STAT THERMODYN	<i>3 credits</i>
Prerequisite: graduate status or permission of department. Rigorous treatment of laws of thermodynamics and their applications to selected chemical systems. Fundamentals of statistical thermodynamics and applications to systems in chemical equilibrium.		
636	CHEMICAL KINETICS	<i>3 credits</i>
Prerequisite: 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	<i>3 credits</i>
Prerequisite: 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	<i>3 credits</i>
Prerequisite: graduate status or permission of department. Theory and application of instrumental measurements. Interpretation of data.		
645	X-RAY CRYSTALLOGRAPHY	<i>3 credits</i>
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	SPECT IDENT OF ORGANIC COMPS	<i>3 credits</i>
Prerequisite: 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	<i>3 credits</i>
Prerequisite: 572 or permission of instructor. Synthesis, structure, bonding, characterization, and applications of polysiloxanes, polyphosphazenes, polysilanes, polycarbosilanes, poly(ferroceneophanes), sol-gel materials, coordination polymers and related materials.		
683	MECH & SYNTH ORG CHEM I	<i>3 credits</i>
Prerequisite: graduate status or permission of department. Introduction to the structural and mechanistic aspects of organic reactions: HMO calculations, acids and bases, equilibrium, kinetics, linear free energy relationships, reactive intermediates, reaction mechanisms.		
684	MECH & SYNTH ORG CHEM II	<i>3 credits</i>
Prerequisite: 683, graduate status or permission of department. Synthetic organic chemistry from a mechanistic perspective: nucleophilic and electrophilic substitution and addition reactions, carbonyl chemistry, functional group manipulations, oxidations, reductions, cycloaddition reactions.		
699	MASTERS THESIS	<i>1-6 credits</i>
Prerequisite: graduate status or permission of department. For properly qualified candidates for master's degree. Supervised original research in analytical, inorganic, organic, physical or biochemistry.		

710	ST: ANALYTICAL CHEMISTRY	<i>1-3 credits</i>
(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, thermoanalytical methods, separations, standards, sampling, recent developments.		
711	ST: INORGANIC CHEMISTRY	<i>1-3 credits</i>
(May be repeated) Prerequisite: graduate status or permission of department. Consideration of topics in modern inorganic chemistry such as coordination compounds, chemistry of the solid state, representative elements, nonaqueous solvents, organometallic compounds, homogeneous catalysis.		
712	ST: ORGANIC CHEMISTRY	<i>1-3 credits</i>
(May be repeated) Prerequisite: graduate status or permission of department. Topics in advanced organic chemistry such as natural products, heterocyclic compounds, photochemistry.		
713	ST: PHYSICAL CHEMISTRY	<i>1-3 credits</i>
(May be repeated) Prerequisite: graduate status or permission of department. Subject from modern physical chemistry.		
715	ST: BIOCHEMISTRY	<i>1-3 credits</i>
(May be repeated) Prerequisite: graduate status or permission of department. Recent developments in areas of biochemistry.		
720	ADV BIOCHEMICAL TECHNIQUES	<i>3 credits</i>
Prerequisite: 502, graduate status or permission of department. An advanced lecture course on physical techniques in biochemistry. Includes optical and hydrodynamic methods; radioanalytical techniques, scattering and magnetic resonance spectroscopy.		
722	ENZYMATIC REACTIONS	<i>3 credits</i>
Prerequisite: 501, 502, graduate status or permission of department. Mechanisms of enzyme catalyzed reactions, general aspects and specific examples for phosphory, acyl, glycosyl transfers, eliminations, oxidation/reduction, isomerization and rearrangements. Chemistry of cofactors.		
724	BIOINORGANIC CHEMISTRY	<i>3 credits</i>
Prerequisite: 501, 502, graduate status or permission of department. Survey of the structure and properties of metal ion complexes with amino acids, nucleotides, metabolites and macromolecules; metal ion metabolism; metals in medicine.		
726	ADVANCED METABOLISM	<i>3 credits</i>
Prerequisite: 501, 502, graduate status or permission of department. Study of advanced pathways in carbohydrate, lipid and protein metabolism with emphasis placed on metabolic dysfunction.		
740	PHYSICAL ORGANIC CHEMISTRY	<i>3 credits</i>
Prerequisite: 683, 684, graduate status or permission of department. An advanced treatment of the theory and mechanisms of organic chemistry: FMO theory, molecular mechanics, molecular strain, kinetics, thermodynamics, acidity functions, linear free energy relationships.		
750	ADV SYNTHETIC ORGANIC CHEM	<i>3 credits</i>
Prerequisite: 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	<i>1-16 credits</i>
Prerequisite: graduate status or permission of department. 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.		



Classics (3200)

220	INTRODUCTION TO ANCIENT WORLD	<i>3 credits</i>
Prerequisite: 3400:210 or 3400:221. Introduction to the civilizations of the Near East, Greece, and Rome, their cultural influences upon each other and their legacy to Europe.		
230	SPORTS & SOCIETY ANC GR & ROME	<i>3 credits</i>
Greek and Roman sports, games and festivals, from the Olympics to gladiatorial games as social phenomena; multimedia survey of the archaeology of ancient sport.		
289	MYTHOLOGY OF ANCIENT GREECE	<i>3 credits</i>
Myth, legend and folktale in ancient Greece, with attention to religion and the transmission of Greek myth to Rome and the West. No foreign language necessary.		
361	THE LITERATURE OF GREECE	<i>3 credits</i>
Prerequisite: 3400:210 or 3400:221. Major writers of ancient Greece and their influence on later European literature. No foreign language necessary. Required of majors.		
362	THE LITERATURE OF ROME	<i>3 credits</i>
Major writers of ancient Rome and their influence on later European literature. No foreign language necessary. Required of majors.		
363	WOMEN IN ANCIENT GREECE & ROME	<i>3 credits</i>
Examine women's lives in ancient Greece and Rome. Read their poetry, see them in ancient theatre, art, and philosophy, and in modern art and film.		
480	RDG & RSCH CLASSICAL STUDIES	<i>1-3 credits</i>
Prerequisite: permission of instructor. Directed reading and research for individual and small group study in any recognized area of classical studies.		
499	HONORS PROJECT IN CLASSICS	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and permission. Independent study leading to completion of a senior honors thesis under the supervision of a member of the Department of Classics.		
504	ASSYRIOLOGY	<i>3 credits</i>
(May be repeated for credit with another cuneiform language) Prerequisite: permission of instructor. The Akkadian language.		
550	SEL T: ANCIENT CULTURES	<i>3 credits</i>
(May be repeated with change of subject) Varied offerings in literature, art and archaeology and religion. No foreign language necessary.		



Anthropology (3230)

150	HUMAN CULTURES	<i>3 credits</i>
This course examines what culture is, how human cultures vary and how they change. We then explore opportunities/ conflicts presented by contemporary human cultural issues.		
151	HUMAN EVOLUTION	<i>4 credits</i>
Study of biological evolution of Homo Sapiens, including primate comparisons and cultural development. One-hour laboratory using interactive computer programs, casts and Anthropology's cultural collection.		
251	HUMAN DIVERSITY	<i>3 credits</i>
This course examines human diversity in global perspective by considering how and why human beings vary physically and ways categories of difference are culturally constructed.		
340	PALEODEMOGRP & HUMAN OSTEOLOGY	<i>3 credits</i>
Prerequisites: 150, 151, 3240:100 or instructor's permission. An intensive study of bone, bone growth, and the human skeleton; ageing and sexing techniques; application of demographic techniques to paleoanthropological populations.		
357	MAGIC, MYTH, & RELIGION	<i>3 credits</i>
Prerequisite: 150 or 3850:100. Analysis and discussion of the data concerning the origins, roles and functions of magic and religion in a broad range of human societies, with emphasis on the non-Western, pre-industrial societies. Examination of belief and ritual systems of such societies.		
358	INDIANS OF NORTH AMERICA	<i>3 credits</i>
Prerequisite: 150 or permission. Ethnographic survey of native cultures of North America, with emphasis on variations in ecological adaptations, social organization and modern American Indians in anthropological perspective. Lecture.		
359	ANTHROPOLOGICAL THEORY	<i>3 credits</i>
Prerequisites: 150, 151 or permission of instructor. Advanced seminar addressing the history of anthropological theory and current theoretical debates within the discipline.		
370	GLOBALIZATION AND CULTURE	<i>3 credits</i>
Prerequisite: 150 or 3850:100. A critical examination of socio-cultural processes of globalization that serve to complicate conventional notions of culture. Emphasizes how globalization affects a range of local places.		
397	ANTHROPOLOGICAL RESEARCH	<i>1-3 credits</i>
(May be repeated) Prerequisite: permission. Individual study of problem areas of specific interest to an individual student under guidance of a faculty member.		
398	INTRO: ANTHROPOLOGICAL DATA	<i>3 credits</i>
Prerequisite: 150, 151 and 3240:100. This course focuses on the characteristics of anthropological evidence through hands-on activities and examination of the uses of data in published works.		
410	EVOLUTION & HUMAN BEHAVIOR	<i>3 credits</i>
Prerequisite: 151. Critical examination of the theory of natural selection and its usefulness for understanding the origins and evolution of early hominid and modern human social behavior.		
416	ANTHROPOLOGY OF SEX & GENDER	<i>3 credits</i>
Prerequisites: 150 or 3850:100. This course explores cross-cultural variation regarding sex, gender and sexuality. It examines the ways that cultures create, maintain and reproduce gender concepts and gender relations.		
420	THE ANTHROPOLOGY OF FOOD	<i>3 credits</i>
Prerequisite: 150 or permission. Utilizing anthropological approaches and theories, this course explores the social relations and cultural beliefs associated with food cross-culturally.		
455	CULTURE & PERSONALITY	<i>3 credits</i>
Prerequisite: 150 or permission. Examination of functional and casual relationships between culture and individual cognition and behavior. Lecture.		
457	MEDICAL ANTHROPOLOGY	<i>3 credits</i>
Prerequisite: 150 or permission of instructor. Analyzes various aspects of Western and non-Western medical systems from an anthropological perspective. Compares traditional medical systems around the world.		
460	FIELD METHODS IN CULTURAL ANTH	<i>4 credits</i>
Prerequisite: 150 or permission of instructor. Community-based research and service-learning course in which students design and undertake a project. Addresses ethics, data collection, management and analysis in collaboration with community partners.		
463	SOCIAL ANTHROPOLOGY	<i>3 credits</i>
Prerequisite: 150 or permission. Comparative structural analysis of non-Western systems of kinship and social organization in terms of status, role, reciprocal expectation, nomenclature, nuclear and extended households and other kinship groupings. Lecture.		

470	RES METH: SOCIAL SCI PROSEM	<i>3 credits</i>
Pre-requisite: Completion of required coursework for the Research Methods Certificate Program or Permission of Instructor. Application of qualitative and/or quantitative research methods and analysis, and preparation of a scholarly research paper for presentation and/or publication. Seminar.		
472	ST: ANTHROPOLOGY	<i>3 credits</i>
(May be repeated) Prerequisites: 150 and permission. Designed to meet needs of student with interests in selected topics in anthropology. Offered irregularly when resources and opportunities permit. May include archaeological field school, laboratory research or advanced course work not presently offered by department on regular basis.		
474	ST: BIOLOGICAL ANTHROPOLOGY	<i>3 credits</i>
Prerequisite: 151. Advanced topics in biological anthropology, human paleontology and primate behavioral ecology. May be repeated.		
494	W: ANTHROPOLOGY	<i>1-3 credits</i>
(May be repeated) Group studies of special topics in anthropology. May not be used to meet departmental undergraduate or graduate major requirements. May be used for elective credit only.		
497	SR HONORS PROJECT:ANTHROPOLOGY	<i>3 credits</i>
The topic and scope of this individually chosen project is directed by an Anthropology faculty member in conjunction with Honors College preceptors under the guidelines of the Honors College		
510	EVOLUTION & HUMAN BEHAVIOR	<i>3 credits</i>
Prerequisite: permission. Critical examination of the theory of natural selection and its usefulness for understanding the origins and evolution of early hominid and modern human social behavior.		
516	ANTHROPOLOGY OF SEX & GENDER	<i>3 credits</i>
Prerequisite: permission. This course explores cross-cultural variation regarding sex, gender and sexuality. It examines the ways that cultures create, maintain and reproduce gender concepts and gender relations.		
520	THE ANTHROPOLOGY OF FOOD	<i>3 credits</i>
Prerequisite: permission. Utilizing anthropological approaches and theories, this course explores the social relations and cultural beliefs associated with food cross-culturally.		
555	CULTURE & PERSONALITY	<i>3 credits</i>
Prerequisite: Permission. Examination of functional and causal relationships between culture and individual cognition and behavior. Lecture.		
557	MEDICAL ANTHROPOLOGY	<i>3 credits</i>
Prerequisite: Permission of instructor. Analyzes various aspects of Western and non-Western medical systems from an anthropological perspective. Compares traditional medical systems around the world.		
560	QUAL MTHD: BASIS OF ANTH RSCH	<i>4 credits</i>
Prerequisite: 150 or permission of instructor. Provides hands-on experience in qualitative methods, including key informant interviewing, focus groups, and other methods. Includes the use of computer-based programs for rapid appraisal strategies.		
563	SOCIAL ANTHROPOLOGY	<i>3 credits</i>
Prerequisite: Permission. Comparative structural analysis of non-Western systems of kinship and social organization in terms of status, role, reciprocal expectation, nomenclature, nuclear and extended households and other kinship groupings. Lecture.		
572	ST: ANTHROPOLOGY	<i>3 credits</i>
(May be repeated) Prerequisite: permission. Designed to meet needs of student with interests in selected topics in anthropology. Offered irregularly when resources and opportunities permit. May include archaeological field school, laboratory research or advanced course work not presently offered by department on regular basis.		
594	W: ANTHROPOLOGY	<i>1-3 credits</i>
(May be repeated) Group studies of special topics in anthropology. May not be used to meet departmental undergraduate or graduate major requirements. May be used for elective credit only.		
651	SEM IN ANTHROP THRS & METHODS	<i>3 credits</i>
Major theoretical viewpoints in cultural anthropology. Nature, scope of research problems. Survey of methods in field work. Seminar.		
697	INDIVIDUAL INVESTIGATION	<i>1-3 credits</i>
Prerequisites: permission of instructor and chair of department. Intensive reading and/or research in student's chosen field of interest. Regular conferences with instructor. Preparation of a research paper.		



Archeology (3240)

100	INTRODUCTION TO ARCHAEOLOGY	<i>3 credits</i>
Introduction to the study of ancient cultures based on material remains. Course covers basic archaeological concepts and tools, types of data and interpretation.		
101	CASE STUDY	<i>1 credits</i>
A series of one-credit modules designed to introduce specific topics of archeological interest to the non-specialist.		
105	THE INCAS	<i>1 credits</i>
Rise and fall of the Inca empire of South America. Topics include: politics, ideology, daily life and methods of recovering and interpreting archaeological data.		
106	THE MAYA	<i>1 credits</i>
Rise and fall of the Maya civilization of Mesoamerica. Topics include: politics, ideology, daily life and methods of recovering and interpreting archaeological data.		
107	ARCHAEOLOGY OF PETS	<i>1 credits</i>
A look at pets from earliest times to the present and how the keeping of pets leads to the domestication of animals.		
108	WORLD OF HOMER	<i>1 credits</i>
Examination of Greek Bronze and Iron Age material culture and its possible relationship to the works of the poet Homer.		
109	THE ASSYRIANS	<i>1 credits</i>
Examines archaeological and textual evidence for the emergence of the Assyrian Empire, its expansion and collapse. Topics include: Assyrian art and architecture, warfare, and literature.		
110	THE SUMERIANS	<i>1 credits</i>
Examines archaeological and textual evidence for the emergence and flourishing of Sumerian civilization. Topics include: Sumerian religion, art, architecture and literature.		
111	ARCHAEOLOGY OF SLAVERY	<i>1 credits</i>
An examination of slavery as an institution on a worldwide basis from earliest times to the 19th century through archaeology.		
112	THE AZTECS	<i>1 credits</i>
A discussion of the Aztec civilization, politics, ideology, and daily life will illustrate how archaeologists recover and interpret data on Aztec culture.		
150	TIME BEFORE HISTORY	<i>3 credits</i>
Survey of world prehistory from the first appearance of anatomically modern humans to the rise of state-level societies from an archaeological perspective. Web Components.		
300	HISTORICAL ARCHAEOLOGY	<i>3 credits</i>
This course explores recent developments in historical archaeology and how material culture can be used to study race, class, gender, and ethnic identities.		
313	ARCHAEOLOGY OF GREECE	<i>3 credits</i>
The ruins and monuments of Greece; history reconstructed by examination of the material remains. No foreign language necessary.		
314	ARCHAEOLOGY OF ROME	<i>3 credits</i>
The ruins and monuments of Rome; history reconstructed by examination of the material remains. No foreign language necessary.		
345	EGYPTOLOGY	<i>3 credits</i>
Introduction to ancient Egyptian civilization, with emphasis on sites and artifacts representative of socio-political and ideological transformations from the Prehistoric through Ptolemaic Periods.		
360	ANCIENT N-E ARCHAEOLOGY	<i>3 credits</i>
General survey of the archaeological material culture and written history of the ancient Near East. Covers principal human achievements from the Paleolithic to Alexander's conquest.		
400	ARCHAEOLOGICAL THEORY	<i>3 credits</i>
Prerequisite: 100. Advanced seminar covering history of scientific archaeological exploration, major theoretical paradigms and current trends in archaeology. Required for Certificate in Field Archaeology.		
410	ARCHAEOGEOPHYSICAL SURVEY	<i>3 credits</i>
Prerequisite: 100 or 3370:101 or 3350:310. Advanced instruction in principles of subsurface geophysical survey techniques in archaeology. Emphasizes magnetic gradiometry and electrical resistivity techniques. Includes both laboratory and fieldwork.		

420	ARCHAEOLOGY OF OHIO	<i>3 credits</i>
Prerequisite: 100. Provides a detailed overview of Ohio's prehistoric cultures and the early historic period focusing on cultural evolution and environmental relationships.		
440	ARCHAEOLOGICAL LAB METHODS	<i>3 credits</i>
Prerequisite: 100. Laboratory processing and study of lithic, ceramic, paleofaunal, paleobotanical, metallic, archaeological materials. Emphasis varies with instructor expertise. Involves instrumental or statistical analysis.		
450	ARCHAEOLOGICAL FIELD SCHOOL	<i>1-6 credits</i>
Prerequisite: 100 or permission. A field-based course teaching based archaeological techniques, mapping, excavation of prehistoric and historic sites, survey and documentation. (May be repeated for a maximum of 6 credits.)		
472	ST: ARCHAEOLOGY	<i>1-6 credits</i>
Prerequisite: 100 or permission. Designed to meet needs of students with interests in selected topics in archaeology. May include fieldwork, laboratory research or advanced courses not regularly offered. (May be repeated for up to six credits.)		
499	SR HONORS PROJ: ARCHAEOLOGY	<i>1-6 credits</i>
Prerequisite: Permission of instructor. Student-designed archaeology project directed by an Archaeology faculty member in conjunction with Honors College preceptors under the guidelines of the Honors College. (May be repeated for a maximum of six credits.)		
500	ARCHAEOLOGICAL THEORY	<i>3 credits</i>
Prerequisite: permission. Advanced seminar covering history of scientific archaeological exploration, major theoretical paradigms and current trends in archaeology. Required for Certificate in Field Archaeology.		
510	ARCHAEOGEOPHYSICAL SURVEY	<i>3 credits</i>
Prerequisite: permission. Advanced instruction in principles of subsurface geophysical survey techniques in archaeology. Emphasizes magnetic gradiometry and electrical resistivity techniques. Includes both laboratory and fieldwork.		
520	ARCHAEOLOGY OF OHIO	<i>3 credits</i>
Prerequisite: permission. Provides a detailed overview of Ohio's prehistoric cultures and the early historic period focusing on cultural evolution and environmental relationships.		
540	ARCHAEOLOGICAL LAB METHODS	<i>3 credits</i>
Prerequisite: Permission. Advanced laboratory processing and study of lithic, ceramic, paleofaunal, paleobotanical, metallic, archaeological materials. Emphasis varies with instructor expertise. Involves instrumental or statistical analysis.		
550	ARCHAEOLOGICAL FIELD SCHOOL	<i>1-6 credits</i>
Prerequisite: permission. A field-based course teaching basic archaeological techniques, mapping, excavation of prehistoric and historic sites, survey and documentation. (May be repeated for up to 6 credits).		
572	ST: ARCHAEOLOGY	<i>1-6 credits</i>
Prerequisite: Permission. Designed to meet needs of students with interests in selected topics in archaeology. Offered irregularly when resources and opportunities permit. May include archaeological field school, laboratory research or advanced course work not presently offered by department on a regular basis. Repeatable for up to six credits.		



Economics (3250)

100	INTRODUCTION TO ECONOMICS	<i>3 credits</i>
May not be substituted for 200, 201, 244. Economics primarily concerned in a broad social science context. Adequate amount of basic theory introduced. Cannot be used to satisfy major or minor requirements in economics.		
200	PRINCIPLES OF MICROECONOMICS	<i>3 credits</i>
Analysis of behavior of the firm and household, and their impact on resource allocation, output and market price. No credit if 244 already taken.		
201	PRINCIPLES OF MACROECONOMICS	<i>3 credits</i>
Prerequisite: 200. Study of the economic factors which affect the price level, national income, employment, economic growth. No credit if 244 already taken.		
226	COMPUTER SKILLS FOR ECON ANALYS	<i>3 credits</i>
Prerequisites: 100 or 200 or 244. Application of word processing, spreadsheets, presentation packages, SAS, the Internet, library resources, and other computer tools in communicating economic analysis.		
230	ECON OF SOCIAL POLICY ISSUES	<i>3 credits</i>
Prerequisite: 100, or 200 and 201, or 244 or permission of the instructor. Investigation of selected labor and social policy issues. Examples include health care, economic demography, anti-poverty programs, immigration, discrimination, and the impact of unemployment and inflation.		
244	INTRODUCTION ECONOMIC ANALYSIS	<i>3 credits</i>
Recommended for engineering and mathematical science majors. Intensive introduction to analysis of modern industrial society and formulation of economic policy. Structure of economic theory and its relation to economic reality. No credit to a student who has completed 200, 201.		
310	MANAGERIAL ECONOMICS	<i>3 credits</i>
Prerequisites: 200 or 244, 3470:261, 3470:262. Application of economic analysis to management problems; the organization of enterprises and the allocation of their resources; decision making under uncertainty; strategic behavior.		
330	LABOR PROBLEMS	<i>3 credits</i>
Prerequisites: 200 or 201 or 244. Labor economics, principles and public policy. Study of structure of labor market and impact unions have on labor management relations.		
333	LABOR ECONOMICS	<i>3 credits</i>
Prerequisite: 200 or 244. Theoretical tools used in analysis of problems of labor in any modern economic system. Emphasis given to examination of determinants of demand for and supply of labor.		
360	INDUSTRL ORGAN & PUBLIC POLICY	<i>3 credits</i>
Prerequisites: 200 or 244. Role of industrial structure and firm conduct in performance of industry and way in which antitrust policy is designed to provide remedies where performance is unsatisfactory.		
380	MONEY & BANKING	<i>3 credits</i>
Prerequisite: 201. Institutions of money, banking and credit, monetary expansion and contraction, public policies affecting this process, development of our money and banking system.		
385	ECON NATURAL RESOURCES & ENVIR	<i>3 credits</i>
Prerequisites: 100 or 200 or 244 or permission. Introduction to economic analysis of use of natural resources and economics of environment. Problems of water and air pollution, natural environments, natural resource scarcity, conservation, economic growth.		
400	INTERMEDIATE MACROECONOMICS	<i>3 credits</i>
Prerequisites: 201 and 3450:145 or equivalent. Changes in national income, production, employment, price levels, long-range economic growth, short-term fluctuations of economic activity.		
405	ECONOMICS OF THE PUBLIC SECTOR	<i>3 credits</i>
Prerequisites: 200 and 201, or 244. Considers nature and scope of government activity, rationale for government intervention, problems of public choice, taxation and revenue-raising, cost-benefit analysis, program development and evaluation.		
406	STATE & LOCAL PUBLIC FINANCE	<i>3 credits</i>
Prerequisite: 410; recommended: 405. Examines economic rationale and problems for provision of goods and services by different governmental units. Considers alternative revenue sources and special topics.		
410	INTERMEDIATE MICROECONOMICS	<i>3 credits</i>
Prerequisites: 200 or 244, and 3450:145 or equivalent. Advanced analysis of consumer demand, production costs, market structures, determinants of factor income.		
415	COST-BENEFIT ANALYSIS	<i>3 credits</i>

Prerequisites: 200 and 201 or 244 or permission of instructor. Introduction to tool for public project evaluation. Includes development of analytical framework and methods of determining benefits and costs over time. Stresses application of techniques.

423	APPLIED GAME THEORY	<i>3 credits</i>
Prerequisite: 200. Application of the basic concepts of game theory (analysis of strategic behavior) to relevant economics issues including bargaining, cartels, voting, conflict resolution and non-competitive pricing.		
426	APPLIED ECONOMETRICS	<i>3 credits</i>
Prerequisite: 200 and 201 or 244; 3470:261, 262. Application of regression analysis to economic and social sciences data. Discusses typical problems from applied research, including estimation technique, hypothesis testing, and modeling framework.		
427	ECONOMIC FORECASTING	<i>3 credits</i>
Prerequisite: 200 and 201 or 244; 3470:261, and 262. Methods for building, identifying, fitting and checking dynamic economic models and use of these models for forecasting. Emphasis on application of available computer software systems.		
430	LABOR MARKET & SOCIAL POLICY	<i>3 credits</i>
Prerequisite: 200 and 201 or 244 or permission of instructor. 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).		
432	ECON & PRACT COLLECT BARGAIN	<i>3 credits</i>
Prerequisite: 200 or 244. Principles and organization of collective bargaining, collective bargaining agreements, issues presented in labor disputes and settlements, union status and security, wage scales, technological change, production standards, etc.		
434	LABOR MARKET ANALYSIS & EVAL	<i>3 credits</i>
Prerequisites: 410, 426, 430. Applied labor market research using specialized techniques. Employment, health, education, and other current policy issues and programs analyzed and evaluated. Original research project required.		
436	HEALTH ECONOMICS	<i>3 credits</i>
Prerequisites: 100 or 200 or 244 or permission of instructor for 436. Economic analysis of health care. Stresses health policy issues, includes study of demand and supply of medical services and insurance, analysis of health care industries.		
438	ECONOMICS OF SPORTS	<i>3 credits</i>
Prerequisites: 100 or 200 or 244 or 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.		
440	ST: ECONOMICS	<i>3 credits</i>
Prerequisite: permission. Opportunity to study special topics and current issues in economics.		
460	ECON OF DEVELOPING COUNTRIES	<i>3 credits</i>
Prerequisites: 200 and 201, or 244. Basic problems in economic development. Theories of economic development, issues of political economy and institutions. Topics include poverty, population, migration, employment, finance, international trade and environment.		
461	PRINC INTERNATIONAL ECONOMICS	<i>3 credits</i>
Prerequisites: 200 and 201, or 244; or permission of the Economics department. International trade and foreign exchange, policies of free and controlled trade, international monetary problems.		
475	DEVELOPMNT OF ECONOMIC THOUGHT	<i>3 credits</i>
Prerequisites: 200 and 201, or 244; or permission of the Economics department. Evolution of theory and method, relation of ideas of economists contemporary to conditions.		
481	MONETARY & BANKING POLICY	<i>3 credits</i>
Prerequisites: 380, 400; or permission of the Economics department. Control over currency and credit, policies of control by central banks and governments, United States Treasury and Federal Reserve System.		
487	URBAN ECON: THEORY & POLICY	<i>3 credits</i>
Prerequisite: 200 and 201 or 244 or permission of instructor. Analysis of urban issues from an economic perspective. Emphasis on urban growth, land-use patterns, housing, income distribution, poverty and urban fiscal policy.		
490	INDIVIDUAL STUDY IN ECONOMICS	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisite: permission of instructor. Independent study in economics under supervision and evaluation of selected faculty member.		
491	W: ECONOMICS	<i>1-3 credits</i>
(May be repeated) Prerequisite: permission of the Economics department. Group studies of special topics in economics. May not be used to meet undergraduate or graduate major requirements in economics. May be used for elective credit only.		
495	INTERNSHIP IN ECONOMICS	<i>1-3 credits</i>
Prerequisites: 200, 201 and at least three additional courses in economics at the 300- or 400-level. Supervised placement in appropriate position in public or private sector organizations. Reports and written assignments required.		
496	SENIOR PROJECT IN ECONOMICS	<i>2 credits</i>
Prerequisites: 400, 410, 426. Corequisites: 405 or 423 or 430 or 460 or 461 or 475 or 481 or 487. Taken concurrently with or following a 400-level field Economics course. Involves independent out-of-class work on a project designed in consultation with the designated 400-level course instructor.		
497	HONORS PROJECT IN ECONOMICS	<i>1-3 credits</i>

(May be repeated for a total of six credits) Prerequisite: senior standing in Honors College. Individual senior honors thesis on a creative project relevant to economics, approved and supervised by faculty member of the department.

506	STATE & LOCAL PUBLIC FINANCE	<i>3 credits</i>
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	<i>3 credits</i>
Prerequisites: Admission to the master's program in Economics or permission. Introduction to tool for public project evaluation. Includes development of analytical framework and methods of determining benefits and costs over time. Stresses application of techniques.		
523	APPLIED GAME THEORY	<i>3 credits</i>
Prerequisite: Admission to the master's program in Economics or permission. Application of the basic concepts of game theory (analysis of strategic behavior) to relevant economics issues including bargaining, cartels, voting, conflict resolution and non-competitive pricing.		
527	ECONOMIC FORECASTING	<i>3 credits</i>
Prerequisite: Admission to the master's program in Economics or permission. Study of methods for building, identifying, fitting and checking dynamic economic models and use of these models for forecasting. Emphasis is on the application of available computer software systems.		
530	LABOR MARKET & SOCIAL POLICY	<i>3 credits</i>
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).		
536	HEALTH ECONOMICS	<i>3 credits</i>
Prerequisite: permission of instructor. Economic analysis of health care. Stresses health policy issues, includes study of demand and supply of medical services and insurance, analysis of health care industries.		
538	ECONOMICS OF SPORTS	<i>3 credits</i>
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	ST: ECONOMICS	<i>3 credits</i>
Prerequisite: permission. Opportunity to study special topics and current issues in economics.		
560	ECON OF DEVELOPING COUNTRIES	<i>3 credits</i>
Prerequisite: Admission to the master's program in Economics or permission. Basic problems of economic development. Theories of economic development, issues of political economy and institutions. Topics include poverty, population, migration, employment, finance, international trade, environment.		
561	PRINC: INTERNATIONAL ECONOMICS	<i>3 credits</i>
Prerequisite: Admission to master's program in Economics or permission. International trade and foreign exchange, policies of free and controlled trade, international monetary problems.		
575	DEVELOPMNT OF ECONOMIC THOUGHT	<i>3 credits</i>
Prerequisite: Admission to the master's program in Economics or permission. Evolution of theory and method, relation of ideas of economists contemporary to conditions.		
581	MONETARY & BANKING POLICY	<i>3 credits</i>
Prerequisite: Admission to the master's program in Economics or permission. Control over currency and credit, policies of control by central banks and governments, United States Treasury and Federal Reserve System.		
587	URBAN ECON: THEORY & POLICY	<i>3 credits</i>
Prerequisite: Admisson 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	W: ECONOMICS	<i>1-3 credits</i>
(May be repeated) Group studies of special topics in economics. May not be used to meet undergraduate or graduate major requirements in economics. May be used for elective credit only.		
600	FOUNDATIONS OF ECONOMIC ANALYS	<i>3 credits</i>
Prerequisite: graduate standing. Determination of national income, employment and price level; aggregate consumption, investment and asset holding; decision problems faced by household and firm. Partial equilibrium and analysis of competition and monopoly and general equilibrium analysis. May not be substituted for 602, 603, 611, or applied toward the 30 graduate credits required for M.A. in economics.		
602	MACROECONOMIC ANALYSIS I	<i>3 credits</i>
Prerequisite: Admission to the master's program in economics or permission of the department. Construction of static macroeconomic models. Analysis predominantly in terms of comparative statistics with only relatively brief mention of dynamic models.		
606	ECONOMICS OF THE PUBLIC SECTOR	<i>3 credits</i>
Prerequisite: Admission to the master's program in economics or permission of the department. Examination of public sector economies emphasizes public revenues, public expenditures. Develops objectives of taxation, welfare aspects of the public sector, theory of public goods. Considers specific taxes, cost-benefit analysis, expenditures analysis, fiscal federalism.		
610	FRAMEWORK OF ECONOMIC ANALYSIS	<i>3 credits</i>

Prerequisite: 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.

611	MICROECONOMIC THEORY I	<i>3 credits</i>
Prerequisite: 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.		
615	INDUSTRIAL ORGANIZATION	<i>3 credits</i>
Prerequisite: 611 or permission. Examines link between market structure, firm conduct and economic performance. Measurement and effects of monopoly power, industrial concentration and changes.		
617	ECONOMICS OF REGULATION	<i>3 credits</i>
Prerequisite: 615 or permission of instructor. Examines rationale, methods and success of government regulation of public utility, transportation and communications industries.		
620	APPLIC OF MATH MODELS TO ECON	<i>3 credits</i>
Prerequisite: 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 in production and consumption; static macroeconomic models. Analysis of growth and stability.		
621	APPLIC LINEAR MODELS ECON AN	<i>3 credits</i>
Prerequisite: 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 demands, linear programming, general equilibrium analysis.		
626	STATISTICS FOR ECONOMETRICS	<i>3 credits</i>
Prerequisite: 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.		
627	ECONOMETRICS	<i>3 credits</i>
Prerequisite: 626 or equivalent. Formulation of functional relations among economic variables suitable for statistical estimation from observational data and construction of multiequation econometric models and methods of estimation.		
628	SEMINAR IN RESEARCH METHODS	<i>3 credits</i>
Prerequisite: Admission to the master's program in economics or permission of the department. A seminar in the research use of applied mathematical economics or econometrics. Emphasis is on individual development of a theoretical proposition or research statement, its empirical examination and policy implications.		
633	THEORY OF WAGES & EMPLOYMENT	<i>3 credits</i>
Prerequisite: Admission to the master's program in economics or permission of the department. Analytical approach to integration of economic theory with observed labor market phenomena. Discussion of wage and employment theories, effects of unions, collective bargaining theories and effects of government regulation.		
640	ST: ECONOMICS	<i>3 credits</i>
Prerequisite: Admission to the Master's Program in economics or permission of department. Opportunity to study special topics and current issues in economics at an advanced level. Repeatable with premission of instructor.		
664	SEMINAR ON ECON GROWTH & DVL P	<i>3 credits</i>
Prerequisite: Admission to the master's program in economics or permission of the department. Review of main theories of economic growth since age of classical economics. Problems in development of emerging countries. Discussion of aggregative macromodels of capital formation, investment, technology and external trade.		
666	SEM REGIONAL ECON ANALYS & DEV	<i>3 credits</i>
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.		
670	INTERNATIONAL MONETARY ECON	<i>3 credits</i>
Prerequisite: Admission to the master's program in economics or permission of the department. International financial relations. Foreign exchange market and exchange rate adjustments. Balance of payments adjustment policies. International monetary system.		
671	INTERNATIONAL TRADE	<i>3 credits</i>
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 economics.		
683	MONETARY ECONOMICS	<i>3 credits</i>
Prerequisite: Admission to the master's program in economics or permission of the department. Intensive study of important areas of monetary theory. Emphasis on integration of money and value theory among other areas, plus some pressing policy issues.		
695	GRAD INTERN: ECONOMICS	<i>1-3 credits</i>
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.		
697	READING IN ADVANCED ECONOMICS	<i>1-4 credits</i>



English (3300)

110	ENGLISH COMPOSITION I + WRKSHP	<i>5 credits</i>
Prerequisite: Placement. Extensive and varied experience in developing writing skills, with practice in expressive, reflective, and analytic forms of writing. Includes one credit, support-intensive workshop.		
111	ENGLISH COMPOSITION I	<i>4 credits</i>
Extensive and varied experience in developing writing skills, with practice in expressive, reflective, and analytic forms of writing.		
111	ENGLISH COMPOSITION I	<i>4 credits</i>
Extensive and varied experience in developing writing skills, with practice in expressive, reflective, and analytic forms of writing.		
112	ENGLISH COMPOSITION II	<i>3 credits</i>
Prerequisites 110 or 111 or 113 or 2020:121. Designed to develop skills in analyzing and writing persuasive arguments.		
112	ENGLISH COMPOSITION II	<i>3 credits</i>
Prerequisites 110 or 111 or 113 or 2020:121. Designed to develop skills in analyzing and writing persuasive arguments.		
113	AFR AM LANG & CULTURE I:C CMP	<i>4 credits</i>
Discussion, argumentation, and writing related to African American culture and language. An option to 3300:111 English Composition I. Open to all students.		
114	AFR AM LNG & CULTURE II:C CMP	<i>3 credits</i>
Prerequisites: 110 or 111 or 113 or 2020:121. Composition and discussion topics focus on the structure, history, and culture of African American English. An option to 3300:112 English Composition II. Open to all students.		
250	CLASSIC & CONTEMPORARY LIT	<i>3 credits</i>
Prerequisites: 111 and 112 or their equivalents, and 3400:210 or 221, or permission of the instructor. Close reading and analysis of fiction, poetry, and drama from the evolving canon of American, British, and World literature. This course fulfills the General Education Humanities Requirement. It cannot be used to meet requirements in English.		
252	SHAKESPEARE & HIS WORLD	<i>3 credits</i>
Prerequisites: 111 and 112 or their equivalents, and 3400:210 or 221. An introduction to the works of Shakespeare and their intellectual and social contexts. Each section "places" Shakespeare through compact readings of works by the playwright's contemporaries. This course fulfills the General Education Humanities Requirement. It cannot be used to meet requirements in English.		
275	SPECIALIZED WRITING	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. (May be repeated for different topics, with permission) Principles and practice of style, structure and purpose in writing, with special applications to writing demands of a specific career area.		
276	INTRO CREATIVE NONFICTION WRITG	<i>3 credits</i>
Prerequisites: 111 and 112 or their equivalents, or permission of instructor. This course introduces the techniques of Creative Nonfiction through writing exercises that give experience with the form.		
277	INTRODUCTION TO POETRY WRITING	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Practice in writing poems. Study of techniques in poetry, using contemporary poems as models. Class discussion of student work. Individual conferences with instructor to direct student's reading and writing.		
278	INTRO TO FICTION WRITING	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Practice in writing short stories. Study of various techniques in fiction, using contemporary stories as models. Class discussion of student work. Individual conferences with instructor to direct student's reading and writing.		
279	INTRODUCTION TO SCRIPT WRITING	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Practice in writing scripts. Study of various techniques in script writing, using contemporary models for study. Class discussion of student work. Individual conferences with instructor to direct student's reading and writing.		
280	POETRY APPRECIATION	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Close reading of a wide selection of British and American poems with emphasis on dramatic situation, description, tone, analogical language, theme and meaning.		
281	FICTION APPRECIATION	<i>3 credits</i>

Prerequisite: Completion of 111 and 112 or their equivalents, and 3400:210 or 221. Close reading of modern masters of short story and novel. Fulfills the General Education Humanities Requirement. It cannot be used to meet requirements in English.

283	FILM APPRECIATION	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Introduction to dramatic choices made by filmmakers in scripting, directing, editing and photographing narrative films; and qualities of reliable film reviews.		
300	CRITICAL READING & WRITING	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. An introduction to English studies, focusing on critical methods for reading and writing about literature, with attention to research skills and uses of computer technology.		
301	ENGLISH LITERATURE I	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Studies in English literature from Old English to 1800, with emphasis upon specific representative works and upon the cultural and intellectual background which produced them. Literature to be read will include both major and minor poetry, prose and drama.		
315	SHAKESPEARE: THE EARLY PLAYS	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Introduction to early drama of Shakespeare with close reading of tragedies, histories and comedies. Includes explanatory lectures of both the plays and their backgrounds.		
316	SHAKESPEARE: THE MATURE PLAYS	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Study of Shakespeare's plays after 1598, beginning with mature comedies. Concentration on major tragedies and romances.		
341	AMERICAN LITERATURE I	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Historical survey of major and minor American writers to 1865.		
350	BLACK AMERICAN LITERATURE	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Survey of representative black American writers from the 19th Century to present, with particular attention to historical and social backgrounds.		
360	OLD TESTAMENT AS LITERATURE	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. History of Hebrews to 586 B.C., as revealed through epic, fiction, saga and poetry, viewed against background of the Asian World.		
361	THE NEW TEST AND APOC AS LIT	<i>3 credits</i>
Prerequisite: Completion of 111 and 112. These two bodies of literature read with emphasis on form of gospel and epistle, and concept of apocalypse. Both are viewed against their historical and social backgrounds.		
362	WORLD LITERATURES	<i>3 credits</i>
The course is a study of short fiction, poems, plays, and novels of the non-Western world from early antiquity to the present.		
364	WOMEN WRITERS	<i>3 credits</i>
Prerequisite: 112 or equivalent, or permission of instructor. A study of the diverse voices of female experiences through literature written by women.		
366	EUROPE BKGD ENGLISH LITERATURE	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Representative continental texts from Homer to Cervantes, selected both for their excellence and for their important influence on English and American literature.		
371	INTRODUCTION TO LINGUISTICS	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Scientific introduction to the study of written and spoken linguistic behavior in English. History of English, varieties of English, and acquisition of English also introduced.		
376	LEGAL WRITING	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Intensive practice in writing for prelaw students through assignments based on actual legal situations and real cases. Particular attention to stating legal issues, writing persuasively, applying rules of law, and other topics that will help those preparing for law school and the profession.		
377	ADVANCED POETRY WRITING	<i>3 credits</i>
Prerequisites: 277, and 111 and 112 or their equivalents, or permission of the instructor. Advanced practice in writing poems, emphasis on shaping publishable works. Survey of market. Class discussion of student poems; individual conference with instructor.		
378	ADVANCED FICTION WRITING	<i>3 credits</i>
Prerequisites: 278, and 111 and 112 or their equivalents, or permission of the instructor. Advanced practice in writing short stories, emphasis on shaping publishable works. Survey of market. Class discussion of student stories; individual conference with instructor.		
379	ADVANCED SCRIPT WRITING	<i>3 credits</i>
Prerequisites: 112, 279 or equivalents, or permission of instructor. This course focuses on writing for the screen and developing the visual imagination.		

380	FILM CRITICISM	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Application of literary critical theory to the study of film.		
381	ADV CREATIVE NONFICTION WRITNG	<i>3 credits</i>
Prerequisite: 276 or permission of instructor. This course advances student practice in the craft of Creative Nonfiction through writing exercises and workshop sessions.		
389	ST: LITERATURE & LANGUAGE	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. (May be repeated for credit as different topics are offered). Traditional and nontraditional topics in English literature and language, supplementing course listed in this General Bulletin, generally constructed around theme, genre and language study.		
390	PROFESSIONAL WRITING I	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Designed to help prepare student for a career as professional business writer. Stresses theory and practice of written and oral communication in business organization. Individual and group performance, relating to communication theories, concepts of semantics. Functional writing as well as special needs of business are illustrated by actual cases. Adapting style and organization is practiced.		
391	PROFESSIONAL WRITING II	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Designed to help prepare student for a career as professional technical writer. Covers principles and practices concerning editing company technical communications, such as specifications, annual reports, promotional brochures for technical products, services, scientific abstracts, proposals. Also treats problems of adapting materials to formats, graphic display of technical information, adaptation of technical material to nontechnical reader.		
392	INTERNSHIP IN ENGLISH	<i>1-3 credits</i>
Prerequisite: Minimum GPA of 2.5, permission of the instructor. (May be repeated for a maximum of six credits.) Critical reading and writing focused on career applications of the discipline of English. May count up to three credit hours toward the English major.		
399	THE GOTHIC IMAGINATION	<i>3 credits</i>
Prerequisite: Completion of 111 and 112. A loosely chronological study of major British, American, and European authors in the Gothic tradition. Focus on the literary conventions of Gothic fiction, to the "popular" nature of the literature and to its major themes/motifs.		
400	ANGLO SAXON	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Studies in Old English language and Old English prose and poetry, including Beowulf.		
403	DEVELOPMNT OF ARTHURIAN LEGEND	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Traces evolution of Arthurian materials from 540 to 1500 and beyond, with emphasis on characters, themes, events and treatments.		
406	CHAU CER	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Close study of Chaucer's major works The Canterbury Tales and Troilus and Criseyde in Middle English.		
407	MIDDLE ENGLISH LITERATURE	<i>3 credits</i>
Prerequisite: Completion of 111 and 112, 64 credits or permission. Study of genres, topics, styles and writers of the Middle English literary works from 12th to 15th Centuries. Readings in Middle English.		
424	EARLY ENGLISH FICTION	<i>3 credits</i>
Prerequisite: Completion of 111 and 112, 64 credits or permission. Development of English novel before 1830. Focus on works of Defoe, Richardson, Fielding, Smollett, Sterne, Austen and Scott.		
425	STUDIES IN ROMANTICISM	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Literary, philosophical, psychological and social revolutions of romantic period as reflected in works of such major writers as Wordsworth, Byron and Keats.		
430	VICTORIAN POETRY & PROSE	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Poetry, prose of the late 19th Century, excluding fiction, with attention to Tennyson, Browning, Arnold, Carlyle, Ruskin and other major writers.		
431	VICTORIAN FICTION	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Reading of at least five major novels of Victorian era, of varying length, by Emily Bronte, Dickens, Eliot, Thackeray and Hardy. Characterization, theme and attitude toward life emphasized.		
435	20TH CENTURY BRITISH POETRY	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Concentrated study of major poems of Yeats, Eliot and Auden, with attention also to Hardy, Housman, Spender, C. Day Lewis, Dylan Thomas and others.		
436	BRITISH FICTION: 1900-1925	<i>3 credits</i>

Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Study of Conrad, Joyce, D. H. Lawrence and Virginia Woolf, with attention to their innovations in narrative and style, their psychological realism and symbolism. Brief consideration of other important fiction writers of the period, including Wells, Bennett and Mansfield.

437	BRITISH FICTION SINCE 1925	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Study of important British novelists since 1925, excluding Lawrence, Joyce and Woolf. Attention to development of British short story from 1925 to present.		
440	WOMEN AND FILM	<i>3 credits</i>
Prerequisites: 111, 112 or equivalents, 64 credits or permission of instructor. This course explores representations of the feminine and treatments of gender issues in mainstream Hollywood films within a critical framework of feminist film theory.		
448	AMERICAN ROMANTIC FICTION	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Examination of early American fiction, tracing its genesis, romantic period and germinal movements toward realism. Writers discussed include Cooper, Poe, Hawthorne and Melville.		
449	AMER FICT: REALISM & NATURAL	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Examination of American writers of realistic and naturalistic fiction (e.g., Howells, James, Crane, Dreiser), tracing developments in American fiction against background of cultural and historical change.		
450	MODERN AMERICAN FICTION	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Study of significant American short and long fiction from World War I to the present.		
451	AMERICAN POETRY TO 1900	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Survey of American poetry of the 17th, 18th and 19th Centuries.		
452	MODERN AMERICAN POETRY	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Survey of 20th Century American poetry beginning with Edwin Arlington Robinson and ending with contemporary poets.		
453	AMERICAN WOMEN POETS	<i>3 credits</i>
Prerequisite: Completion of 111 and 112, 64 credits or permission. Study of modern poets' uses and revisions of tradition, women's relationships, conceptions of art and of the artist-as-woman, and the debate between "public" and "private" poetry.		
454	20TH CENTURY AMERICAN DRAMA	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Examination of major, established playwrights (including O'Neill, Miller and Williams) and sampling of new and rising ones.		
455	THE AMERICAN SHORT STORY	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. A study of the development of the short story as a particularly American genre, from Washington Irving to the present.		
456	THOREAU, EMERSON & THEIR CIRCLE	<i>3 credits</i>
Prerequisite: 64 credits or permission. A study of work and life of Henry David Thoreau, Ralph Waldo Emerson, and other key figures of the American Renaissance.		
457	WRITERS ON WRITING	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits including 111 and 112 or permission of the instructor. A close look at what established writers have to say about the process of writing. Students write response essays and take exams on readings.		
460	FILM AND LITERATURE	<i>3 credits</i>
Prerequisites: completion of 111, 112 or their equivalents, 64 credits or permission of instructor. Analysis of literary texts and their film adaptations. Emphasis on genre, structure, and visual elements as counterparts to written texts.		
466	LINGUISTICS AND LANGUAGE ARTS	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits including 111 and 112 or permission of the instructor. Foundation course in linguistics with pedagogical implications for second language learners. Fundamental topics (morphology, syntax, semantics, phonetics, pragmatics) and related topics (sociolinguistics, contrastive analysis) covered.		
467	MODERN EUROPEAN FICTION	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Representative European writers from about 1850 to present, in translation. Focus on fiction of such writers as Dostoyevsky, Gide, Camus, Mann, Kafka and Kundera.		
468	INTERNATIONAL POETRY	<i>3 credits</i>
Prerequisite: Completion of 112 or equivalent, 64 credits or permission of the instructor. This survey of world poetry focuses on the stylistic concerns and social consequences of literature from Latin America, Africa, Asia, Europe, and beyond.		
469	EROS & LOVE IN EARLY WEST LIT	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. An analysis of the use of sex and love in the literature of the Western World from Greco-Roman times to 1800, with special emphasis on how sexuality and "romantic" love are used as allegorical, satiric, fantastic or realistic devices.		

470	HISTORY OF ENGLISH LANGUAGE	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. 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.		
471	U.S. DIALECTS: BLACK & WHITE	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. 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.		
472	SYNTAX	<i>3 credits</i>
Prerequisites: 371, and 111 and 112 or their equivalents, 64 credits or permission of the instructor. Principles of syntactic description. Sentence structures are investigated from a variety of languages, with emphasis on English.		
473	THEORE FOUND AND PRIN OF ESL	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits including 111 and 112 or permission of the instructor. Second language acquisition theories and teaching methodologies surveyed. Second language teaching principles from research in linguistics, psycholinguistics, and second language pedagogy explored.		
474	AFRICAN AMERICAN ENGLISH	<i>3 credits</i>
Prerequisite: 64 credits or permission. African American English grammatical structure, pronunciations, origins, and cultural role. Comparisons with academic English. Discussion of language correctness, legal status, and role in education.		
475	THEORY OF RHETORIC	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. Ancient and modern theories of rhetoric, with attention to classical oration, "topics" of rhetoric and their application to teaching of English.		
477	SOCIOLINGUISTICS	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. Major sociolinguistic concepts and methodology examined, as well as relationships between language, socio-cultural factors, and education. Issues of Standard English, power, and gender also examined.		
478	GRAMMATICAL STRUCTURES OF ENGL	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits including 111 and 112 or permission of the instructor. 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.		
479	MANAGMENT REPORTS	<i>3 credits</i>
Prerequisites: completion of 111, 112 or their equivalents, 64 credits or permission of instructor. Study of principles and writing practice in effective business style, specialized structure, and purpose for business reports.		
482	SENIOR HONORS PROJECT: ENGLISH	<i>1-3 credits</i>
(May be repeated for a total of six credits). Prerequisites: Completion of 1100:111 and 1100:112 or their equivalents, or permission of the instructor, senior standing in Honors College and approval of honors preceptor; open only to English majors enrolled in Honors College. Independent study leading to completion of senior honors thesis or other original work.		
484	FANTASY	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. A study of forms of literature, primarily fiction, based on and controlled by an overt violation of what is generally considered as possibility.		
485	SCIENCE FICTION	<i>3 credits</i>
Prerequisite: 64 credits or permission. A study of twentieth-century British and American science fiction, featuring primary forms of the science fiction story and the work of major authors.		
486	LEARNER ENGLISH	<i>3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, or permission of the instructor. 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.		
487	FLD EXP: TEAC SEC LANG LEARNER	<i>3 credits</i>
Prerequisite: 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.		
489	SEMINAR IN ENGLISH	<i>2-3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. (May be repeated with different topics.) Special studies, and methods of literary research, in selected areas of English and American literature and language.		
490	W: ENGLISH	<i>1-3 credits</i>
Prerequisite: Completion of 111 and 112 or their equivalents, 64 credits or permission of the instructor. (May be repeated with different topics) Group studies of special topics in English. Cannot be used to meet undergraduate or graduate major requirements in English; for elective credit only.		
492	SENIOR SEMINAR	<i>3 credits</i>
Discussion of select literary topic and reflection on student development in the major. Requires independent research and reflection papers. Limited to senior English majors.		

498	INDP STUDY: ENGLISH	<i>1-3 credits</i>
Prerequisite: completion of 111 and 112 or their equivalents, 64 credits or permission. Directed study in a special field of interest chosen by student in consultation with instructor.		
500	ANGLO SAXON	<i>3 credits</i>
Studies in Old English language and Old English prose and poetry, including Beowulf.		
503	DEVELOPMNT OF ARTHURIAN LEGEND	<i>3 credits</i>
Traces evolution of Arthurian materials from 540 to 1500 and beyond, with emphasis on characters, themes, events and treatments.		
506	CHAUCER	<i>3 credits</i>
Close study of Chaucer's major works - The Canterbury Tales and Troilus and Criseyde in Middle English.		
507	MIDDLE ENGLISH LITERATURE	<i>3 credits</i>
Study of genres, topics, styles and writers of the Middle English literary works from 12th to 15th centuries. Readings in Middle English.		
521	SWIFT & POPE	<i>3 credits</i>
An intensive study of the major satires 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.		
524	EARLY ENGLISH FICTION	<i>3 credits</i>
Development of English novel before 1830. Focus on works of Defoe, Richardson, Fielding, Smollett, Sterne, Austen and Scott.		
530	VICTORIAN POETRY & PROSE	<i>3 credits</i>
Poetry, prose of the late 19th Century, excluding fiction, with attention to Tennyson, Browning, Arnold, Carlyle, Ruskin and other major writers.		
531	VICTORIAN FICTION	<i>3 credits</i>
Reading major novels of Victorian era, of varying length, by Emily Bronte, Dickens, Eliot, Thackeray and Hardy. Characterization, theme and attitude toward life emphasized.		
535	20TH CENTURY BRITISH POETRY	<i>3 credits</i>
Concentrated study of major poems of Yeats, Eliot and Auden, with attention also to Hardy, Housman, Spender, C. Day Lewis, Dylan Thomas and others.		
536	BRITISH FICTION: 1900-1925	<i>3 credits</i>
Study of Conrad, Joyce, D.H. Lawrence and Virginia Woolf, with attention to their innovations in narrative and style, their psychological realism and symbolism.		
537	BRITISH FICTION SINCE 1925	<i>3 credits</i>
Study of important British novelists since 1925, excluding Lawrence, Joyce and Woolf. Attention to development of British short story from 1925 to present.		
548	AMERICAN ROMANTIC FICTION	<i>3 credits</i>
Examination of early American fiction, tracing its genesis, romantic period and germinal movements toward realism. Writers discussed include Cooper, Poe, Hawthorne and Melville.		
549	AM FIC: REALISM & NATURALISM	<i>3 credits</i>
Examination of American writers of realistic and naturalistic fiction (e.g. Howells, James, Crane, Dreiser), tracing developments in American fiction against background of cultural and historical change.		
550	MODERN AMERICAN FICTION	<i>3 credits</i>
Study of significant American short and long fiction from World War I to the present.		
553	AMERICAN WOMEN POETS	<i>3 credits</i>
Study of modern poets' uses and revisions of tradition, women's relationships, conceptions of art and of the artist-as-woman, and the debate between "public" and "private" poetry.		
556	THOREAU, EMERSON & THEIR CIRCLE	<i>3 credits</i>
A study of work and life of Henry David Thoreau, Ralph Waldo Emerson, and other key figures of the American Renaissance.		
557	WRITERS ON WRITING	<i>3 credits</i>
A close look at what established writers have to say about the process of writing. Students write response essays and take exams on readings.		
560	FILM AND LITERATURE	<i>3 credits</i>
Analysis of literary texts and their film adaptations. Emphasis on genre, structure, and visual elements as counterparts to written texts.		
566	LINGUISTICS AND LANGUAGE ARTS	<i>3 credits</i>
Foundation course in linguistics with pedagogical implications for second language learners. Fundamental topics (morphology, syntax, semantics, phonetics, pragmatics) and related topics (sociolinguistics, contrastive analysis) covered.		
567	MODERN EUROPEAN FICTION	<i>3 credits</i>
Representative European writers from about 1850 to present, in translation. Focus on fiction of such writers as Zola, Tolstoy, Dostoyevsky, Mann, Proust, Kafka and Solzhenitsyn.		
568	INTERNATIONAL POETRY	<i>3 credits</i>

This survey of world poetry focuses on the stylistic concerns and social consequences of literature from Latin America, Africa, Asia, Europe, and beyond.

569	EROS & LOVE: EARLY WESTERN LIT	<i>3 credits</i>
An analysis of sex and love in the western literature from Greco-Roman times to 1800. Emphasis allegorical, satiric, fantastic or realistic uses of sexuality and "romantic" love.		
570	HISTORY OF ENGLISH LANGUAGE	<i>3 credits</i>
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.		
571	U.S. DIALECTS: BLACK & WHITE	<i>3 credits</i>
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.		
572	SYNTAX	<i>3 credits</i>
Principles of syntactic description. Sentence structures are investigated from a variety of languages, with emphasis on English.		
573	THEORETI FOUND AND PRIN OF ESL	<i>3 credits</i>
Second language acquisition theories and teaching methodologies surveyed. Second language teaching principles from research in linguistics, psycholinguistics, and second language pedagogy explored.		
574	AFRICAN AMERICAN ENGLISH	<i>3 credits</i>
African American English grammatical structure, pronunciations, origins, and cultural role. Comparisons with academic English. Discussion of language correctness, legal status, and role in education.		
575	THEORY OF RHETORIC	<i>3 credits</i>
Ancient and modern theories of rhetoric, with attention to classical oration, "topics" of rhetoric and their application to teaching of English.		
577	SOCIOLINGUISTICS	<i>3 credits</i>
Major sociolinguistic concepts and methodology examined, as well as relationships between language, socio-cultural factors, and education. Issues of Standard English, power, and gender also examined.		
578	GRAMMATICAL STRUCTURES OF ENGL	<i>3 credits</i>
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.		
579	MANAGEMENT REPORTS	<i>3 credits</i>
Study of principles and writing practice in effective business style, specialized structure, and purpose for business reports.		
585	SCIENCE FICTION	<i>3 credits</i>
A study of twentieth-century British and American science fiction, featuring primary forms of the science fiction story and the work of major authors.		
586	LEARNER ENGLISH	<i>3 credits</i>
Introduction to tools for and practice in analyzing second language learners's production of English. Theory and practice of teaching oral and written English also covered.		
587	FLD EXP: TEAC SEC LANG LEARNER	<i>3 credits</i>
Prerequisite: Permission of the instructor 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.		
589	SEMINAR IN ENGLISH	<i>2-3 credits</i>
(May be repeated with different topics.) Special studies, and methods of literary research, in selected areas of English and American literature and language.		
590	W: ENGLISH	<i>1-3 credits</i>
(May be repeated with different topics.) Group studies of special topics in English. Cannot be used to meet undergraduate or graduate major requirements in English; for elective credit only.		
592	INTERNSHIP IN ENGLISH	<i>1-3 credits</i>
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 credit.		
600	TEACHING COLL COMP PRACTICUM	<i>3 credits</i>
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.)		
615	SHAKESPEAREAN DRAMA	<i>3 credits</i>
Concentrated study of several Shakespearean plays with emphasis on historical, critical and dramatic documents pertinent to development of Shakespeare's art.		
616	SHAKESPEARE CONTEMP ENGL DRAMA	<i>3 credits</i>
Readings in such playwrights as Lyly, Greene, Marlowe, Jonson, Beaumont, Fletcher, Webster, Middleton and Ford and in contemporary writings relevant to theory and practice of drama.		
618	MILTON	<i>3 credits</i>
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.		

619	17TH CENTURY ENGLISH LITERATURE	<i>3 credits</i>
An examination of seventeenth-century British authors, including Donne, Jonson, Marvell, Milton, Bacon, and Bunyan, their canonical positions, their craft, and their literary criticism.		
620	AUTOBIOGRAPHY AS LITERATURE	<i>3 credits</i>
This course examines the genre of autobiography and memoir. A wide representation of autobiographies will be the focus of discussion and analysis.		
625	AUTOBIOGRAPHICAL WRITING	<i>3 credits</i>
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 & CONTEMPORARIES	<i>3 credits</i>
Writings of John Keats, studied against background of romantic poetic theory and poetry of Keats' contemporaries		
630	LITERATURE OF THE 1930S	<i>3 credits</i>
A study of 1930s American literature in its social context, using recent critical theory to examine relationships between history and literature.		
643	SEMINAR IN JAMES	<i>3 credits</i>
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.		
645	POE AND HAWTHORNE	<i>3 credits</i>
Substantial readings from each author: tales, novels, essays, letters, poetry. Also, representative literary criticism about each author.		
646	WHITMAN & DICKINSON	<i>3 credits</i>
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	<i>3 credits</i>
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	<i>3 credits</i>
This seminar examines the pragmatic roots of composition studies--the "tacit tradition," including classical expressivism, and criticisms of that movement.		
660	CULTURAL STD:THEORY & PRACTICE	<i>3 credits</i>
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	<i>3 credits</i>
Inquiry into nature and value of literature and problems of practical criticism as represented in major statements of ancient and modern critics.		
670	MODERN LINGUISTICS	<i>3 credits</i>
Introductory examination of methods and results of modern grammatical research in syntax, semantics, phonology and dialects. Goals include understanding of language variation and background preparation for linguistic studies of literature.		
673	THEORIES OF COMPOSITION	<i>3 credits</i>
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.		
674	RSCH METHODOL IN COMPOSITION	<i>3 credits</i>
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.		
675	WRITING FOR MBAS	<i>3 credits</i>
Emphasizes managerial writing. Writing tasks are presented as decision-making tools, and students develop strategies for messages to subordinates, analytical reports and messages to outside audiences.		
676	THEORY & TEACHING BASIC COMP	<i>3 credits</i>
Review of current research and exploration of specific instructional methods for teaching basic composition.		
677	SCIENCE WRITING	<i>3 credits</i>
Study of principles and writing practice for effective communication in the physical or social sciences, including purpose, audience, specialized document structure, and oral presentations.		
679	SCHOLARLY WRITING	<i>3 credits</i>
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	<i>3 credits</i>
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.		
689	SEMINAR IN ENGLISH	<i>2-3 credits</i>
(May be repeated with change of topics) Special topics within the general field of literature and language, usually focusing on major figures or themes.		

698	INDIVIDUAL READING IN ENGLISH	<i>1-3 credits</i>
Individual study under guidance of professor who directs and coordinates student's reading and research.		
699	MASTERS THESIS	<i>1-6 credits</i>
Original work in the field of literature and language and completion of graduate student's required thesis.		



Geography and Planning (3350)

100	INTRODUCTION TO GEOGRAPHY	<i>3 credits</i>
Analysis of world patterns of population characteristics, economic activities, settlement features, landforms, climate as interrelated factors.		
250	WORLD REGIONAL GEOGRAPHY	<i>3 credits</i>
Survey of world regions with focus on both physical and human landscapes; emphasis on world patterns and issues from a regional perspective.		
275	GEOGRAPHY CULTURAL DIVERSITY	<i>2 credits</i>
Prerequisites: 32 credit hours including English Composition I and II (3300:111, 112) or equivalent. Evaluation of cultural elements unique to various geographical regions to explain why different people utilize resources differently, and how cultural diversity affects regional conflicts.		
305	MAPS & MAP READING	<i>3 credits</i>
Introduction to use and interpretation of maps. Study of basic map types, elements, symbolism, and historical and cultural context of maps. (Laboratory.)		
310	PHYSICAL & ENVRN GEOGRAPHY	<i>3 credits</i>
Landforms, weather and climate, soils and vegetation and natural hazards. Nature and distribution of these environmental elements and their significance to society. Laboratory.		
314	CLIMATOLOGY	<i>3 credits</i>
Prerequisite: 310 or permission. Analysis and classification of climates, with emphasis on regional distribution. Basic techniques in handling climate data.		
320	ECONOMIC GEOGRAPHY	<i>3 credits</i>
Geographical basis for production, exchange, consumption of goods. Effect of economic patterns on culture and politics.		
350	GEOGRAPHY OF THE U.S. & CANADA	<i>3 credits</i>
Regional and topical study of United States and Canada, with emphasis on environmental, economic and cultural patterns and their interrelationships.		
351	OHIO: ENVIRONMENT & SOCIETY	<i>3 credits</i>
Regional and topical analysis of cultural, economic and environmental patterns; also in comparison with other states.		
353	LATIN AMERICA	<i>3 credits</i>
Analysis of relationship of cultural and economic patterns to physical environment in Mexico, Central America, the Caribbean and South America.		
356	EUROPE	<i>3 credits</i>
Regional and topical analysis of cultural, economic and environmental patterns.		
360	ASIA	<i>3 credits</i>
Environmental, cultural and economic geography of East, Southeast, South Asia and Middle East with emphasis on the contemporary.		
363	AFRICA SOUTH OF THE SAHARA	<i>3 credits</i>
Environmental and human bases of regional contrasts. Emphasis on tropical environmental systems and changing patterns of resource utilization.		
397	SP: GEOGRAPHY AND PLANNING	<i>1-3 credits</i>
(May be repeated for a total of five credits) Prerequisite: permission of instructor. Directed reading and research in special field of interest.		
405	GEOGRAPHIC INFORMATION SYSTEMS	<i>3 credits</i>
Prerequisites: 305 or permission. Introduction to the principles and concepts underlying geographic information systems (GIS) and their application in professional practice and academic research. Laboratory.		
407	ADVANCED GEOGRAPHIC INFO SYS	<i>3 credits</i>
Prerequisites: 405 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.		
409	ARCHAEOGEOPHYSICAL SURVEY	<i>3 credits</i>
Prerequisites: 3240:250 or 3370:101 or 3350:310. Advanced instruction in subsurface geophysical survey techniques in archaeology. Emphasis on magnetic gradiometry and electrical resistivity techniques, image processing and geological and archaeological interpretation.		
415	ENVIRONMENTAL PLANNING	<i>3 credits</i>

	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.	
420	URBAN GEOGRAPHY	<i>3 credits</i>
	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.	
422	TRANSPORTATION SYSTEMS PLANNING	<i>3 credits</i>
	Study and analysis of transportation systems from a geographic perspective. Emphasis on transportation problems and issues, elements of transportation planning.	
424	MILITARY GEOGRAPHY	<i>3 credits</i>
	Influence of physical and human geography on military operations and military history. Role played by geography in international conflicts.	
432	LAND USE PLANNING LAW	<i>3 credits</i>
	Acquaint student with past and present approaches to land use control in the United States and examine the political, economic, social and legal forces that have shaped existing land-use legislation.	
433	PRACTICAL APPROACHES TO PLANNING	<i>3 credits</i>
	Introduction to the history, theories and forms of urban planning.	
437	PLAN ANALYSIS & PROJ METHODS	<i>3 credits</i>
	Introduction to the primary analytic techniques for small-area demographic and economic analysis and projection.	
438	LAND USE PLANNING METHODS	<i>3 credits</i>
	Application of GIS and other computer-based tools to the preparation, implementation and evaluation of comprehensive land use plans.	
439	HISTORY OF URBAN DESIGN & PLAN	<i>3 credits</i>
	Origins of human settlements and planning from the perspective of urban design and related societal trends. Comparison of world regional and historical urban forms. Experience in "reading" settlements as visual landscapes.	
440	CARTOGRAPHY	<i>3 credits</i>
	Use of graphic/cartographic principles and techniques as a means of presenting geographical information on maps and producing maps. Laboratory.	
441	GLOBAL POSITIONING SYS (GPS)	<i>1 credits</i>
	Fundamentals of Global Positioning System (GPS), with emphasis on geographic and planning activities. Includes hands-on exercises.	
442	CARTOGRAPHIC THEORY & DESIGN	<i>3 credits</i>
	Prerequisite: 440 or permission of instructor. Principles and techniques of thematic mapping. Stresses maps as communications tools. Examines principle thematic mapping techniques and means of presenting qualitative and quantitative data. Laboratory.	
443	URBAN APPLICATIONS IN GIS	<i>3 credits</i>
	Prerequisite: 405 or permission of instructor. Applications of GIS in the urban context, including methods used for analysis of population density gradients, migration, and accessibility.	
444	APPL IN CART & GEOG INFO SYS	<i>3 credits</i>
	Prerequisite: 340 and 405 or permission. Application of analytic and presentation techniques from cartography and geographic information systems to practical problems in geography and planning. Laboratory.	
445	GIS DATABASE DESIGN	<i>3 credits</i>
	Prerequisite: 405 or permission. Introduction to theory and concepts of geographic data modeling, geodatabase design, and topology. Emphasis on current practices and methodologies in geography and planning.	
446	GIS PROGRAMMING & CUSTOMIZATION	<i>3 credits</i>
	Prerequisites: 3350:405 or permission. Introduction to use of scripting languages for customizing the interface and extending the functionality of desktop GIS software.	
447	REMOTE SENSING	<i>3 credits</i>
	Prerequisite: 305 or permission. Concepts, systems, and methods of applying aerial photography, satellite imagery, and other remote-sensing data for analyzing geographic, geological, and other earth phenomena.	
449	ADVANCED REMOTE SENSING	<i>3 credits</i>
	Prerequisite: 447 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.)	
450	DEVELOPMENT PLANNING	<i>3 credits</i>
	A study of planning concepts and techniques for developing countries, including growth and development, planning agencies, regional inequities and alternative approaches.	
460	POLITICAL GEOGRAPHY	<i>3 credits</i>
	Principles and theory in contemporary domestic and international political geographies. Emphasis on the changing local and global patterns of electoral politics, security, and diplomacy.	
481	RESEARCH METH IN GEOG & PLAN	<i>3 credits</i>
	Prerequisites: 12 credits in Geography and Planning. Investigation of library and archive resources. Emphasis on development of professional writing skills.	
483	SPATIAL ANALYSIS	<i>3 credits</i>

Prerequisite: 12 credits in Geography & Planning. Analysis of mapped statistical surfaces. Principles for use of map as model for statistical evidence, prediction, hypothesis testing.

485	INTERN: GEOGRAPHY & PLANNING	<i>1-3 credits</i>
Prerequisite: permission. (May be repeated for a total of six credits.) Supervised professional experience in planning agencies or related settings. Only three credits can be used toward a degree in Geography and Planning.		
489	ST: GEOGRAPHY	<i>1-3 credits</i>
(May be repeated) Selected topics of interest in geography.		
490	W: GEOGRAPHY	<i>1-3 credits</i>
(May be repeated for a total of six credits) Group studies of special topics in geography.		
495	SOIL & WATER FIELD STUDIES	<i>3 credits</i>
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.		
496	FIELD RESEARCH METHODS	<i>3 credits</i>
Prerequisite: 12 credits in Geography & Planning. Field work enabling student to become competent in collecting, organizing and analysis of data while carrying out field research projects.		
497	REGIONAL FIELD STUDIES	<i>1-3 credits</i>
Off-campus intensive study of geographic features of a region or regions through direct observations and travel using appropriate field study methods. (repeatable up to 6 credits)		
498	HONORS RESEARCH IN GEOGRAPHY	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisite: permission of department honors preceptor, honors student only. Exploration of research topics and issues in contemporary geography. Selection of research topic and writing of research paper in proper scholarly form under direction of faculty member.		
499	CAREER ASSESSMENT SEMINAR	<i>2 credits</i>
Prerequisites: 24 credits in department or permission. Students demonstrate knowledge and skills acquired as geography majors through assessment testing and semester project, evaluate career options, and prepare resume and portfolio.		
505	GEOGRAPHIC INFORMATION SYSTEMS	<i>3 credits</i>
Introduction to the principles and concepts underlying geographic information systems (GIS) and their application in professional practice and academic research. Laboratory.		
507	ADVANCED GEOGRAPHIC INFO SYS	<i>3 credits</i>
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	<i>3 credits</i>
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	<i>3 credits</i>
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	<i>3 credits</i>
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	TRANSPORT SYSTEMS PLANNING	<i>3 credits</i>
Study and analysis of transportation systems from a geographic perspective. Emphasis on transportation problems and issues, elements of transportation planning.		
524	MILITARY GEOGRAPHY	<i>3 credits</i>
Influence of physical and human geography on military operations and military history. Role played by geography in international conflicts.		
532	LAND USE PLANNING LAW	<i>3 credits</i>
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 PLANN	<i>3 credits</i>
Role of geographic investigation in city, regional and resource planning.		
537	PLAN ANALYSIS & PROJ METHODS	<i>3 credits</i>
Introduction to the primary analytic techniques for small-area demographic and economic analysis and projection.		
538	LAND USE PLANNING METHODS	<i>3 credits</i>
Application of GIS and other computer-based tools to the preparation, implementation and evaluation of comprehensive land use plans.		
538	LAND USE PLANNING METHODS	<i>3 credits</i>
Land Use Planning Methods		
539	HISTORY OF URBAN DESIGN & PLAN	<i>3 credits</i>
Origins of human settlements and planning from the perspective of urban design and related societal trends. Comparison of world regional and historical urban forms. Experience in "reading" settlements as visual landscapes.		

540	CARTOGRAPHY	<i>3 credits</i>
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 SYS (GPS)	<i>1 credits</i>
Fundamentals of Global Positioning System (GPS), with emphasis on geographic and planning activities. Includes hands-on exercises.		
542	CARTOGRAPHIC THEORY & DESIGN	<i>3 credits</i>
Prerequisite: 540 or permission of instructor. 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	<i>3 credits</i>
Prerequisite: 505 or permission. Applications of GIS in the urban context, including methods used for analysis of population density gradients, migration, and accessibility.		
544	APPL IN CART & GEOG INFO SYS	<i>3 credits</i>
Prerequisites: 505 and 540 or permission. Application of analytic and presentation techniques from cartography and geographic information systems to practical problems in geography and planning. Laboratory.		
545	GIS DATABASE DESIGN	<i>3 credits</i>
Prerequisite: 505 or permission. Introduction to theory and concepts of geographic data modeling, geodatabase design, and topology. Emphasis on current practices and methodologies in geography and planning.		
546	GIS PROGRAMMING & CUSTOMIZATION	<i>3 credits</i>
Prerequisites: 3350:505 or permission. Introduction to use of scripting languages for customizing the interface and extending the functionality of desktop GIS software.		
547	REMOTE SENSING	<i>3 credits</i>
Concepts, systems, and methods of applying aerial photography, satellite imagery, and other remote-sensing data for analyzing geographic, geological, and other earth phenomena.		
549	ADVANCED REMOTE SENSING	<i>3 credits</i>
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	<i>3 credits</i>
A study of planning concepts and techniques for developing countries, including growth and development, planning agencies, regional inequities and alternative approaches.		
560	POLITICAL GEOGRAPHY	<i>3 credits</i>
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 METH IN GEOG & PLAN	<i>3 credits</i>
Investigation of library and archive resources. Emphasis on development of professional writing skills.		
583	SPATIAL ANALYSIS	<i>3 credits</i>
Analysis of mapped statistical surfaces. Principles for use of map as model for statistical evidence, prediction, hypothesis testing.		
589	ST: GEOGRAPHY	<i>1-3 credits</i>
(May be repeated) Selected topics of interest in geography.		
590	W: GEOGRAPHY	<i>1-3 credits</i>
(May be repeated for a total of six credits) Group studies of special topics in geography.		
595	SOIL & WATER FIELD STUDIES	<i>3 credits</i>
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	<i>3 credits</i>
Field work enabling student to become competent in collecting, organizing and analysis of data while carrying out field research projects. Field trips required.		
597	REGIONAL FIELD STUDIES	<i>1-3 credits</i>
Off-campus intensive study of geographic features of a region or regions through direct observations and travel using appropriate field study methods. (repeatable up to 6 credits)		
600	SEM: GEOGRAPHY AND PLANNING	<i>3 credits</i>
(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.		
601	SEM: GEOGRAPHY AND PLANNING	<i>3 credits</i>
(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	<i>3 credits</i>
Introduction to the political, institutional and ethical foundations and procedural theories of urban and regional planning.		
631	FACILITIES PLANNING	<i>3 credits</i>

Study of need, process and limitation of urban facilities planning.

633	COMPARATIVE PLANNING	<i>3 credits</i>
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	<i>3 credits</i>
Prerequisite: 583 or permission. Advanced concepts and methodologies in geographic research. Emphasis on quantitative revolution in geographical analysis including multivariate procedures as factor, discriminant and economical analysis, and multidimensional scaling.		
685	PLANNING INTERNSHIP	<i>3 credits</i>
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.		
687	HISTORY OF GEOGRAPHIC THOUGHT	<i>3 credits</i>
Critical review of major developments in geographic concepts from ancient times to present.		
695	GRADUATE COLLOQUIUM	<i>1 credits</i>
(May be repeated for a maximum of four credits.) Lecture series on topics of interest in geography and planning, by academic and non-academic professionals for both faculty and students. Does not satisfy degree requirements. Credit/noncredit.		
698	INDIVIDUAL READING & RESEARCH	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisite: permission of instructor. Intensive investigation of selected topics under guidance of faculty member.		
699	THESIS RESEARCH	<i>1-6 credits</i>
Independent and original work toward a thesis.		



Geology and Environmental Science (3370)

100	EARTH SCIENCE	<i>3 credits</i>
Introduction to earth science for non-science majors. Survey of earth in relation to its physical composition, structure, history, atmosphere, oceans; and relation to solar system and universe.		
101	INTRODUCTORY PHYSICAL GEOLOGY	<i>4 credits</i>
A study of the nature of earth, its materials, and the processes which continue to change it. Laboratory, field trips.		
102	INTRODUCTORY HISTORICAL GEOL	<i>4 credits</i>
Prerequisite: 101. Geologic history of earth, succession of major groups of plants and animals interpreted from rocks, fossils. Laboratory, field trips.		
103	NATURAL SCIENCE: GEOLOGY	<i>3 credits</i>
Study of basic principles and investigative techniques in various fields of geology with emphasis on relationship of geologic processes to society.		
104	EXERCISES IN PHYSICAL GEOLOGY	<i>1 credits</i>
Prerequisites: 100 or 103 or 200/permission of geology adviser. Laboratory exercises on the identification of earth materials and the utilization and interpretation of geologic data and maps.		
105	GEOLOGY FOR ENGINEERS	<i>3 credits</i>
Introduction of physical geology to engineers, including mechanics, hydraulics and case studies that illustrate interactions between geology and engineering. Laboratory, field trips.		
121	DINOSAURS	<i>1 credits</i>
Introductory course exploring the geological occurrence, mode of fossilization, evolutionary development, habits, and sudden extinction of the largest known land vertebrates.		
122	MASS EXTINCTIONS & GEOLOGY	<i>1 credits</i>
Catastrophic changes in plants and animals have occurred throughout earth history. The causes of these extinctions have sparked debate which has enlivened the scientific world.		
125	EARTHQUAKES: WHY, WHERE, WHEN?	<i>1 credits</i>
Causes and effects of earthquakes, geological settings for earthquakes, seismic measurements, mechanical response of rock to stress, earthquake prediction and precautionary measures.		
126	NATURAL DISASTERS & GEOLOGY	<i>1 credits</i>
A study of the earth's natural hazards including earthquakes, landslides, meteorites and tsunamis.		
127	THE ICE AGE & OHIO	<i>1 credits</i>
Introductory course covering the effects of the ice age on the geology, vegetation, fauna and economy of Ohio.		
128	GEOLOGY OF OHIO	<i>1 credits</i>
Survey of Ohio's geologic setting and history, natural resources, landforms, and their significance in terms of human activity, from early settlement to future economy.		
129	MEDICAL GEOLOGY	<i>1 credits</i>
Abundance and distribution of trace elements in surface and groundwater, soils and rocks. The effects of trace elements to health through dose-response relationships.		
130	GEOL RECORD OF CLIMATE CHANGE	<i>1 credits</i>
Examines evidence for natural climate changes in geologic past and evaluates the role of modern society in influencing future climate.		
132	GEMSTONES & PRECIOUS METALS	<i>1 credits</i>
Introduction to minerals which form gemstones and precious metals. Topics to be covered include physical properties, geologic occurrences, and geographic locations of major deposits.		
133	CAVES	<i>1 credits</i>
Topics include: karst processes and the origin of caverns; carbonate depositional environments and the origin of limestones; environmental problems associated with karst landscapes		
134	HAZARDOUS & NUCLEAR WASTE DISP	<i>1 credits</i>
Disposition of hazardous waste in secured landfill site. Geologic factors which determine the selection of low-level and high-level radioactive waste sites.		
135	GEOLOGY OF ENERGY RESOURCES	<i>1 credits</i>
Topics include the origin of hydrocarbon and coal deposits, global distribution of energy resources, environmental impact of energy consumption.		
137	EARTH'S ATMOSPHERE & WEATHER	<i>1 credits</i>

Structure and composition of the atmosphere; earth's radiation budget; atmospheric moisture, clouds and precipitation; weather systems and storms, severe weather, Ohio weather.

139	CT: GEOLOGY	<i>1 credits</i>
(May be repeated for up to 2 credits.) Special topics offered once or only occasionally in areas where no formal course exists.		
140	ROCKY MOUNTAIN NATIONAL PARKS	<i>1 credits</i>
Badlands, Yellowstone, Grand Canyon and other Rocky Mountain National Parks will be used to illustrate basic principles of geology.		
141	NATURAL ENVIRONMENT OF CHINA	<i>1 credits</i>
Introduction to geographical and geological environments of China. Geography and geology of geoparks will be presented and discussed as examples		
171	INTRODUCTION TO THE OCEANS	<i>3 credits</i>
Provides a basic introduction to the oceans. Topics include formation of the oceans, ocean circulation, waves and tides, marine animals, marine communities, and climate change.		
200	ENVIRONMENTAL GEOLOGY	<i>3 credits</i>
Analysis of geologic aspects of the human environment with emphasis on geologic hazards and environmental impact of society's demand for water, minerals and energy.		
201	EXERC ENVIRONMENTL GEOLOGY I	<i>1 credits</i>
Prerequisite or corequisite: 200. Recognition, evaluation of environmental problems related to geology through field, laboratory exercises and demonstrations which apply concepts from 200. Laboratory.		
203	EXERC ENVIRONMENTL GEOLOGY II	<i>1 credits</i>
Prerequisites: 200 (or corequisite) and 201. Recognition and evaluation of environmental problems related to geology. (Continuation of 201) Laboratory.		
211	INTRO TO ENVIRONMENTAL SCIENCE	<i>3 credits</i>
Interdisciplinary analysis of our relationship with nature and dependence upon the environment, with emphasis on evaluation of current environmental problems and rational solutions.		
230	MINERAL SCIENCE	<i>4 credits</i>
Prerequisites: 101. Corequisites: 3150:151, 152. Crystallography and chemistry of minerals. Topics also covered include physical, chemical and optical properties, occurrences and uses of the common non silicate minerals. Laboratory, field trips.		
231	SILICATE MINERAL & PETROLOGY	<i>4 credits</i>
Prerequisite: 3370:101 and corequisites: 3150:151, 152. Physical and chemical properties, occurrence, and uses of common silicate minerals, followed by megascopic and microscopic identification, classification, and petrogenesis of rocks. Laboratory.		
301	ENGINEERING GEOLOGY	<i>3 credits</i>
Prerequisites: Four credits in introductory physical geology and permission. Presents quantitative analysis of geologic features and processes and is supported by the study of case histories. Lecture, lab, field study, field trips.		
310	GEOMORPHOLOGY	<i>3 credits</i>
Prerequisite: 101. Study of landforms as a function of structure, process, and time. Laboratory, field trips.		
324	SEDIMENTATION & STRATIGRAPHY	<i>4 credits</i>
Prerequisites: 102 and 231. Introduction to sedimentary processes and environments; stratigraphic principles and techniques. Hand specimens, thin sections, and sedimentary sequences studied. Laboratory, field trips.		
350	STRUCTURAL GEOLOGY	<i>4 credits</i>
Prerequisite: 101 or permission. Origins and characteristics of folds, faults, joints and rock cleavage. Structural features of sedimentary, igneous and metamorphic rocks. Laboratory, field trips.		
360	PALEOBIOLOGY	<i>4 credits</i>
Prerequisite: 101 or 3100:111 Introductory course emphasizing morphology and evolution of major invertebrate groups with consideration of practical applications of paleontology. Laboratory, field trips.		
371	OCEANOGRAPHY	<i>4 credits</i>
Prerequisite: 101. Study of the dominant feature of our planet, the oceans, emphasizing ocean basins evolution, and physical, chemical and biological processes in the various marine environments. Field trips.		
405	ARCHAEOLOGICAL GEOLOGY	<i>3 credits</i>
Prerequisites: 101, or permission. Provides background in geologic principles and techniques relevant to archaeologists. Topics include stratigraphy, absolute dating, locality assessment, zooarchaeology, taphonomy, and remote sensing. Laboratory, field trips.		
407	ARCHAEOGEOPHYSICAL SURVEY	<i>3 credits</i>
Prerequisites: 3240:250 or 3370:101 or 3350:310. Advanced instruction in subsurface geophysical survey techniques in archaeology. Emphasis on magnetic gradiometry and electrical resistivity techniques, image processing and geological and archaeological interpretation.		
410	REGIONAL GEOLOGY OF N AMERICA	<i>3 credits</i>
Prerequisites: 101, 102, or permission; recommended: 350. Examination of physiographic provinces of North America emphasizing structure, tectonic setting, stratigraphy and processes responsible for landforms in each province. Laboratory, field trips.		
411	GLACIAL GEOLOGY	<i>3 credits</i>

Prerequisite: permission. Causes and effects of Pleistocene expansion of polar ice masses with emphasis on glacial deposits and world climatic changes. Laboratory, field trips.

421	COASTAL GEOLOGY	<i>3 credits</i>
Prerequisites: 101, 324 or permission of instructor. Study of the origins and evolution of coasts and coastal deposits with particular attention paid to the interaction of waves and currents with sediment, and the development of associated sedimentary features. Field trips.		
425	PRINC: SEDIMENTRY BASIN ANALYS	<i>3 credits</i>
Prerequisites: 324 and 360 or permission. Primarily the study of depositional systems, regional and global stratigraphic cycles, and sedimentation and plate tectonics.		
432	OPTCL MNRLGY, INTRO PETROLOGY	<i>3 credits</i>
Prerequisites: 230 and 231. Optical techniques for identification, characterization, and classification of minerals and rocks using the petrographic microscope. Laboratory.		
433	ADVANCED PETROLOGY	<i>3 credits</i>
Prerequisite: 432. Petrogenesis of igneous, metamorphic and sedimentary rocks as determined by microscopic studies of textures and mineral assemblages using thin sections. Laboratory.		
435	PETROLEUM GEOLOGY	<i>3 credits</i>
Prerequisite: 350 or permission; recommended: 324. Natural occurrences of petroleum. Characteristics, origin, entrapment and exploration methods. Laboratory, field trips.		
436	COAL GEOLOGY	<i>3 credits</i>
Prerequisites: 101, 102; recommended: 324. Origin, composition and occurrence of coal with emphasis on depositional environments, coalification processes, exploration, evaluation and exploitation. Laboratory, field trips.		
437	ECONOMIC GEOLOGY	<i>3 credits</i>
Prerequisites: 231 and 350. Study of metallic and nonmetallic mineral deposits emphasizing paragenesis and exploration. Laboratory, field trips.		
441	FUNDAMENTALS OF GEOPHYSICS	<i>3 credits</i>
Prerequisites: 3450:223 or permission and 3650:292. Fundamental concepts in solid earth geophysics, planetary physics, geodesy, and geomagnetism. Contributions of geophysics to recent major developments in geoscience.		
444	ENVIRONMENTAL MAGNETISM	<i>3 credits</i>
Prerequisite: 101 or permission. Introduction to the theory and methods of environmental magnetism and the application of environmental magnetism to interpreting sedimentary deposits.		
445	ENVIRON AND ENG GEOPHYSICS	<i>3 credits</i>
Prerequisite: 3650:261 or 3650:291 or permission of instructor. Corequisite: 3650:262 or 3650:292 or permission of instructor. Basic subsurface exploration using ground penetrating radar and multi-channel electrical resistivity. Applications in environmental assessment, civil engineering and geotechnical engineering. Field trips.		
446	EXPLORATION GEOPHYSICS	<i>3 credits</i>
Prerequisites: 3450:223, 3650:292 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.		
449	BOREHOLE GEOPHYSICS	<i>3 credits</i>
Prerequisite: permission. Basic principles and techniques of geophysical well logging with emphasis on electrical, radioactive, and sonic measures and their quantitative evaluation. Applications in oil, gas, and groundwater exploration. Laboratory.		
450	ADVANCED STRUCTURAL GEOLOGY	<i>3 credits</i>
Prerequisite: 350 or permission. Fundamental and advanced concepts of structural geology with emphasis on current and developing concepts. Laboratory, field trips.		
451	FLD/LAB STD: ENVIRONMENTAL SCI	<i>3 credits</i>
Prerequisite: permission of instructor. Field/Laboratory inquiry into a specific interdisciplinary, environmental science topic. Students complete a research project involving collecting, analyzing and interpreting real world data. (May be repeated once.)		
452	GEOL & ENVIRON SC SRVC LEARN	<i>1-3 credits</i>
Prerequisite: Permission of instructor. Team service-learning project that involves collection, organization, analysis, and presentation of data. Field trips. (May be repeated for a maximum of four credits.)		
453	GEOLOGY FIELD CAMP I	<i>3 credits</i>
Prerequisite: 101 and 102 and permission. Introduction to collection and interpretation of field data and construction of geologic maps. Student will bear trip expenses.		
454	GEOLOGY FIELD CAMP II	<i>3 credits</i>
Prerequisites: 231, 350, 453, or permission. Advanced techniques and methods of field geology necessary for detailed geological maps and interpretation. Student will bear trip expenses.		
455	FIELD STUDIES IN GEOLOGY	<i>1-3 credits</i>
Prerequisite: 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 a total of four credits.)		
462	MACROEVOLUTION	<i>3 credits</i>

Prerequisites: 360 or 3100:111. Provides a comprehensive treatment of macroevolutionary theory, focusing on evidence from the fossil record. Topics include genetics, speciation, development, and fossil lineages. Laboratory.

463	ENVIRONMENTAL MICROPALAEONTOLOGY	<i>3 credits</i>
Prerequisite: 360 or permission. Introduction to techniques of micropaleontology as proxy indicators for environmental and climate change. Laboratory. Field trips.		
465	GEOMICROBIOLOGY	<i>3 credits</i>
Prerequisites: 3150:151 and 3150:153. A course addressing the physiology, ecology, and activities of microorganisms that mediate important biogeochemical processes, and the interdisciplinary approaches to studying them.		
470	GEOCHEMISTRY	<i>3 credits</i>
Prerequisite: 101, 230, and 231, 3150:151, 152 and 153 or permission. Application of chemical principles to the study of geologic processes. Laboratory, field trips.		
472	STABLE ISOTOPE GEOCHEMISTRY	<i>3 credits</i>
Prerequisite: 101 and 102; 3150:151, 152 and 153; 3450:221. Application of stable isotope geochemistry to the study of hydrologic and carbon cycles, modern sedimentary environments, and the interpretation of sedimentary rocks.		
474	GROUNDWATER HYDROLOGY	<i>3 credits</i>
Prerequisite: 101. Origin, occurrence, regimen and utilization of groundwater. Qualitative and quantitative presentation of geological and geochemical aspects of groundwater hydrology. Laboratory, field trips.		
480	SEM: ENVIRONMENTAL STUDIES	<i>2 credits</i>
Discussion of specific environmental topic(s) from an interdisciplinary viewpoint; resource persons are drawn from the University and surrounding community.		
481	ANALYTICAL METHODS IN GEOLOGY	<i>2 credits</i>
Prerequisite: 230, 231. A survey of analytical methods used to solve geologic problems with emphasis on method selection, proper sample collection, analysis of data quality and data presentation.		
484	GEOSCIENCE INFO ACQ & MGT	<i>2 credits</i>
Prerequisite: Must be a Geology Department graduate student or senior major in Geology, or have permission of instructor. Methods for finding, gathering, managing, and evaluating geoscience information. Emphasis on finding data sources (including electronic), creating valid data sets, visualizing data.		
485	INDIV READINGS: GEOL & ENV SC	<i>1-3 credits</i>
Prerequisite: permission of instructor. (May be repeated for a total of 4 credits) Independent study and directed readings on a selected topic to fit an individual student's program.		
490	W: GEOLOGY & ENVIRONMENTAL SCI	<i>1-4 credits</i>
Group studies of special topics in geology and environmental science. May not be used to meet undergraduate major requirements in the Department. May be used for elective credit only. (May be repeated for up to 4 credits.)		
491	INTERN: GEOL & ENVIRON SC	<i>1-3 credits</i>
Prerequisite: Permission of Department Chair. Supervised professional experience in geology or environmental science. Only three credits may be applied toward a degree in geology. (May be repeated for a total of six credits.)		
497	HONORS PROJ IN GEOLOGY	<i>1-3 credits</i>
(May be repeated for a total of six credits.) Prerequisite: permission of department honors preceptor, Honors student only. Exploration of research topics and issues in geology. Selection of research topic and writing of research paper in proper scholarly form under direction of faculty member.		
498	ST: GEOLOGY	<i>1-3 credits</i>
Prerequisite: permission of instructor. Special lecture courses offered once or only occasionally in areas where no formal course exists.		
499	RESEARCH PROBLEMS IN GEOLOGY	<i>1-3 credits</i>
(May be repeated for a total of four credits) Prerequisite: permission. Independent research leading to the completion of a written paper or presentation at a professional meeting.		
505	ARCHAEOLOGICAL GEOLOGY	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Provides background in geologic principles and techniques relevant to archaeologists. Topics include stratigraphy, absolute dating, locality assessment, zooarchaeology, taphonomy, and remote sensing. Required lab, field trips.		
507	ARCHAEOGEOPHYSICAL SURVEY	<i>3 credits</i>
Prerequisite: admission to 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 N AMERICA	<i>3 credits</i>
Prerequisite: admission to 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	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Causes and effects of Pleistocene expansion of polar ice masses with emphasis on glacial deposits and world climatic changes. Field trips.		
521	COASTAL GEOLOGY	<i>3 credits</i>

Prerequisite: admission to Geology Master's program or permission. Study of the origins and evolution of coasts and coastal deposits with particular attention paid to the interaction of waves and currents with sediment, and the development of associated sedimentary features. Field trips.

525	PRINC: SEDIMENTRY BASIN ANALYS	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Primarily the study of depositional systems, regional and global stratigraphic cycles, and sedimentation and plate tectonics.		
532	OPTCL MNRLGY, INTRO PETROLOGY	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Optical techniques for identification, characterization, and classification of minerals and rocks using the petrography microscope. Laboratory.		
533	ADVANCED PETROLOGY	<i>3 credits</i>
Prerequisite: 532. Petrogenesis of igneous, metamorphic and sedimentary rocks as determined by microscopic studies of textures and mineral assemblages using thin section. Laboratory.		
535	PETROLEUM GEOLOGY	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Natural occurrences of petroleum. Characteristics, origin, entrapment and exploration methods. Laboratory, field trips.		
536	COAL GEOLOGY	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Origin, composition and occurrence of coal with emphasis on depositional environments, coalification processes, exploration, evaluation and exploitation. Laboratory, field trips.		
537	ECONOMIC GEOLOGY	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Study of metallic and nonmetallic mineral deposits emphasizing paragenesis and exploration. Laboratory, field trips.		
541	FUNDAMENTALS OF GEOPHYSICS	<i>3 credits</i>
Prerequisite: admission to 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	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Introduction to the theory and methods of environmental magnetism and the application of environmental magnetism to interpreting sedimentary deposits.		
545	ENVIRON AND ENG GEOPHYSICS	<i>3 credits</i>
Advanced subsurface exploration using ground penetrating radar and multi-channel electrical resistivity. Applications in environmental assessment, civil engineering and geotechnical engineering. Field trips.		
546	EXPLORATION GEOPHYSICS	<i>3 credits</i>
Prerequisite: admission to 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.		
550	ADVANCED STRUCTURAL GEOLOGY	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Fundamental and advanced concepts of structural geology with emphasis on current and developing concepts. Laboratory, field trips.		
551	FLD/LAB STD: ENVIRONMENTAL SCI	<i>3 credits</i>
Prerequisite: permission of instructor. Field/Laboratory inquiry into a specific interdisciplinary, environmental science topic. Students complete a research project involving collecting, analyzing and interpreting real world data. (May be repeated once.)		
552	GEOL & ENVIRON SC SRVC LEARN	<i>1-3 credits</i>
Graduate students gain experience as project managers for class projects by designing research plans, supervising data collection, lab analyses and preparing final project reports.		
553	GEOLOGY FIELD CAMP I	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Introduction to collection and interpretation of field data and construction of geologic maps.		
554	GEOLOGY FIELD CAMP II	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Advanced techniques and methods of field geology necessary for interpreting detailed geological maps.		
555	FIELD STUDIES IN GEOLOGY	<i>1-3 credits</i>
Prerequisite: 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	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Provides a comprehensive treatment of macroevolutionary theory, focusing on evidence from the fossil record. Topics include genetics, speciation, development, and fossil lineages. Laboratory.		
563	ENVIRONMENTAL MICROPALAEONTOLOGY	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Introduction to techniques of micropaleontology evolution and paleoecology of selected microfossil groups. Laboratory, field trips.		
565	GEOMICROBIOLOGY	<i>3 credits</i>

Prerequisite: Graduate standing. A course addressing the physiology, ecology, and activities of microorganisms that mediate important biogeochemical processes, and the interdisciplinary approaches to studying them.

570	GEOCHEMISTRY	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Application of chemical principles to the study of geologic processes. Laboratory, field trips.		
572	STABLE ISOTOPE GEOCHEMISTRY	<i>3 credits</i>
Prerequisite: admission to 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.		
574	GROUNDWATER HYDROLOGY	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Origin, occurrence, regimen and utilization of groundwater. Qualitative and quantitative presentation of geological and geochemical aspects of groundwater hydrology. Laboratory, field trips.		
580	SEM: ENVIRONMENTAL STUDIES	<i>2 credits</i>
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	<i>2 credits</i>
Prerequisite: admission to 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 of data quality and data presentation.		
584	GEOSCIENCE INFO ACQ & MGT	<i>2 credits</i>
Prerequisite: must be a Geology Department graduate student or senior major in geology, or have permission of instructor. Methods 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	<i>1-4 credits</i>
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	W: GEOLOGY & ENVIRONMENTAL SCI	<i>1-3 credits</i>
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. (May be repeated.)		
591	GRAD INTERN: GEOL & ENVIRON SC	<i>1-3 credits</i>
Prerequisite: Permission of the Chair. Supervised professional experience in geology or geophysics. (May only apply three credits toward minimum graduate requirements in Geology and Environmental Science.)		
631	ROCKS & MINERALS	<i>4 credits</i>
Prerequisite: admission to 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	<i>3 credits</i>
(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. Discusses 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	<i>3 credits</i>
Prerequisite: admission to 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	ADV FLD ST: GEOLOGY	<i>1-3 credits</i>
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. (May be repeated for a total of four credits.)		
656	GLOBAL TECTONICS	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Theoretical study of physical forces involved in formation and deformation of earth's crust with emphasis on plate tectonics and associated diastrophic features.		
661	GEOL REC OF PAST GLOBAL CHANGE	<i>3 credits</i>
Prerequisite: equivalent of baccalaureate degree in geology or permission of instructor. Study of the geologic record of past global climate and environmental change from geochemical, paleontological, sedimentological and other geological evidence.		
674	ADVANCE GROUND WATER HYDROLOGY	<i>3 credits</i>
Prerequisite: admission to Geology Master's program or permission. Study of water table and artesian aquifers under steady and nonsteady state conditions. Collection and evaluation of field data with regard to theory. Water well and well field design. Laboratory and field work.		
680	SEM: GEOLOGY	<i>2 credits</i>
(May be repeated for a total of six credits) Selected topics with reference material from original sources.		
684	SEL T: GEOLOGY	<i>1-3 credits</i>
(May be repeated for a total of eight credits) Prerequisite: permission. Topics not regularly offered as formal courses, generally of classic current importance. Entails lectures, readings, discussions and/or guided laboratory work.		

685	ADV INDIV READINGS: GEOLOGY	<i>1-4 credits</i>
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	<i>2 credits</i>
Corequisite: graduate assistantship. Training and experience in college teaching of geology under supervision of experienced faculty. May be repeated for a maximum of 8 credits. Credits may not be used to meet degree requirements. Credit/Noncredit.		
696	GEOLOGY COLLOQUIUM	<i>1 credits</i>
Lecture on current topics in geological sciences and thesis proposals and defenses by graduate students. May be repeated. Does not satisfy degree requirements.		
698	GRADUATE RESEARCH PROBLEMS	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisite: permission. Directed reading and research in an aspect of geology chosen by student in consultation with an instructor.		
699	MASTERS THESIS	<i>1-6 credits</i>
Independent and original investigation. Must be successfully completed, report written and defended before a committee.		



History (3400)

200	EMPIRES OF THE ANCIENT WORLD	<i>3 credits</i>
Comparative study of the formation of ancient empires of the Afro-Eurasian world up to the rise of Islam.		
210	HUMANITIES IN WESTERN TRAD I	<i>4 credits</i>
Prerequisites: 32 credits and completion of 3300:112 or 3300:114 or 2020:222 (or permission). Introduction to the human condition as manifested in ideas, religions, visual arts and music of Western civilization from the ancient Greeks through the Renaissance. Cannot be used to meet major requirements in History.		
211	HUMANITIES IN WESTERN TRAD II	<i>3 credits</i>
Prerequisite: 3400:210. Introduction to the human condition in the past as manifested in the ideas, religions, visual arts and music of Western civilization from the Protestant Reformation to the Present. Cannot be used to meet major requirements in History.		
221	HUMANITIES IN THE WLD SNC 1300	<i>4 credits</i>
Prerequisites: 32 credits and completion of 3300:112 or 3300:114 or 2020:222 (or permission). Introduction to the human condition as expressed in the ideas, religions, visual arts, and music of the world since 1300. Cannot be used to meet major requirements in History.		
250	U.S. HISTORY TO 1877	<i>4 credits</i>
Historical survey from the Age of Discovery and North American colonization through the creation of the United States to the Civil War and Reconstruction.		
251	U.S. HISTORY SINCE 1877	<i>4 credits</i>
Survey of United States history from the end of Federal Reconstruction to the present.		
285	WORLD CIVILIZATIONS: CHINA	<i>2 credits</i>
Prerequisite: 32 credit hours including English Composition I and II (3300:111, 112) or equivalent. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding of current events in key areas of the non-Western world. These courses can not be used to meet major requirements in History.		
286	WORLD CIVILIZATIONS: JAPAN	<i>2 credits</i>
Prerequisite: 32 credit hours including English Composition I and II (3300:111, 112) or equivalent. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding of current events in key areas of the non-Western world. These courses can not be used to meet major requirements in History.		
287	WORLD CIVILIZATIONS: SE ASIA	<i>2 credits</i>
Prerequisite: 32 credit hours including English Composition I and II (3300:111, 112) or equivalent. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding of current events in key areas of the non-Western world. These courses can not be used to meet major requirements in History.		
288	WORLD CIVILIZATIONS: INDIA	<i>2 credits</i>
Prerequisite: 32 credit hours including English Composition I and II (3300:111, 112) or equivalent. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding of current events in key areas of the non-Western world. These courses can not be used to meet major requirements in History.		
289	WORLD CIV: MIDDLE EAST	<i>2 credits</i>
Prerequisite: 32 credit hours including English Composition I and II (3300:111, 112) or equivalent. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding of current events in key areas of the non-Western world. These courses can not be used to meet major requirements in History.		
290	WORLD CIVILIZATIONS: AFRICA	<i>2 credits</i>
Prerequisite: 32 credit hours including English Composition I and II (3300:111, 112) or equivalent. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding of current events in key areas of the non-Western world. These courses can not be used to meet major requirements in History.		
291	WORLD CIV: LATIN AMERICA	<i>2 credits</i>
Prerequisite: 32 credit hours including English Composition I and II (3300:111, 112) or equivalent. Courses 285 through 291 are designed to provide a basic knowledge of past human experiences and an understanding of current events in key areas of the non-Western world. These courses can not be used to meet major requirements in History.		
300	IMPERIAL CHINA	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Selective study of institutional, intellectual, political and artistic developments in Chinese civilization from antiquity to 18th century. Emphasis on general features of traditional Chinese culture.		
301	MODERN CHINA	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. This course examines the domestic and global roots of China's 20th century modernization and their relationship to the challenges China now faces.		
303	MODERN EAST ASIA	<i>3 credits</i>

Prerequisite: a minimum of 32 credits or permission of the instructor. Exploration of domestic and global factors that shaped modern East Asia (Japan, China, Korea and Vietnam).

307	THE ANCIENT NEAR EAST	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Mesopotamia, Egypt; Israel, and neighbors to Persian Empire.		
308	GREECE	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Minoans and Mycenaeans; classical Greece to triumph of Macedon.		
310	HISTORICAL METHODS	<i>3 credits</i>
Introduction to historical research and writing. Required for history major.		
313	EASTRN ROMAN EMPIRE (324-1453)	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Byzantine culture and history from 324 to the fall of 1453.		
317	ROMAN REPUBLIC	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. An intensive survey of the Roman Republic. Attention will be given to the nature of the source material, ancient historiography, text criticism and the like.		
318	ROMAN EMPIRE	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. An intensive survey of the Roman Empire. Attention will be given to the nature of the source material, ancient historiography, text criticism and the like.		
319	MEDIEVAL EUROPE, 500-1200	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Migration of peoples, Carolingian revival, renewed invasions; social, economic and intellectual stirrings lead to birth of Europe.		
320	MEDIEVAL EUROPE, 1200-1500	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Middle Ages and the middle class; economic and political change, international wars, social unrest and religious crosscurrents.		
321	EUR: RENAISS RELG WAR 1350-1610	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of the social, political, economic, religious, and intellectual history of Early Modern Europe from the Italian Renaissance to the early 17th century.		
322	EUROPE: ABSOL/REVOL 1610-1789	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of the social, political, economic, religious, and intellectual history of Early Modern Europe from the Thirty Years War to the French Revolution.		
323	EUROPE: REVOLU TO WW 1789-1914	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Surveys the political, economic, social, and cultural history of modern Europe from the French Revolution to the First World War.		
324	EUROPE: WW I TO THE PRESENT	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. A survey of European political and social history from World War I to the present.		
325	WOMEN IN MODERN EUROPE	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. A survey of the history of women in Europe since 1500, with emphasis on their roles and the changes attendant on modernization.		
335	RUSSIA TO 1801	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of Russian history from Kievan period to death of Paul I, emphasizing development of autocratic government, Russian culture, reigns of Peter and Catherine.		
336	RUSSIA SINCE 1801	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of 19th and 20th centuries. Special emphasis on problems of modernization, the revolution and development of communism.		
337	FRANCE NAPOLEON TO DEGAULLE	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Combines a study of Napoleon and DeGaulle with a survey of the political, economic, social, and cultural/artistic trends of modern French history.		
338	ENGLAND TO 1688	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of English history from the Anglo-Saxon conquest to the Revolution of 1688. Medieval and early modern institutions, social and cultural life.		
339	ENGLAND SINCE 1688	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of English history from 1688 to the present. The reform of English institutions and life, modernization of the economy, the welfare state, society and war.		
340	SEL T: HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Includes experimental offerings such as those crossing subject of chronological lines, and subjects not listed in this General Bulletin. See departmental office for current subject.		
341	ISLAMIC FUNDAMENTALISM & REVOL	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. The political and socio-economic roots of Islamic reformism and militancy in the Middle East and North Africa since the 1960s.		
342	THE CRUSADES THROUGH ARAB EYES	<i>3 credits</i>

Prerequisite: a minimum of 32 credits or permission of the instructor. Political and military struggles, diplomatic practices and intellectual traditions of the Medieval Islamic/Arab world and the Western crusaders.

345	NATIVE NORTH AMERICAN HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. The histories of Native Americans from Columbus to the present, emphasizing a half-millennium of adaptive responses to the presence of Europeans in North America.		
350	U.S. WOMEN'S HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. History of American women's experiences and exploration of gender as a changing structure shaping American life from the colonial period through the 20th century.		
351	GLOBAL HIST:ENCNTRS & CONFLCTS	<i>4 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. This course explores historical encounters between societies to explain the development of the integrated economic, political, and cultural systems presently characterizing the modern world.		
352	THE AMERICAN WEST	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Examination of westward movement from revolution to closing of frontier; types of frontiers; impact of west on nation's development.		
354	AMERICAN IMMIGRATION	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Examination of European migrants to American colonies and United States, their reasons for leaving Europe and coming to America, and their experience after arrival.		
355	AMERICAN RELIGIOUS HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Addresses critical issues and figures in American religious history from the colonial era to present, including ways ideas have influenced political and judicial discourse.		
356	SPORTS IN AM HIST SINCE 1865	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. An examination of the reciprocal relationship between sports and various institutions of society: culture, religion, politics, education, economics, race, ethnicity, diplomacy and gender.		
358	URBAN AMERICA	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. This course looks at the significance of cities and urban development in shaping American society.		
360	UNITED STATES MILITARY HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of United States military history from the colonial era to the present.		
361	AFRICAN AMER HISTORY,1492-1877	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. This course focuses on African American history, culture and heritage from 1492 to 1877.		
362	AFRICAN AMER HISTORY,1877-PRES	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. This course focuses on African American history, culture and heritage from 1877 to present.		
363	AFRICAN AMERICAN MEN'S HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. This course will examine the experiences of African American Men from historical, socio-economic, philosophical, religious/spiritual, and psychological standpoints.		
371	SEL T: NORTH AMERICAN HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Selected topics addressing the history of North America (from the Rio Grande to the Arctic). Contact the department office concerning specific topics.		
372	SEL T: EUROPEAN HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Selected topics addressing European history from the collapse of the Roman Empire to the present. Contact the department office concerning specific topics.		
373	SEL T: OTHER	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Selected historical topics on Africa, Asia, Latin America, the ancient world and world history. Contact the department office concerning specific topics.		
377	HISTORY OF WOMEN IN LATIN AMER	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of changes and continuities in the lives of Latin American women since the colonial period; emphasis on gender, race, class in shaping women's experiences.		
378	SPAN CNQST & COLNIZTN OF AMER	<i>3 credits</i>
Prerequisites: A minimum of 32 credits or permission of the instructor. Course examines the conquest, colonization, and three-centuries-long Spanish rule in Latin America since 1492. Emphasis on culture, power inequalities, issues of identity, and memory.		
379	MODERN LATIN AMERICA	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. This course examines the history of Latin America during the national period, ca. 1820s to the present. Focus on politics, economic systems, and nation-state formation.		
381	HISTORY OF CANADA	<i>3 credits</i>

Prerequisite: a minimum of 32 credits or permission of the instructor. Survey of Canadian history from the age of the explorers to the present. Special emphasis will be placed on the history of French-Canadians, on economic development and on Canadian-American relations.

382	THE VIETNAM WAR	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. An examination and evaluation of all aspects of the war in Vietnam, political, military, diplomatic and economic, including its impact domestically then and later.		
392	INTERNSHIP IN HISTORY	<i>1-3 credits</i>
Prerequisites: 64 credits, History major or minor, prior completion of 16 credits in History (not including Humanities in the Western Tradition or World Civilizations), minimum 2.5 history GPA, and permission of instructor. Individual field experience in applied history. May be repeated up to 6 credits; 4 credits to apply to the 32 credit minimum for a history major.		
395	MODERN IRAN	<i>3 credits</i>
Prerequisite: A minimum of 32 credits or permission of the instructor. This course on modern Iran explores the country's history of nationalism, identity, gender, and religion, and its place in world history.		
396	IRAQ IN HISTORICAL PERSPECTIVE	<i>3 credits</i>
Prerequisite: a minimum of 32 credits or permission of the instructor. This course will offer a complex and nuanced look into the history of Iraq and will situate current events firmly in their historical context.		
397	INDIVIDUAL STUDY IN HISTORY	<i>1-3 credits</i>
(May be repeated for a total of four credits) Prerequisite: permission. For individual study or research in history, including special projects, summer study tours or specialized training.		
400	GENDER AND CULTURE IN CHINA	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. This course examines the dynamic between gender and culture from late imperial to post-socialist China, with connections drawn to public policies in different periods.		
401	JAPAN & PACIFIC WAR, 1895-1945	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. The rise of Japanese militarism, Japan's drive to create an empire in East and Southeast Asia, 1895-1945, and its role in the Pacific War, 1937-45.		
404	STUDIES IN ROMAN HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Concentrated investigation of selected topics, such as imperialism in middle and late Republic, the age of Augustus, or the fall of western Empire.		
409	IMPERIAL SPAIN, 1469-1700	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. This course examines the rise and fall of Spain as the first world power. It will cover Spanish political, cultural, and social history, 1469-1700.		
410	HISTORY AND FILM	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Repeatable once with permission. Examines films as historical experiences, historical events, and artifacts of history. Themes and foci will vary.		
416	MODERN INDIA	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. History of the Indian subcontinent from c. 1500 with emphasis on India society and culture, British imperialism, and the emergence of Indian nationalism.		
417	LATIN AMERICA AND THE US	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Inter-American relations viewed from Latin American and U.S. perspectives; U.S. policy, imperialism, economic and cultural influences.		
418	HISTORY OF BRAZIL SINCE 1500	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Survey of the economic, political, social and cultural history of Brazil since 1500.		
424	THE RENAISSANCE	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. 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.		
425	THE REFORMATION	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Europe in 16th century; its religious, cultural, political and diplomatic development, with special emphasis on Protestant, Anglican and Catholic reformations.		
429	EUR: FRENCH REV ERA-1789-1815	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Development of Revolution; Napoleon's regime and satellites.		
438	NAZI GERMANY	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. This course covers the social, economic, and political history of Germany from World War I to 1945 with emphasis on the Third Reich.		
440	TUDOR & STUART BRIT, 1485-1714	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. 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.		
443	CHURCHILLS ENGLAND	<i>3 credits</i>

Prerequisite: a minimum of 48 credits or permission of the instructor. An examination of the changes that Britain experienced during the life of Winston Churchill, 1874-1965. Emphasis is on cultural, social, and political developments.

451	COLONIAL AMERICAN HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. 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.		
452	AMER REV ERA: PL MIL & CON ASP	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. The struggle for the rights of Englishmen and independence; the impact of war on American society and the creation of republican institutions.		
453	THE EARLY AMERICAN REPUBLIC	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. The evolution of the American republic from its early beginnings after the American Revolution to the antebellum era. Emphasis upon political, social, and cultural developments.		
454	CIVIL WAR & RECONST, 1850-1877	<i>4 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Sectionalism, slavery and the causes of the Civil War; wartime activities of the Union and Confederacy; leading personalities; problems of reconstruction and the new Union.		
455	ORIGINS MOD AMERICA, 1877-1917	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. United States from Reconstruction Era to World War I (1877-1920); emphasis on political responses to rise of an industrialized-urbanized society, the populist and progressive movements.		
456	AMER WWARS & DEPRESS 1917-1945	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. World War I and Versailles; the 1920s, the Great Depression and the New Deal; World War II.		
457	THE UNITED STATES SINCE 1945	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Nuclear age, cold war, foreign policy and domestic affairs to present. Social, political, constitutional, diplomatic, cultural and economic changes since 1945.		
461	THE U.S. AS A WORLD POWER	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. The course analyzes the emergence and functioning of the United States as a world power, with particular emphasis on the 20th century.		
463	U.S. CONST HISTORY SINCE 1870	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. This course examines the evolution of constitutional government from the drafting of the U.S. Constitution (1787) to present.		
465	AMERICAN ECONOMY SINCE 1900	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. 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.		
467	HIST OF AMERICAN POP CULTURE	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Historical analysis of mass cultural phenomena and the social experiences associated with mass technologies that transformed modern America life in the 19th and 20th centuries.		
468	AFRICAN-AMER SOC & INT HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Examination of black thought and activities reflective of African-American culture, conditions facing black people within America and efforts toward coordinated black activity.		
469	AFRICAN-AMER WOMEN'S HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Study of black American women's lives from colonial times to the present featuring autobiographical, fictional and secondary works authored by black women.		
470	OHIO HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Political, social, economic and intellectual history of Ohio, with special emphasis on Ohio's relationship to Old Northwest and to the nation.		
471	AMERICAN ENVIRONMENTAL HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. 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.		
475	MEXICO	<i>3 credits</i>
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.		
476	CENTRAL AMERICA & CARIBBEAN	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Selected aspects of the histories of Central American and Caribbean countries with emphasis on populist and peasant movements, political reform, social revolution, economic and under development, and relations with the United States.		
484	MUSEUMS AND ARCHIVES	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. This course will focus on the work of history museums, historical societies and historic house museums and archives.		

485	HISTORY, COMMUNITIES & MEMORY	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Course examines the interactions between the work of academic historians and the public in areas such as local history, monuments, oral history, film and the Internet.		
487	SCIENCE & TECH IN WORLD HIST	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. This course examines the development and diffusion of science and technology in human history, its impact on society, culture, and daily life.		
489	OTTOMAN STATE AND SOCIETY	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Explores political, economic, and social dynamics of one of the world's most enduring and expansive multiethnic empires.		
491	HONORS SEMINAR IN HISTORY	<i>3 credits</i>
Prerequisite: permission of department head or instructor. Selected readings; writing of research paper. For student seeking to graduate with honors in history and for student in Honors Program.		
492	HONORS PROJECT IN HISTORY	<i>1-3 credits</i>
Prerequisite: 64 credits. An individual research project relevant to history, supervised by a member of the Department of History, culminating in an undergraduate thesis.		
493	SP ST: NORTH AMERICAN HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Special studies in the history of North America (Rio Grande to Arctic). See department office for information on particular offerings.		
494	W: HISTORY	<i>1-3 credits</i>
(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.		
495	SP ST: EUROPEAN HISTORY	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Special studies in European history from the fall of the Roman Empire to the present. See department office for information on particular offerings.		
496	SP ST IN HISTORY:OTHER	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. Special studies in the history of Latin America, Asia, Africa or the Pacific. See department office for information on particular offerings.		
498	RACE, NATION & CLASS - M EAST	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. This course analyzes identity politics and the development of the ideas of race, nation, and class in the Middle East from a historical perspective.		
499	WOMEN & GENDER IN MID EAST SOC	<i>3 credits</i>
Prerequisite: a minimum of 48 credits or permission of the instructor. This course explores the multi-layered processes and dimensions, including texts, cultural values and practices, institutions, and events, which have shaped women's experiences in the Middle East.		
500	GENDER AND CULTURE IN CHINA	<i>3 credits</i>
Prerequisite: 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 periods.		
501	JAPAN & PACIFIC WAR, 1895-1945	<i>3 credits</i>
The rise of Japanese militarism, Japan's drive to create an empire in East and Southeast Asia, 1895-1945, and its role in the Pacific War, 1937-1945.		
504	STUDIES IN ROMAN HISTORY	<i>3 credits</i>
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	<i>3 credits</i>
Prerequisite: For M.A. and Ph.D. students only. This course examines the rise and fall of Spain as the first world power. It covers Spanish political, cultural, and social history, 1469-1700.		
510	HISTORY AND FILM	<i>3 credits</i>
Examines films as historical experiences, historical events, and artifacts of history. Themes and foci will vary. Repeatable once with permission.		
516	MODERN INDIA	<i>3 credits</i>
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 US	<i>3 credits</i>
Prerequisite: graduate standing. Inter-American relations viewed from Latin American and US perspectives; US policy, imperialism; economic and cultural influences. Historiography of US-Latin American relations examined.		
518	HISTORY OF BRAZIL SINCE 1500	<i>3 credits</i>
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	<i>3 credits</i>
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	<i>3 credits</i>

Europe in 16th Century; its religious, cultural, political and diplomatic development, with special emphasis on Protestant, Anglican and Catholic reformations.

529	EUR: FRENCH REV ERA-1789-1815	<i>3 credits</i>
Development of Revolution; Napoleon's regime and satellites.		
538	NAZI GERMANY	<i>3 credits</i>
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 & STUART BRIT, 1485-1714	<i>3 credits</i>
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	CHURCHILLS ENGLAND	<i>3 credits</i>
An examination of the changes that Britain experienced during the life of Winston Churchill, 1874-1965. Emphasis is on cultural, social, and political developments.		
551	COLONIAL AMERICAN HISTORY	<i>3 credits</i>
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.		
552	AMER REV ERA: POL, MIL & CONST	<i>3 credits</i>
The struggle for the rights of Englishmen and independence; the impact of war on American society and the creation of republican institutions.		
553	THE EARLY AMERICAN REPUBLIC	<i>3 credits</i>
Prerequisite: Graduate student status. The evolution of the American republic from its early beginnings after the American Revolution to the antebellum era. Emphasis upon political, social, and cultural developments.		
554	CIVIL WAR & RECONST: 1850-1877	<i>4 credits</i>
Sectionalism, slavery and the causes of the Civil War; wartime activities of the Union and Confederacy; leading personalities; problems of reconstruction and the new Union.		
555	ORIG: MODERN AMERICA 1877-1917	<i>3 credits</i>
United States from Reconstruction Era to World War I (1877-1920); emphasis on political responses to rise of an industrialized-urbanized society, the populist and progressive movements.		
556	AMER WWARS & DEPRESS 1917-1945	<i>3 credits</i>
World War I and Versailles; the 1920s, the Great Depression and the New Deal; World War II.		
557	THE UNITED STATES SINCE 1945	<i>3 credits</i>
Nuclear age, cold war, foreign policy and domestic affairs to present. Social, political, constitutional, diplomatic, cultural and economic changes since 1945.		
561	THE U.S. AS A WORLD POWER	<i>3 credits</i>
This course analyzes the emergence and functioning of the United States as a world power, with particular emphasis on the twentieth century.		
563	U.S. CONST HISTORY SINCE 1870	<i>3 credits</i>
This course will examine the evolution of constitutional government as well as civil liberties and individual rights from the Civil War to the present.		
565	AMERICAN ECONOMY SINCE 1900	<i>3 credits</i>
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.		
567	HIST OF AMERICAN POP CULTURE	<i>3 credits</i>
Historical analysis of mass cultural phenomena and the social experiences associated with mass technologies that transformed modern American life in the nineteenth and twentieth centuries.		
568	AFRICAN-AMER SOC & INT HISTORY	<i>3 credits</i>
Examination of black thought and activities reflective of African-American culture, conditions facing black people within America and efforts toward coordinated black activity.		
569	AFRICAN-AMER WOMEN'S HISTORY	<i>3 credits</i>
Study of black American women's lives from colonial times to the present featuring autobiographical, fictional and secondary works authored by black women.		
570	OHIO HISTORY	<i>3 credits</i>
Political, social, economic and intellectual history of Ohio, with special emphasis on Ohio's relationship to Old Northwest and to the nation.		
571	AMERICAN ENVIRONMENTAL HISTORY	<i>3 credits</i>
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.		
575	MEXICO	<i>3 credits</i>
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.		
576	CENTRAL AMERICA & CARIBBEAN	<i>3 credits</i>
Selected aspects of the histories of Central American and Caribbean countries with emphasis on populist and peasant movements, political reform, social revolution, economic and underdevelopment, and relations with the United States.		

582	WAR & WESTERN CIVILIZATION	<i>3 credits</i>
War and society in Europe, America and beyond from ancient world to present with special emphasis on period since 1740.		
584	MUSEUMS AND ARCHIVES	<i>3 credits</i>
This course will focus on the work of history museums, historical societies and historic house museums, and archives.		
585	HISTORY, COMMUNITIES & MEMORY	<i>3 credits</i>
Course examines the interactions between the work of academic historians and the public in areas such as local history, monuments, oral history, film, and the internet.		
587	SCIENCE & TECH IN WORLD HIST	<i>3 credits</i>
This course examines the development and diffusion of science and technology in human history, its impact on society, culture, and daily life.		
589	OTTOMAN STATE AND SOCIETY	<i>3 credits</i>
Explores political, economic, and social dynamics of one of the world's most enduring and expansive multiethnic empires.		
593	SP ST: NORTH AMERICAN HISTORY	<i>3 credits</i>
Prerequisite: Graduate student status. Special studies in the history of North America (Rio Grande to the Arctic). See department office for information on particular offerings.		
594	W: HISTORY	<i>1-3 credits</i>
(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.		
595	SP ST: EUROPEAN HISTORY	<i>3 credits</i>
Prerequisite: 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.		
596	SP ST IN HISTORY:OTHER	<i>3 credits</i>
Prerequisite: Graduate status Special studies in the history of Latin America, Asia, Africa, or the Pacific. See department office for information on particular offerings.		
598	RACE, NATION & CLASS - M EAST	<i>3 credits</i>
This course analyzes identity politics and the development of the ideas of race, nation, and class in the Middle East from a historical perspective.		
599	WOMEN & GENDER IN MID EAST SOC	<i>3 credits</i>
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.		
601	GRAD RES SEM: HISTORY	<i>4 credits</i>
Prerequisite: Eight 3400 graduate credits or permission of the instructor. Research seminar designed to train students in the skills of researching and writing history, with a particular emphasis on article-length pieces.		
602	MA OPTION PAPER COMPLETION	<i>1 credits</i>
Prerequisite: 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.		
610	GRD RDG SEM-COMP STD WORLD CIV	<i>4 credits</i>
Comparative historiography on world civilizations: East Asia, South Asia, the Middle East, Africa, and the Americas. Emphasis on key themes: kingship, empire, colonization, nationalism, resistance, post-colonialism.		
612	READING SEM: THE MIDDLE EAST	<i>4 credits</i>
Study of historical literature, sources of materials, and major interpretations of Middle Eastern history.		
622	RDG SEM: ANCIENT HISTORY	<i>4 credits</i>
Study of historical literature, sources of materials and major interpretations of ancient history, especially Greek and Roman periods.		
625	READING SEM IN MEDIEVAL HISTRY	<i>4 credits</i>
Study of historical literature, sources of materials and major interpretations of medieval European history.		
631	RDG SEM: MOD EUR HIST TO 1815	<i>4 credits</i>
Study of historical literature, sources of materials, major interpretations of early modern Europe history to Napoleonic era.		
634	RDG SEM: MOD EUR HIST SIN 1815	<i>4 credits</i>
Study of historical literature, sources of materials and major interpretations of modern European history since early 19th Century.		
651	RDG SEM: MODERN BRITISH EMPLRE	<i>4 credits</i>
Prerequisite: 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.		
666	RDG SEM: AMERICAN HIST TO 1877	<i>4 credits</i>
Study of historical literature, sources of materials and major interpretations of American colonial and United States history to Civil War.		
669	RDG SEM: AMER HIST SINCE 1877	<i>4 credits</i>
Study of historical literature, sources of materials and major interpretations of United States history since Civil War.		

677	RDG SEM: LATIN AMER HISTORY	<i>4 credits</i>
Study of historical literature, primary texts and major interpretations and debates on selected topics in Latin American history.		
680	RDG SEM: CHINA	<i>4 credits</i>
Study of Chinese texts, secondary literature, and major interpretations of the history of China.		
689	HISTORIOGRAPHY	<i>3 credits</i>
Study of historians, historical writings and interpretations through the ages. Required for master's degree if candidate has not had equivalent undergraduate or graduate course elsewhere.		
690	HISTORY TEACHING PRACTICUM	<i>3 credits</i>
Prerequisite: 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.		
694	THESIS RESEARCH	<i>1-6 credits</i>
Research for Master of Arts degree thesis.		
697	INDIV READING: M.A. STUDENTS	<i>1-4 credits</i>
(May be repeated for a total of 12 credits) Directed reading to fit individual student programs. May be repeated, but no more than six credits may count toward the M.A. degree in history. Written permission of the instructor required.		
698	INDIV READING: M.A. STUDENTS	<i>1-4 credits</i>
(May be repeated for a total of 12 credits) Directed reading to fit individual student programs. May be repeated, but no more than six credits may count toward the M.A. degree in history. Written permission of the instructor required.		
699	MASTERS THESIS	<i>1-6 credits</i>
Prerequisite: 694. Writing of Master of Arts degree thesis.		
797	INDIV READING: PHD STUDENT	<i>1-6 credits</i>
(May be repeated, but no more than 12 credits may apply toward the Ph.D. in history) Directed reading to fit individual student programs. Written permission of the instructor required.		
798	INDIV READING: PHD STUDENT	<i>1-6 credits</i>
(May be repeated, but no more than 12 credits may apply toward the Ph.D. in history) Directed reading to fit individual student programs. Written permission of the instructor required.		
898	DISSERTATION RESEARCH	<i>1-15 credits</i>
Research for Doctor of Philosophy degree dissertation.		
899	DOCTORAL DISSERTATION	<i>1-15 credits</i>
Prerequisite: 898. Writing of Doctor of Philosophy degree dissertation.		



Mathematics (3450)

100	INTERMEDIATE ALGEBRA	<i>3 credits</i>
Prerequisite: Completion of 2010:052 or 057 with a grade of C or better or placement test. Review of high school algebra: real numbers, exponents, radicals, factoring, linear and quadratic equations, graphing, and problem solving. Does not meet General Studies mathematics requirement.		
135	EXCURSIONS IN MATHEMATICS	<i>3 credits</i>
Prerequisites: Completion of 2010:052 with a grade of C- or better or placement test. Contemporary applications of mathematics for the non-science major to develop skills in logical thinking and reading technical material. Topics include voting, apportionment, scheduling, patterns, networks.		
140	FUND OF MATH FOR PRIMARY EDUC	<i>3 credits</i>
Prerequisites: Either completion of 3450:100 with a C- or better, or completion of 3470:250 with a grade of C- or better, or placement test. Corequisite: 5100:200. A problem-solving and inquiry-based approach to number systems; bases; operations, properties, relationships, algorithms of Real Numbers; patterns and algebra.		
145	COLLEGE ALGEBRA	<i>4 credits</i>
Prerequisite: Mathematics Placement Test or completion of 100 with a grade of C- or better. Real numbers, equations and inequalities, linear and quadratic functions. Exponential and logarithmic functions. Systems of equations, matrices, determinants. Permutations and combinations.		
149	PRECALCULUS MATHEMATICS	<i>4 credits</i>
Prerequisite: Completion of 145 with a grade of C- or better or placement. Functions, polynomial functions, complex numbers, exponential and logarithmic functions, systems of equations, trigonometric functions, mathematical inductions, sequences, and binomial theorem.		
208	INTRO TO DISCRETE MATH	<i>4 credits</i>
Prerequisites: Completion of 145 or 149 with a grade of C- or better or placement. A foundation course in discrete mathematics with applications. Topics include sets, number systems, Boolean Algebra, logic, relations, functions, recursion, matrices, induction, graphs, and trees.		
209	DISCRETE MATH FOR EDUCATORS	<i>4 credits</i>
Prerequisite: Completion of 140 with a grade of C- or better. Corequisite: 231. Introduction to discrete mathematics topics for middle school instruction: sets, counting, probability, recurrence relations, graph theory, logic and elementary proof techniques.		
210	CALCULUS WITH BUSINESS APPLIC	<i>3 credits</i>
Prerequisites: Mathematics Placement Test or completion of 145 with a grade of C- or better. Review of functions, derivatives of functions, extrema and concavity, optimization, logarithmic and exponential functions, extrema for multivariate functions. Graphing calculator required. For business majors only.		
215	CONCEPTS OF CALCULUS	<i>4 credits</i>
Prerequisite: Completion of 145 or 149 with a grade of C- or better or placement. Functions; limits and continuity; differentiation and applications of differentiation; logarithmic and exponential functions; integration and applications of integration; partial differentiation.		
221	ANALYTIC GEOMETRY-CALCULUS I	<i>4 credits</i>
Prerequisite: Completion of 149 with a grade of C- or better. Analytic geometry, limits, continuity, derivatives, tangent and normal lines, extrema of functions, Rolle's theorem, mean value theorem, related rates, antiderivative, definite integrals, areas, volumes, arc length.		
222	ANALYTIC GEOMETRY-CALCULUS II	<i>4 credits</i>
Prerequisite: Completion of 221 with a grade of C- or better. Derivatives of exponential, logarithmic trigonometric, inverse trigonometric, hyperbolic and inverse hyperbolic functions; methods of integration, sequences, series; moments, centroids, indeterminate forms, polar coordinates.		
223	ANALYTIC GEOMETRY-CALC III	<i>4 credits</i>
Prerequisite: Completion of 222 with a grade of C- or better. Vector algebra, cylindrical, spherical coordinates, vector-valued functions, curvature; functions of several variables, limit, continuity, partial derivatives, differentials, directional derivatives, maxima and minima, multiple integrals, Divergence Theorem.		
231	MODEL WTH ALGEB & TRANSCEND FN	<i>4 credits</i>
Prerequisites: Completion of 140 with a grade of C- or better; and 100 with a grade of C- or better or placement test. Modeling and regression with algebraic, exponential, logarithmic, and trigonometric functions; systems of equations and matrices. These topics will be enhanced by the use of CAS.		
240	MATH FOUND FOR EARLY CHLD EDUC	<i>3 credits</i>
Prerequisite: Completion of 140 with a grade of C- or better. A problem-solving and inquiry-based approach to functions and algebra, coordinate and Euclidean geometry, and elementary data analysis.		
289	SEL T: MATHEMATICS	<i>1-3 credits</i>

Prerequisite: permission. Selected topics of interest in mathematics.

307	FUND: ADVANCED MATHEMATICS	<i>3 credits</i>
Prerequisite: Completion of 222 with a grade of C- or better. Logic, solving problems, and doing proofs in mathematics. Sets, extended set operations, and indexed family sets, induction. Binary relations. Functions, cardinality. Introductory concepts of algebra and analysis.		
312	LINEAR ALGEBRA	<i>3 credits</i>
Prerequisite: Completion of 223 with a grade of C- or better or permission of instructor. Study of vector spaces, linear transformations, matrices, determinants, inner products, the eigenvalue problem, quadratic forms and canonical forms.		
331	MODELING WITH CALCULUS	<i>4 credits</i>
Prerequisite: Completion of 231 with a grade of C- or better. Introduction to limits, continuity, differentiation with applications, integration with applications, sequences and series. These topics will be enhanced by the use of CAS.		
335	INTRO TO ORDINARY DIFF EQUATNS	<i>3 credits</i>
Prerequisite: Completion of 223 with a grade of C- or better or permission of instructor. Basic techniques for solving ODEs and systems of ODEs. Analysis of models involving differential equations of first order and simple equations of second order.		
341	GEOMETRY AND MEASUREMENT	<i>3 credits</i>
Prerequisites: Completion of 209 with a grade of C- or better, or 307 with a grade of C- or better and be admitted to the College of Education. Basic Constructions, Polygons, Similarity, Pythagorean Theorem, Circles, Congruence, Perimeters and Areas of Plane Figures, Surface and Volume of Solids, Rigid Motions and Symmetry, Coordinate geometry.		
401	HISTORY OF MATHEMATICS	<i>3 credits</i>
Prerequisite : Completion of 307 with a grade of C- or better. Origin and development of mathematical ideas.		
410	ADVANCED LINEAR ALGEBRA	<i>3 credits</i>
Prerequisite: Completion of 312 with a grade of C- or better. Study of vector spaces, linear transformation, canonical and quadratic forms, inner product spaces.		
411	ABSTRACT ALGEBRA I	<i>3 credits</i>
Prerequisite: Completion of 307 with a grade of C- or better or permission of instructor. Study of groups, rings, fields, integral domains.		
412	ABSTRACT ALGEBRA II	<i>3 credits</i>
Prerequisite: Completion of 411 with a grade of C- or better or permission of instructor. Study of groups, rings, fields, integral domains, vector spaces, field extensions, Galois theory.		
413	THEORY OF NUMBERS	<i>3 credits</i>
Prerequisite: Completion of 222 with a grade of C- or better or permission. Euclidean algorithm, unique factorization theorem, congruences, primitive roots, indices, quadratic residues, number-theoretic functions, Gaussian integers and continued fractions.		
415	COMBINATORICS & GRAPH THEORY	<i>3 credits</i>
Prerequisite: Completion of 222 with a grade of C- or better or permission. Introduction to basic ideas and techniques of mathematical counting; properties of structure of systems.		
420	MATH TECH AND COMMUNICATION	<i>3 credits</i>
Prerequisites: Completion of 222 and 312 with grades of C- or better, or 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.		
421	ADVANCED CALCULUS I	<i>3 credits</i>
Sequential. Prerequisite: Completion of 223 with a grade of C- or better; 307 is highly recommended. Real number system, sequences, series, set theory, continuity, differentiation, integration, partial derivatives, multiple integration, maxima and minima, convergence and uniform convergence, power series, improper integrals, transformations, line and surface integrals.		
422	ADVANCED CALCULUS II	<i>3 credits</i>
Sequential. Prerequisite: Completion of 223 with a grade of C- or better; 307 is highly recommended. Real number system, sequences, series, set theory, continuity, differentiation, integration, partial derivatives, multiple integration, maxima and minima, convergence and uniform convergence, power series, improper integrals, transformations, line and surface integrals.		
425	COMPLEX VARIABLES	<i>3 credits</i>
Prerequisite: Completion of 223 with a grade of C- or better. Complex variables; elementary functions, differentiation and analytic functions; integration and Cauchy's theorem; power series and Laurent series; residue theorem; applications such as conformal mappings, inversion of integral transform.		
427	APPLIED NUMERICAL METHODS I	<i>3 credits</i>
Prerequisites: Completion of 222 and 3460:209 with grades of C- or better or permission. Numerical methods in polynomial interpolation, rootfinding, numerical integration, and numerical linear algebra.		
428	APPLIED NUMERICAL METHODS II	<i>3 credits</i>
Prerequisites: Completion of 335 and 427 with grades of C- or better or permission. Numerical methods in the solution of ordinary and partial differential equations. Numerical differentiation, Runge-Kutta methods, and iterative methods for ODEs, finite differences for PDEs.		
430	NUM SOLUT FOR PARTL DIFF EQUA	<i>3 credits</i>

Prerequisite: Completion of 428 with a grade of C- or better or equivalent. For advanced undergraduate and graduate students. The study of finite difference and finite element methods for partial differential equations consistency, stability, convergence and computer implementation.

432	PARTIAL DIFFERENTIAL EQUATIONS	<i>4 credits</i>
Prerequisite: Completion of 335 with a grade of C- or better. The classical initial value and boundary value problems of mathematical physics developed and solved using Fourier series and integral transforms.		
435	SYSTEMS OF ORD DIFF EQUATIONS	<i>3 credits</i>
Prerequisites: Completion of 335 and either 312 or 428 with grades of C- or better or permission. Analysis, solution of systems of equations, linear, nonlinear. Topics: stability theory, perturbation methods, asymptotic methods, applications from physical, social sciences.		
436	MATHEMATICAL MODELS	<i>3 credits</i>
Prerequisite: Completion of 335 with a grade of C- or better, and a six-hour sequence in an approved applied area, or 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.		
438	ADVANCED ENGINEERING MATH I	<i>3 credits</i>
Prerequisites: Completion of 335 and 312 with grades of C- or better or permission. Matrices, eigenvalue problems, systems of ODEs, vector analysis, complex variables.		
439	ADVANCED ENGINEERING MATH II	<i>3 credits</i>
Prerequisites: Completion of 335 and 312 with grades of C- or better or permission. Special functions, Fourier series and transforms, PDEs.		
441	CONCEPTS IN GEOMETRY	<i>4 credits</i>
Prerequisite: 307 with a grade of C- or better or permission of instructor. Axiomatic treatment of both Euclidean and non-Euclidean geometries. Other concepts included are finite geometry, transformations, constructions and inversions.		
445	INTRODUCTION TO TOPOLOGY	<i>3 credits</i>
Prerequisite: Completion of 307 with a grade of C- or better or permission of instructor. Introduction to topological spaces and topologies, mappings, cardinality, homeomorphisms, connected spaces, metric spaces.		
489	T: MATHEMATICS	<i>1-4 credits</i>
(May be repeated for a total of 12 credits) Prerequisite : permission of instructor. Selected topics in mathematics and applied mathematics at an advanced level.		
491	W: MATHEMATICS	<i>1-4 credits</i>
(May be repeated) Group studies of special topics in mathematics and applied mathematics. May not be used to meet undergraduate or graduate major requirements. May be used for elective credit.		
497	INDIV READING: MATH	<i>1-2 credits</i>
Prerequisites: senior standing and permission. Mathematics or applied mathematics majors only. Directed studies designed as an introduction to research problems, under guidance of selected faculty member.		
498	SENIOR HONORS PROJECT: MATH	<i>1-3 credits</i>
Prerequisite: Permission of Instructor. Directed study for senior student in the Honors Program. An introduction to research problems in mathematics and applied mathematics under the guidance of selected faculty. May be repeated for up to six credits.		
501	HISTORY OF MATHEMATICS	<i>3 credits</i>
Prerequisite: departmental permission. Origin and development of mathematical ideas. Course does not meet degree requirements in the department.		
510	ADVANCED LINEAR ALGEBRA	<i>3 credits</i>
Prerequisite: departmental permission. Study of vector spaces, linear transformation, canonical and quadratic forms, inner product spaces.		
511	ABSTRACT ALGEBRA I	<i>3 credits</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.		
512	ABSTRACT ALGEBRA II	<i>3 credits</i>
Prerequisite: 511 or departmental permission. Study of groups, rings, fields, integral domains, vector spaces, field extensions, Galois theory.		
513	THEORY OF NUMBERS	<i>3 credits</i>
Prerequisite: departmental permission. Euclidean algorithm, unique factorization theorem, congruences, primitive roots, indices, quadratic residues, number-theoretic functions, Gaussian integers and continued fractions.		
515	COMBINATORICS & GRAPH THEORY	<i>3 credits</i>
Prerequisite: departmental permission. Introduction to basic ideas and techniques of mathematical counting; properties of structure of systems.		
520	MATH TECH AND COMMUNICATION	<i>3 credits</i>
Prerequisites: 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.		
521	ADVANCED CALCULUS I	<i>3 credits</i>

Sequential. Prerequisite: Departmental permission. Real number system, sequences, series, set theory, continuity, differentiation, integration, partial derivatives, multiple integration, maxima and minima, convergences and uniform convergences, power series, improper integrals, transformations, line and surface integrals. May not be used to meet master's degree requirements for mathematics or applied mathematics.

522	ADVANCED CALCULUS II	<i>3 credits</i>
Sequential. Prerequisite: departmental permission. Real number system, sequences, series, set theory, continuity, differentiation, integration, partial derivatives, multiple integration, maxima and minima, convergence and uniform convergence, power series, improper integrals, transformations, line and surface integrals.		
525	COMPLEX VARIABLES	<i>3 credits</i>
Prerequisite: departmental permission. Complex variables; elementary functions, differentiation and analytic functions; integration and Cauchy's theorem; power series and Laurent series; residue theorem; applications such as conformal mappings, inversion of integral transform.		
527	APPLIED NUMERICAL METHODS I	<i>3 credits</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.		
528	APPLIED NUMERICAL METHODS II	<i>3 credits</i>
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 differences for PDEs.		
532	PARTIAL DIFFERENTIAL EQUATIONS	<i>4 credits</i>
Prerequisite: departmental permission. The classical initial value and boundary value problems of mathematical physics developed and solved using Fourier series and integral transforms.		
535	SYSTEMS OF ORD DIFF EQUATIONS	<i>3 credits</i>
Prerequisites: departmental permission. Analysis, solution of systems of equations, linear, nonlinear. Topics: stability theory, perturbation methods, asymptotic methods, applications from physical, social sciences.		
536	MATHEMATICAL MODELS	<i>3 credits</i>
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.		
538	ADVANCED ENGINEERING MATH I	<i>3 credits</i>
Prerequisite: Departmental permission. Matrices, eigenvalue problems, systems of ODEs, vector analysis, complex variables. May not be used to meet master's requirements for applied mathematics.		
539	ADVANCED ENGINEERING MATH II	<i>3 credits</i>
Prerequisite: departmental permission. Special functions, fourier series and transforms, PDEs.		
541	CONCEPTS IN GEOMETRY	<i>4 credits</i>
Prerequisite: departmental permission. Axiomatic treatment of both Euclidean and non-Euclidean geometries. Other concepts included are finite geometry, transformations, constructions and inversions.		
545	INTRODUCTION TO TOPOLOGY	<i>3 credits</i>
Prerequisite: departmental permission. Introduction to topological spaces and topologies, mapping, cardinality, homeomorphisms, connected spaces, metric spaces.		
589	T: MATHEMATICS	<i>1-4 credits</i>
(May be repeated for a total of 12 credits) Prerequisite : permission of instructor. Selected topics in mathematics and applied mathematics at an advanced level.		
591	W: MATHEMATICS	<i>1-4 credits</i>
(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. May be used for elective credit only.		
611	T: ALGEBRA	<i>3 credits</i>
Prerequisite: 512 or departmental permission. Advanced study of selected topics in some of the following areas: semigroups, groups, rings, modules and fields.		
621	REAL ANALYSIS	<i>3 credits</i>
Prerequisite: 522 or departmental permission. In-depth study of real analysis - metric spaces, normed vector spaces, integration theory, Hilbert spaces.		
625	ANALYTIC FUNCTION THEORY	<i>3 credits</i>
Prerequisite: 522 or departmental permission. Complex number system, holomorphic functions, continuity, differentiability, power series complex integration, residue theory, singularities, analytic continuation, asymptotic expansion.		
627	ADVANCED NUMERICAL ANALYSIS I	<i>3 credits</i>
Prerequisites: 522 (grade C- or better) and knowledge of C++, FORTRAN, or MATLAB or departmental permission. Error propagation; theoretical analysis of numerical methods in interpolation, integration and ordinary differential equations.		
628	ADVANCED NUMERICAL ANALYSIS II	<i>3 credits</i>
Prerequisites: 522 (grade C- or better) and knowledge of C++, FORTRAN, or MATLAB or departmental permission. Theoretical analysis of numerical methods in linear algebra.		
631	CALCULUS OF VARIATIONS	<i>3 credits</i>

Prerequisite: departmental permission. Problems with fixed and movable endpoints, problems with constraints, generalization to several variables, the maximality principle, linear time-optimal problems, the connective between classical theory and the maximality principle.

632	ADVANCED PARTIAL DIFF EQUA	<i>3 credits</i>
Prerequisite: 532 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.		
633	METHODS OF APPLIED MATH I	<i>3 credits</i>
Prerequisite: 539 or 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.		
634	METHODS OF APPLIED MATH II	<i>3 credits</i>
Prerequisite: 539 or 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.		
635	OPTIMIZATION	<i>3 credits</i>
Prerequisite: 522 or departmental permission. Unconstrained and constrained optimization theory and methods in applied problems.		
636	ADV COMBINATORICS & GRAPH THRY	<i>3 credits</i>
Prerequisite: departmental permission. Theory and techniques of combinatorics as applied to network problems and graph theoretic problems.		
638	THEORY & APPL OF WAVELETS	<i>3 credits</i>
Prerequisite: permission of instructor. Theory of wavelets and applications to signal and image analysis. Topics include time-frequency representations, filter bands, discrete and continuous wavelet transforms, wavelet packets, and applications.		
689	ADV T: MATHEMATICS	<i>1-3 credits</i>
(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.		
692	SEM: MATHEMATICS	<i>3 credits</i>
Prerequisite: permission of advisor. Seminar-type discussion on topics in mathematics leading to supervised research project.		
695	PRACTICUM IN MATHEMATICS	<i>1-3 credits</i>
(May be repeated) Prerequisite: graduate teaching assistant or permission. Training and experience in college teaching of mathematics. May not be used to meet degree requirements. Credit/noncredit.		
697	INDIV READING: MATH	<i>1-3 credits</i>
(May be repeated for a total of four credits) Prerequisites: graduate standing and permission. Directed studies in mathematics at graduate level under guidance of selected faculty member.		
698	MASTERS RESEARCH	<i>1-6 credits</i>
(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.		
699	MASTERS THESIS	<i>3 credits</i>
Prerequisite: permission. A properly qualified candidate for the master's degree may obtain three credits for research that culminates in a public oral presentation of the faculty-supervised thesis.		
721	FUNCTIONAL ANALYSIS I	<i>3 credits</i>
Prerequisites: 510 and 621 or departmental permission. These courses are sequential. 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.		
722	FUNCTIONAL ANALYSIS II	<i>3 credits</i>
Prerequisites: 510 and 621 or departmental permission. These courses are sequential. 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.		
728	MATRIX ITERATIVE ANALYSIS	<i>3 credits</i>
Prerequisite: departmental permission. Basic Iterative methods, Matrix Properties and Concepts, Linear and Nonlinear equation solver, Semi-iterative and conjugate-gradient methods.		
730	ADVANCED NUM SOL PART DIFF EQU	<i>3 credits</i>
Prerequisites: 522 and 528, or 628, or departmental permission. Derivation, analysis, and implementation of difference and variational-based methods for the solution of partial differential equations and systems of differential equations.		
732	ADVANCED PART DIFF EQUATION II	<i>3 credits</i>
Prerequisites: 522 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.		
733	ASYMP METHODS & NONLIN ANAL I	<i>3 credits</i>
Prerequisites: 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.		

734

ASYM METH & NONLIN ANL II

3 credits

Prerequisites: 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.

735

DYNAMICAL SYSTEMS

3 credits

Prerequisite: 522 or departmental permission. The study of mathematical models of systems which evolve over time. An introduction to maps and applications to ordinary differential equations.



Computer Science (3460)

101	ESSENTIALS OF COMPUTER SCIENCE	<i>3 credits</i>
Explore major topics in Computer Science - computing systems, data representation, hardware, programming topics, and important applications such as networks, robotics, databases, and gaming.		
125	DESCRIPTIVE COMPUTER SCIENCE	<i>2 credits</i>
Computer literacy: terminology; methods, media for data representation, storage; elements of a computing system; data organization.		
126	INTRO TO VISUAL BASIC PROGRAMMING	<i>3 credits</i>
Prerequisite: Completion of 3450:100 with a grade of C- or better or placement. Windows GUI and Microsoft's Visual BASIC programming environment. Design of user interfaces, event-driven programming, basic control structures, simple variables, arrays, and sequential files.		
209	COMPUTER SCIENCE I	<i>4 credits</i>
Prerequisite: Completion of 3450:145 or 3450:149 with a grade of C- or better or equivalent. Introduction to problem-solving methods and algorithms. Programming in a high-level language including how to design, code, debug and document programs with good programming style.		
210	COMPUTER SCIENCE II	<i>4 credits</i>
Prerequisites: 209 and 3450:208 with a grade of C- or better or equivalent. Dynamic memory allocation methods, elementary data structures, internal representations, and associated algorithms. Topics include lists, stacks, queues, trees, and sorting methods.		
289	SEL T: COMPUTER SCIENCE	<i>1-3 credits</i>
Prerequisite: permission. Selected topics of interest in computer science.		
306	ASSEMBLY & SYSTEM PROGRAMMING	<i>4 credits</i>
Prerequisite: Completion of 210 or equivalent with a grade of C- or better. Basic computer organization, digital logic, and data representation. Programming in assembly and C languages on a typical digital computer.		
307	INTERNET SYSTEMS PROGRAMMING	<i>3 credits</i>
Prerequisite: Completion of 210 or equivalent with a grade of C- or better. Overview of current programming languages, tool and scripting technologies for the Internet and World Wide Web.		
316	DATA STRUCTURES	<i>3 credits</i>
Prerequisites: Completion of 210 and (3450:221 or 3450:210) with grades of C- or better. A continuation of topics in 3460:210. Topics include: graphs and graph algorithms, external sorting, hashing, advanced tree and file structures.		
389	INTER TOP: COMPUTER SCIENCE	<i>1-3 credits</i>
Prerequisite: permission of instructor. Selected topics of interest in computer science at an intermediate level.		
395	INTERN: COMPUTER SCIENCE	<i>1-12 credits</i>
Prerequisites: Completion of 209 and 210 with grades of C- or better, and permission of a faculty supervisor. Placement in industry for experience related to computer science. (May be repeated. No more than three credits may be applied towards a computer science major.)		
406	INTRODUCTION TO C & UNIX	<i>3 credits</i>
Prerequisite: programming experience. Syntax of C with flow structures, pointers, and command line concepts. For UNIX, shell scripts, UNIX file structure, system calls and interprocess communication protocols. (Not an approved mathematics and computer science major, minor, or certificate elective.)		
408	WINDOWS PROGRAMMING	<i>3 credits</i>
Prerequisites: Completion of 208 or 210 or 406 with a grade of C- or better or permission. Windows operating systems, integrated development environment, event-driven programming, graphical user interface design, object libraries, component object model, object linking, embedding, client-server objects.		
418	INTRO TO DISCRETE STRUCTURES	<i>3 credits</i>
Prerequisite: Completion of 210 with a grade of C- or better or permission. Introduction to a number of structures in algebra of particular use to student in computer science. Topics include algorithms and flow chart language, graphs and digraphs, trees, lattices codes.		
421	OBJECT-ORIENTED PROGRAMMING	<i>3 credits</i>
Prerequisite: Completion of 210 with a grade of C- or better. Object-oriented design, analysis, and programming using different development models. Comparison with other programming paradigms.		
426	OPERATING SYSTEMS	<i>3 credits</i>
Prerequisites: Completion of 210 and (4450:320 or 3460:306), or equivalents with grades of C- or better. Introduction to aspects of all modern operating systems: types; storage management; process and resource control; interacting process synchronization.		

428	UNIX SYSTEM PROGRAMMING	<i>3 credits</i>
Prerequisite: Completion of 210 with a grade of C- or better and knowledge of C. An overview of the UNIX operating system. Shell programming. Process management, processor management, storage management, scheduling algorithms, resource protection, and system programming.		
430	THEORY OF PROGRAMMING LANGS	<i>3 credits</i>
Prerequisite: Completion of 210 with a grade of C- or better. Advanced concepts underlying programming languages and their applications, formal definitions of programming languages, Backus Normal Form, semantics. Alternative programming paradigms including functional programming.		
435	ALGORITHMS	<i>3 credits</i>
Prerequisite: Completion of 316 with a grade of C- or better. Design and analysis of efficient algorithms for random access machines; derivation of pattern classification algorithms.		
440	COMPILER DESIGN	<i>3 credits</i>
Prerequisites: Completion of 210 and (4450:320 or 3460:306), with a grade of C- or better. Techniques used in constructing compilers, including lexical and syntactic analysis, parsing techniques, object code generation and optimization. Course requires a compiler implementation project.		
445	INTRODUCTION TO BIOINFORMATICS	<i>3 credits</i>
Prerequisite: Completion of 210 with a grade of C- or better or permission. Introduce major themes in bioinformatics. Topics include concepts of molecular genetics, biological databases, database searching, sequence alignments, phylogenetic trees, structure prediction, and microarray data analysis.		
453	COMPUTER SECURITY	<i>3 credits</i>
Prerequisites: Completion of 210 with a grade of C- or better. Principles of computer security -- cryptography, authentications, secure network protocols, intrusion detection and countermeasures.		
455	DATA COMMUN & COMP NETWORKS	<i>3 credits</i>
Prerequisites: Completion of 210 with a grade of C- or better. ISO-OSI, TCP/IP, SNA data switching, protocols, flow and error control, routing, topology, Network trends, network taxonomies, and socket-based programming.		
457	COMPUTER GRAPHICS	<i>3 credits</i>
Prerequisite: Completion of 210 with a grade of C- or better and knowledge of C. Topics in vector and raster graphics, interactive graphics languages, scan conversion, clipping, geometric transformation, projection, shading, animation and virtual reality.		
460	ARTIFICIAL INTEL & HEURIST PRG	<i>3 credits</i>
Prerequisite: Completion of 210 with a grade of C- or better. Study of various programs which have displayed some intelligent behavior. Exploration of level at which computers can display intelligence.		
463	PERVASIVE COMPUTING	<i>3 credits</i>
Prerequisites: Completion of 210 with a grade of C- or better. Computing from a wireless perspective. Topics include protocols, algorithms, security and sensor networks.		
465	COMPUTER ARCHITECTURE	<i>3 credits</i>
Prerequisite: Completion of 210 and (4450:320 or 3460:306), with a grade of C- or better. An introduction to the hardware organization of the computer at the register, processor and systems level. In-depth study of the architecture of a particular computer system family.		
468	MOBILE ROBOTICS	<i>3 credits</i>
Prerequisites: Completion of 210 with a grade of C- or better. Introduction to history, hardware and software components, and design of autonomous mobile robots. Multiple projects involving both physical robots and software emulation.		
475	DATABASE MANAGEMENT	<i>3 credits</i>
Prerequisite: Completion of 210 with a grade of C- or better. Fundamentals of database organization, data manipulations and representation, data integrity, privacy.		
477	INTRO TO PARALLEL PROCESSING	<i>3 credits</i>
Prerequisites: Completion of 210 with a grade of C- or better and knowledge of C. Commercial processors: past and present. Parallel languages, models of parallel computation, parallel algorithm design and performance evaluation. Parallel paradigms with relation to real world applications.		
480	SOFTWARE ENGINEERING	<i>3 credits</i>
Prerequisite: Completion of 210 with a grade of C- or better. Introduction to formal software specification and validation. Introduction of methodologies and tools of design, development and validation, and maintenance.		
489	T: COMPUTER SCIENCE	<i>1-3 credits</i>
Prerequisite: permission of instructor. Selected topics in computer science at an advanced level.		
490	SENIOR SEMINAR IN COMPUTER SCI	<i>3 credits</i>
Prerequisite: Must have completed at least 30 hours of 3460 (computer science) courses. Professional software development, surviving "Mission Impossible" projects, computer ethics, intellectual property rights (patents and copyrights), and other current topics.		
497	INDIV STUDY: COMPUTER SCIENCE	<i>1-3 credits</i>
(May be repeated. Can apply to degree, minor or certificate only with department approval.) Prerequisite: permission. Directed studies designed as introduction to research problems under guidance of designated faculty member.		
498	SR HONORS PROJ IN COMP SCIENCE	<i>1-3 credits</i>
Prerequisites: 497 (honors). Directed study for senior student in the Honors Program who has completed 3460:497. An introduction to research problems in the computer science under the guidance of selected faculty.		

501	FUNDAMENTLS OF DATA STRUCTURES	<i>3 credits</i>
Prerequisite: programming experience in C. Basic data structures and algorithms: stacks, queues, linked lists, trees, hash tables, and graphs; sorting and search algorithms. Introduction to data abstraction and algorithm analysis. (May not be used to meet computer science requirements.)		
506	INTRODUCTION TO C & UNIX	<i>3 credits</i>
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.)		
508	WINDOWS PROGRAMMING	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Windows operating systems, integrated development environment, event-driven programming, graphical user interface design, using object libraries, component object model, object linking and embedding, client-server objects.		
518	INTRO TO DISCRETE STRUCTURES	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Introduction to algebraic structures of particular use in computer science. Topics include algorithms and flow chart language, graphs and digraphs, trees, and lattices codes. (May not be used to meet computer science Master's degree requirements.)		
521	OBJECT-ORIENTED PROGRAMMING	<i>3 credits</i>
Prerequisite: Admission to Computer Science master's program or permission. Object-oriented design, analysis, and programming using different development models. Comparison with other programming paradigms.		
526	OPERATING SYSTEMS	<i>3 credits</i>
Prerequisites: Admission to Computer Science master's program or permission. Introduction to aspects of all modern operating systems: types; storage management; process and resource control; interacting process synchronization. (May not be used to meet computer science master's degree requirements)		
528	UNIX SYSTEM PROGRAMMING	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. An overview of the UNIX operating system. Shell programming. Process management, processor management, storage management, scheduling algorithms, resource protection, and system programming.		
530	THEORY OF PROGRAMMING LANGS	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Advanced concepts underlying 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	<i>3 credits</i>
Prerequisites: Admission to Computer Science master's program or permission. Design and analysis of efficient algorithms for random access machines; derivation of pattern classification algorithms.		
540	COMPILER DESIGN	<i>3 credits</i>
Prerequisites: 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	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Introduce major themes in bioinformatics. Topics include concepts of molecular genetics, biological databases, database searching, sequence alignments, phylogenetic trees, structure prediction, and microarray data analysis.		
553	COMPUTER SECURITY	<i>3 credits</i>
Prerequisite: admission to Computer Science master's program or permission. Principles of computer security: cryptography, authentications, secure network protocols, intrusion detection and countermeasures.		
555	DATA COMMUN & COMP NETWKS	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. ISO-OSI, TCP/IP, SNA data switching, protocols, flow and error control, routing, topology. Network trends, network taxonomies, and socket-based programming.		
557	COMPUTER GRAPHICS	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Topics in vector and raster graphics, interactive graphics languages, scan conversion, clipping, geometric transformation, projection, shading, animation and virtual reality.		
560	ARTIFICIAL INTEL & HEURIST PRG	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Study of various programs which have displayed some intelligent behavior. Exploration of level at which computers can display intelligence.		
563	PERVASIVE COMPUTING	<i>3 credits</i>
Prerequisite: admission to Computer Science master's program or permission. Computing from a wireless perspective. Topics include protocols, algorithms, security and sensor networks.		
565	COMPUTER ARCHITECTURE	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. An introduction to hardware organization of computer at register, processor and system level. In-depth study of architecture of a particular computer system family.		
568	MOBILE ROBOTICS	<i>3 credits</i>

Prerequisite: admission to Computer Science master's program or permission. Introduction to history, hardware and software components, and design of autonomous mobile robots. Multiple projects involving both physical robots and software emulation.

575	DATABASE MANAGEMENT	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Fundamentals of database organization, data manipulations and representation, data integrity, privacy.		
577	INTRO TO PARALLEL PROCESSING	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Commercial processors: past and present. Parallel languages, models of parallel computation. Emphasis on parallel algorithm design and performance evaluation. A broad study of parallel paradigms with relation to real world applications.		
580	SOFTWARE ENGINEERING	<i>3 credits</i>
Prerequisite: Admission to Computer Science master's program or permission. Introduction to formal software specification and validation. Introduction of methodologies and tools of design, development, validation, and maintenance.		
589	T: COMPUTER SCIENCE	<i>1-3 credits</i>
(May be repeated) Prerequisite: permission of instructor. Selected topics in computer science at an advanced level.		
597	INDIV STUDY: COMPUTER SCIENCE	<i>1-3 credits</i>
(May be repeated. Can apply to degree, minor or certificate only with department approval.) Prerequisite: permission. Directed studies designed as introduction to research problems under guidance of designated faculty member.		
601	RESEARCH METHODOLOGY	<i>3 credits</i>
Prerequisite: Admission to Computer Science graduate program or permission of instructor. Research process overview: literature review, formulation of problems, research design, writing proposals, data collection, data processing and analysis, evaluation, writing reports, and presenting results.		
626	ADVANCED OPERATING SYSTEMS	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Advanced topics in operating system design: synchronization mechanisms, performance evaluation, security, distributed operating systems.		
630	ADVANCED THEORY OF PRGMG LANGS	<i>3 credits</i>
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	<i>3 credits</i>
Prerequisite: Admission to Computer Science master's program or permission. Advanced graph algorithms, matrix multiplication, fast Fourier transforms, lower bound theory, complexity hierarchies, NP-complete and intractable problems, approximation techniques.		
641	OPTIMIZ FOR PARALLEL COMPILERS	<i>3 credits</i>
Prerequisite: 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	<i>3 credits</i>
Prerequisite: Admission to Computer Science graduate program or permission of instructor. 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	<i>3 credits</i>
Prerequisite: Admission to Computer Science graduate program or permission of instructor. Issues in software security -- common software security errors, steganography, spam, cryptography, malware, Internet hacking.		
655	COMPUTER NETWORKS & DISTR PROC	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Interconnection technologies, protocol layering models, datagram and stream transport services, client-server paradigm, principles and protocols of interconnected networks operating as unified systems, and TCP/IP technology.		
658	VISUALIZATION	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Visualization pipeline, data representation in visualization, visualization algorithms, object-oriented visualization, scientific visualization, volume visualization, visualization applications and research topics.		
660	EXPERT SYSTEMS	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Architecture of expert systems, knowledge representation and acquisition, inference mechanisms for expert systems, uncertainty management, expert system tools and applications.		
665	ADVANCED COMPUTER ARCHITECTURE	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Fundamentals of computer analysis and design, with emphasis on cost/performance tradeoffs. Studies of pipelined, vector, RISC, and multiprocessor architectures.		
670	ADVANCED AUTOMATA & COMPUT	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. An in-depth study of concepts related to computability. Topics include nondeterministic automats, recursive function theory, the Chomsky hierarchy, Turing machines and undecidability.		

676	DATA MINING	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Study fundamental data mining algorithms and their applications in the process of Knowledge Discovery from Databases. Study Data warehousing systems and architectures.		
677	PARALLEL PROCESSING	<i>3 credits</i>
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 ENGR METHODOLOGIES	<i>3 credits</i>
Prerequisite: admission to Computer Science Master's Program or permission. Introduction to current techniques and methodologies used in software design, development, validation, and maintenance.		
689	ADV T: COMPUTER SCIENCE	<i>1-3 credits</i>
(May be repeated) Prerequisite: permission of instructor. At most, six credits may be applied to Master's 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 IN COMPUTER SCIENCE	<i>1-3 credits</i>
Prerequisite: graduate teaching assistant or permission. Training and experience in college teaching of computer science under the supervision of an experienced faculty member. May not be used to meet degree requirements. Credit/non-credit.		
697	INDIV STUDY: COMPUTER SCIENCE	<i>1-3 credits</i>
(May be repeated. Can apply to degree only with department approval) Prerequisite: permission of instructor. Directed studies designed as introduction to research problems under guidance of designated faculty member.		
698	MASTERS RESEARCH	<i>1-6 credits</i>
Prerequisite: permission of advisor. Research in computer science topic culminating in research paper. No more than three credits may be applied to the minimum degree requirements (May be repeated.)		
699	MASTERS THESIS	<i>1-6 credits</i>
(May be repeated) Prerequisite: permission. Properly qualified candidate for a master's degree may enroll for research experience which culminates in presentation of a faculty-supervised thesis.		



Statistics (3470)

250	STATISTICS FOR EVERYDAY LIFE	<i>4 credits</i>
Prerequisite: Mathematics Placement Test. Conceptual approach to the basic ideas and reasoning of statistics. Topics include descriptive statistics, probability (uncertainty), statistical inference (estimation and hypothesis testing). Computer applications laboratory.		
260	BASIC STATISTICS	<i>3 credits</i>
Prerequisite: Mathematics Placement Test or 3450:100. Applied approach to data description and statistical inference (hypothesis testing, estimation). Analysis of ratios, rates, and proportions. Computer applications. Laboratory.		
261	INTRODUCTORY STATISTICS I	<i>2 credits</i>
Prerequisite: Mathematics Placement Test. Descriptive statistics, tabular and graphical data displays; probability, probability distributions. Introduction to statistical inference (hypothesis testing, estimation); one-sample parametric and nonparametric methods. Computer applications.		
262	INTRODUCTORY STATISTICS II	<i>2 credits</i>
Prerequisite: 261 or equivalent. Parametric and nonparametric methods of statistical inference for paired data and two-sample problems; one-way ANOVA, simple linear regression and correlation. Computer applications.		
289	SEL T: STATISTICS	<i>1-3 credits</i>
Prerequisite: Permission. Selected topics of interest in statistics.		
360	STATISTICAL INVESTIGATIONS	<i>3 credits</i>
Prerequisites: 3470:250 or 3470:260 or 3470:262. This course provides practical statistical methods beyond the introductory course. The topics include design of experiments, data analysis, multiple regression and modern software use.		
401	PROBABILITY & STAT FOR ENGINRS	<i>2 credits</i>
Prerequisite: 3450:222. Introduction to probability, statistics, random variables, data descriptions, statistical inference, confidence intervals, hypothesis testing, design of experiments, and applications of statistics to engineering.		
450	PROBABILITY	<i>3 credits</i>
Prerequisite: 3450:221. Introduction to probability, random variables and probability distributions, expected value, sums of random variables, Markov processes.		
451	THEORETICAL STATISTICS I	<i>3 credits</i>
Sequential. Prerequisite: 3450:223. Elementary combinatorial probability theory, probability distributions, mathematical expectation, functions of random variables, sampling distributions, point and interval estimation, tests of hypotheses, regression and correlation, introduction to experimental designs.		
452	THEORETICAL STATISTICS II	<i>3 credits</i>
Sequential. Prerequisite: 3450:223. Elementary combinatorial probability theory, probability distributions, mathematical expectation, functions of random variables, sampling distributions, point and interval estimation, tests of hypotheses, regression and correlation, introduction to experimental designs.		
460	STATISTICAL METHODS	<i>4 credits</i>
Application of statistical methods to the social sciences including descriptive statistics, probability distributions, statistical inference (parametric, nonparametric), categorical data analysis, linear regression, correlation, computer applications. May not be used to meet Mathematical Sciences degree requirements.		
461	APPLIED STATISTICS	<i>4 credits</i>
Prerequisite: 3450:222 or equivalent. Applications of statistical theory to natural and physical sciences and engineering, including probability distributions, interval estimation, hypotheses testing (parametric and nonparametric), and simple linear regression and correlation.		
462	APPLIED REGRESSION AND ANOVA	<i>4 credits</i>
Prerequisites: 461 or equivalent or 460 or permission. Applications of the techniques of regression and multifactor analysis of variance.		
465	DESIGN OF SAMPLE SURVEYS	<i>3 credits</i>
Prerequisite: 461 or equivalent. Design and analysis of frequently used sample survey techniques.		
469	RELIABILITY MODELS	<i>3 credits</i>
Prerequisite: 461. Selected topics in reliability modeling including parametric and nonparametric models, competing modes of failure, censored data and accelerated life models.		
471	ACTUARIAL SCIENCE I	<i>3 credits</i>
Prerequisite: 451 or 461 or equivalent. Study of various statistical, financial, and mathematical calculations used to determine insurance premiums related to contingent risks based on individual risk model frameworks.		
472	ACTUARIAL SCIENCE II	<i>3 credits</i>

Prerequisite: 471. 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.

475	FOUNDATIONS OF STAT QUAL CNTRL	<i>3 credits</i>
Prerequisite: 461 or equivalent. Course provides a solid foundation in the theory and applications of statistical techniques widely used in industry.		
480	STATISTICAL DATA MANAGEMENT	<i>3 credits</i>
Prerequisites: 461. Students learn data organization and structures, design of statistical data bases, statistical software analysis, importing and exporting data between software, and missing data analysis.		
489	T: STATISTICS	<i>1-3 credits</i>
(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.		
491	W: STATISTICS	<i>1-3 credits</i>
(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.		
495	STATISTICAL CONSULTING	<i>1-3 credits</i>
Prerequisite: 480 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 Mathematical Sciences majors.		
497	INDIV READING: STATISTICS	<i>1-2 credits</i>
(May be repeated for a total of four credits) Prerequisites: senior standing and permission. Directed studies in statistics designed as introduction to research problems under guidance of selected faculty member.		
498	SENIOR HONORS PROJECT	<i>1-3 credits</i>
Prerequisite: 489 (honors). Directed study for senior student in the University Honors Program who has completed 3450:489 (honors). An introduction to research problems in the mathematical sciences under the guidance of selected faculty.		
550	PROBABILITY	<i>3 credits</i>
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.		
551	THEORETICAL STATISTICS I	<i>3 credits</i>
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, introduction to experimental designs. May not be used to meet graduate major requirements in statistics.		
552	THEORETICAL STATISTICS II	<i>3 credits</i>
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, introduction to experimental designs. May not be used to meet graduate major requirements in statistics		
560	STATISTICAL METHODS	<i>4 credits</i>
Application of statistical methods to the social sciences including description statistics, probability distributions, statistical inference (parametric, nonparametric), categorical data analysis, linear regression, correlation, computer applications. May not be used to meet Mathematical Sciences degree requirements. May not be used to meet graduate major requirements in statistics.		
561	APPLIED STATISTICS	<i>4 credits</i>
Prerequisite: Appropriate background is two semesters of calculus or equivalent. Applications of statistical theory to natural and physical sciences and engineering, including probability distributions, interval estimation, hypotheses testing (parametric and nonparametric), and simple linear regression and correlation. May not be used to meet graduate major requirements in statistics.		
562	APPLIED REGRESSION AND ANOVA	<i>4 credits</i>
Prerequisite: Appropriate background is one semester of applied statistics or equivalent. Applications of the techniques of regression and multifactor analysis of variance. May not be used to meet graduate major requirements in statistics.		
565	DESIGN OF SAMPLE SURVEYS	<i>3 credits</i>
(Appropriate background is one semester of applied statistics or equivalent.) Design and analysis of frequently used sample survey techniques.		
569	RELIABILITY MODELS	<i>3 credits</i>
(Appropriate background is one semester of applied statistics or equivalent.) Selected topics in reliability modeling including parametric and nonparametric models, competing modes of failure, censored data and accelerated life models.		
571	ACTUARIAL SCIENCE I	<i>3 credits</i>
(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 model frameworks.		
572	ACTUARIAL SCIENCE II	<i>3 credits</i>

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.

575	FOUNDATIONS OF STAT QUAL CNTRL	<i>3 credits</i>
(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.		
580	STATISTICAL DATA MANAGEMENT	<i>3 credits</i>
(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.		
589	T: STATISTICS	<i>1-3 credits</i>
(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.		
591	W: STATISTICS	<i>1-3 credits</i>
(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.		
595	STATISTICAL CONSULTING	<i>1-3 credits</i>
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.		
650	ADV PROB & STOCHASTIC PROCESS	<i>3 credits</i>
Prerequisite: 651. Random walk, distributions, unlimited sequence of trials, laws of large numbers, convolutions, branching processes, renewal theory, Markov chains, time-dependent stochastic processes.		
651	PROBABILITY & STATISTICS	<i>4 credits</i>
(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.		
652	ADV MATHEMATICAL STATISTICS	<i>3 credits</i>
Prerequisite: 651. Convergence of random variables, the Central Limit Theorem; theory of estimation; theory of hypothesis testing; the multivariate normal density; introduction to linear models; Bayesian statistics.		
655	LINEAR MODELS	<i>3 credits</i>
(Appropriate background is Linear Algebra or 3470:651 or equivalent.) General linear model in matrix notation, general linear hypothesis, regression models, experimental design models, analysis of variance and covariance, variance components.		
660	ADVANCED STATISTICAL METHODS	<i>4 credits</i>
(Appropriate background is one semester of applied statistics or equivalent.) Theory and applications of the techniques of regression and multifactor analysis of variance.		
661	STATISTICS FOR LIFE SCIENCES	<i>3 credits</i>
Prerequisite: college level algebra or equivalent. Data description and presentation, probability applications in the life sciences (including sensitivity, specificity, relative risk), principles and application of statistical inference, ANOVA, correlation and regression. May not be used to meet graduate major requirements in statistics.		
663	EXPERIMENTAL DESIGN	<i>3 credits</i>
(Appropriate background is one semester of applied statistics or equivalent.) Selected topics in experimental design including random and fixed effects, nested designs, split plot designs, confounding, fractional factorials, Latin squares, and analysis of covariance.		
664	STATISTICS FOR THE HEALTH SCI	<i>4 credits</i>
(May not be used to meet degree requirements for mathematical sciences majors.) Prerequisite: college- level algebra or equivalent. Descriptive statistics, probability and probability distribution, tests of hypotheses and confidence intervals, nonparametric statistics, regression and correlation. May not be used to meet graduate major requirements in statistics.		
665	REGRESSION	<i>3 credits</i>
(Appropriate background is one semester of applied statistics or equivalent.) Correlation, simple and multiple linear regression: least squares, matrix notation, model building and checking estimation, hypothesis testing, outliers, influence, multicollinearity, transformations, categorical regressors; logistic regression.		
666	NONPARAMETRIC STATS - METHODS	<i>3 credits</i>
(Appropriate background is one semester of applied statistics or equivalent.) Theory and practice using techniques requiring less restrictive assumptions. Nonparametric analogues to t- and F-tests, ANOVA, regression and correlation. Computer applications.		
667	FACTOR ANALYSIS	<i>3 credits</i>
(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.		
668	MULTIVARIATE STATISTICAL METHS	<i>3 credits</i>
(Appropriate background is two semesters of applied statistics or equivalent.) Multivariate techniques including distance concept, Hotelling T ² , multivariate ANOVA, regression and correlation, linear contrasts, factorial experiments, nested and repeat measure designs, Bonferroni X ² tests, linear discrimination analysis, canonical correlations, application.		

670	BIOSTATISTICS	<i>3 credits</i>
(Appropriate background is one semester of applied statistics or equivalent.) Statistical issues and methods for biological, medical and health sciences including: clinical trials, sample size, power, log-linear models, survival analysis, and bioassay. Computer applications.		
675	RESPONSE SURFACE METHODOLOGY	<i>3 credits</i>
(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.		
689	ADV T: STATISTICS	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisite: 651. Selected topics in statistics including concepts in order, statistics, advanced inference, sequential analysis, stochastic processes, reliability theory, Bayesian statistics and regression.		
692	STATISTICS MASTERS PAPER	<i>1-3 credits</i>
(May be repeated) Prerequisite: permission of advisor. Supervised writing of paper for Masters of Science in Statistics Nonthesis Option. No more than 2 credits apply to major requirements.		
695	PRACTICUM IN STATISTICS & MATH	<i>1-3 credits</i>
Prerequisite: graduate teaching assistant or permission. Training and experience in college teaching of statistics. May not be used to meet degree requirements. Credit/non-credit.		
697	INDIV READING: STATISTICS	<i>1-2 credits</i>
(May be repeated for a total of four credits) Prerequisites: graduate standing and permission. Directed studies in statistics under guidance of selected faculty member.		
698	MASTERS RESEARCH	<i>1-6 credits</i>
(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.		
699	MASTERS THESIS	<i>2 credits</i>
(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 experience which culminates in presentation of faculty-supervised thesis.		



Engineering Applied (3490)

790	ADV SEM: APPLIED MATH	<i>1-4 credits</i>
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.		
898	PRELIMINARY RESEARCH	<i>1-15 credits</i>
Prerequisite: Permission. (May be repeated.) Completion of qualifying examination and approval of Student Advisory Committee. Preliminary investigation of Ph.D. dissertation topic.		
899	DOCTORAL DISSERTATION	<i>1-15 credits</i>
Prerequisite: Permission. (May be repeated.) Completion of Candidacy examination and approval of Student Advisory Committee. Original research by a Ph.D. candidate.		



Modern Languages (3500)

101	BEG: MODERN LANGUAGE I	<i>4 credits</i>
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
102	BEG: MODERN LANGUAGE II	<i>4 credits</i>
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
201	INTER: MODERN LANGUAGE I	<i>3 credits</i>
Sequential. Prerequisite: 102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.		
202	INTER: MODERN LANGUAGE II	<i>3 credits</i>
Sequential. Prerequisite: 102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.		
422	MOD LANG: ST ADV LANG SKL OR L	<i>1-4 credits</i>
Prerequisite: Modern Languages 202 or equivalent. Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.		
490	W: MODERN LANGUAGES	<i>1-4 credits</i>
Prerequisite: permission of instructor. (May be repeated for a total of 8 credits) Group studies of special topics in modern languages.		
497	INDIV READING: MOD LANG	<i>1-3 credits</i>
Prerequisites: 202 and permission of department chair.		
498	SENIOR HONORS PROJECT	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and permission. Open only to language major enrolled in Honors Program. Independent study leading to completion of senior honors thesis or other original work.		
522	MOD LANG: ST ADV LANG SKL OR L	<i>1-4 credits</i>
See department for course description.		
590	W: MODERN LANGUAGE	<i>1-4 credits</i>
Prerequisite: graduate status or permission of department. (May be repeated for a maximum of eight credits) Group studies of special topics in modern languages.		
597	INDIV READING: MOD LANG	<i>1-4 credits</i>
Prerequisite: Graduate status and permission of the instructor and department chair. Individual study under the guidance of professor who directs and coordinates student's reading and research. The general designation of 3500 is used for languages that do not have a specific department number (i.e., Arabic, Chinese, Portuguese, etc.). May be repeated with departmental permission.		



Arabic (3501)

101	BEGINNING ARABIC I	<i>4 credits</i>
Sequential. Acquisition of basic speaking, listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
102	BEGINNING ARABIC II	<i>4 credits</i>
Sequential. Prerequisite: 101 or equivalent. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
201	INTERMEDIATE ARABIC I	<i>4 credits</i>
Sequential. Prerequisite: 102 or equivalent. Continuing acquisition of competence in speaking, listening comprehension, reading and writing through use of culturally authentic materials, with emphasis on developing accuracy and self-expression. (Conducted in Arabic).		
202	INTERMEDIATE ARABIC II	<i>4 credits</i>
Sequential. Prerequisite: 201 or equivalent. Continuing acquisition of competence in speaking, listening comprehension, reading and writing through use of culturally authentic materials, with emphasis on developing accuracy and self-expression. (Conducted in Arabic).		
210	ARABIC CULTURE THROUGH FILM	<i>2 credits</i>
Prerequisites: 32 credit hours including English Composition I and II (3300:111, 112) or equivalent. Exploration of Arabic culture through viewing of films subtitled in English. Readings and discussions in English. Does not count toward minor in Arabic.		
301	COMPOSITION AND CONVERSATION	<i>4 credits</i>
Prerequisite: 202 or equivalent. Further development of language skills acquired at the intermediate level: Writing, Speaking, Listening Comprehension and Reading. (Conducted in Arabic).		
302	ARABIC MEDIA	<i>4 credits</i>
Prerequisite: 202 or equivalent. Further development of practical language skills with a focus on Arabic media. The course also will enrich students' understanding of Arabic culture. (Conducted in Arabic).		
303	INTRO:MODERN ARABIC LITERATURE	<i>4 credits</i>
Prerequisite: 202 or equivalent. Enhancement of students' communicative skills with emphasis on development of the ability to read, appreciate and discuss Modern Arabic Literature. (Conducted in Arabic).		
304	CULTURAL READINGS IN ARABIC	<i>4 credits</i>
Prerequisite: 202 or equivalent. Enhancement of communicative skills in Arabic with a focus on development of the ability to read, appreciate and discuss Arabic writing. (Conducted in Arabic).		
311	ARABIC CULTURAL EXP ABROAD	<i>1-8 credits</i>
Prerequisite: Permission of Department Chair. Residence and study abroad in an Arabic-speaking country. May be repeated once with different content. Only 8 credits allowable for minor in Arabic.		
422	ST: ARABIC	<i>1-4 credits</i>
Prerequisite: Two of the group 301,302,303,304 or permission of instructor. 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 maximum total of 8 credits.)		
497	INDIV READING: ARABIC	<i>1-4 credits</i>
Prerequisite: 202 and permission of the instructor and department chair. Individual study under the guidance of professor. May be repeated once with departmental permission for a total of 8 credits.		
522	ST: ARABIC	<i>1-4 credits</i>
Prerequisite: Graduate status and permission of the 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 maximum total of 8 credits.)		
597	INDIV READING: ARABIC	<i>1-4 credits</i>
Prerequisite: Graduate status, permission of the instructor and department chair. Individual study under the guidance of a professor. May be repeated with departmental permission for a total of 8 credits.		



Chinese (3502)

101	BEGINNING CHINESE I	<i>4 credits</i>
Sequential. Acquisition of basic reading, speaking, writing, and listening comprehension skills, with emphasis on development of self-expression in everyday situations through culturally authentic media and texts.		
102	BEGINNING CHINESE II	<i>4 credits</i>
Sequential. Prerequisite: 101 or equivalent. Acquisition of basic reading, speaking, writing, and listening comprehension skills, with emphasis on development of self-expression in everyday situations through culturally authentic media and texts.		
201	INTERMEDIATE CHINESE I	<i>4 credits</i>
Sequential. Prerequisite: 102 or equivalent. Continuing acquisition of speaking, listening, comprehension, reading, and writing competency through use of culturally authentic materials; emphasis on developing accuracy of self-expression. (Conducted in Chinese.)		
202	INTERMEDIATE CHINESE II	<i>4 credits</i>
Sequential. Prerequisite: 201 or equivalent. Continuing acquisition of speaking, listening, comprehension, reading, and writing competency through use of culturally authentic materials; emphasis on developing accuracy of self-expression. (Conducted in Chinese.)		
210	CHINESE CULTURE THROUGH FILM	<i>2 credits</i>
Prerequisites: 32 credit hours including English Composition I and II (3300:111, 112) or equivalent. Exploration of Chinese culture through viewing of films subtitled in English. Readings and discussions in English. Does not count toward minor in Chinese.		
301	CHINESE CONVERSATION	<i>4 credits</i>
Prerequisite: 202 or equivalent. Continuing development of oral expression, listening comprehension and conversational ability, with emphasis on expressing and supporting opinions. (Conducted in Chinese.)		
302	CHINESE COMPOSITION	<i>4 credits</i>
Prerequisite: 202 or equivalent. Development of writing skills through intensive practice and study of written expression in Chinese. Emphasis on composing extensive descriptive narrations and personal letters. (Conducted in Chinese.)		
303	CHINESE CONV THROUGH MEDIA	<i>4 credits</i>
Sequential. Prerequisite: 202 or equivalent. Development of oral expression and listening comprehension, with emphasis on discussing current topics and expressing and supporting opinions based on media clips. (Conducted in Chinese.)		
304	CHINESE READING AND WRITING	<i>4 credits</i>
Prerequisite: 202 or equivalent. Continuing development of reading ability through study of Chinese publications, and writing summaries of the texts. (Conducted in Chinese.)		
311	CHINESE CULTURAL EXP ABROAD	<i>1-8 credits</i>
Prerequisite: Permission of Department Chair. Residence and study abroad in an Chinese-speaking country. May be repeated once with different content. Only 8 credits allowable for minor in Chinese.		
422	ST: LANG SKLS, OR CULT OR LIT	<i>1-4 credits</i>
Prerequisite: Two of the group 301,302,303,304 or permission of instructor. Development of specialized language skills or reading of significant works of literature or culture not studied in other courses. (May be repeated once under different topic for a total of 8 credits.)		
497	INDIV READING: CHINESE	<i>1-4 credits</i>
Prerequisite: 202 and permission of the instructor. Individual study under guidance of professor who directs and coordinates student's reading and research. May be repeated once for a total of 8 credits.		
522	ST: LANG SKLS, OR CULT OR LIT	<i>1-4 credits</i>
Prerequisite: Graduate status and permission of the 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 once under different topic for a total of 8 credits.)		
597	INDIV READING: CHINESE	<i>1-4 credits</i>
Prerequisite: Graduate status and permission of the instructor and department chair. Individual study under guidance of professor who directs and coordinates student's reading and research. May be repeated for a total of 8 credits.		



Latin (3510)

101	BEGINNING LATIN I	<i>4 credits</i>
Sequential. Reading, writing and translation; oral and written drill; analysis of grammatical structure and English vocabulary building.		
102	BEGINNING LATIN II	<i>4 credits</i>
Sequential. Prerequisite: 101 or equivalent. Reading, writing and translation; oral and written drill; analysis of grammatical structure and English vocabulary building.		
190	ENGL WORDS LATIN & GREEK ELEM	<i>3 credits</i>
The influence of Latin and Greek on English vocabulary with some attention to the use of these languages in the scientific and legal fields. No foreign language is necessary.		
201	INTERMEDIATE LATIN I	<i>3 credits</i>
Prerequisite: 102 or equivalent. A survey of readings of the less difficult authors such as Pliny, Caesar, Plautus, Cicero's Letters or equivalent material.		
202	INTERMEDIATE LATIN II	<i>3 credits</i>
Prerequisite: 201 or equivalent. A survey of readings of the less difficult authors such as Pliny, Caesar, Plautus, Cicero's Letters or equivalent material.		
303	ADVANCED LATIN I	<i>3 credits</i>
Prerequisites: 202 or equivalent. Satirists, dramatists, philosophical, religious writers, lyric and elegiac poets, medieval writers. (May be repeated for credit with change of subject)		
304	ADVANCED LATIN II	<i>3 credits</i>
Prerequisites: 202 or equivalent. Satirists, dramatists, philosophical, religious writers, lyric and elegiac poets, medieval writers. (May be repeated for credit with change of subject)		
497	LATIN READING & RESEARCH	<i>3 credits</i>
Prerequisite: permission of instructor. Generally Latin epigraphy, prose composition or philology; numismatics or certain other archaeological topics may be offered. (May be repeated for credit with change of subject)		
498	LATIN READING & RESEARCH	<i>3 credits</i>
Prerequisite: permission of instructor. Generally Latin epigraphy, prose composition or philology; numismatics or certain other archaeological topics may be offered. (May be repeated for credit with change of subject)		
597	LATIN READING & RESEARCH	<i>3 credits</i>
Prerequisite: graduate status or permission of department. Generally Latin epigraphy, prose composition or philology; numismatics or certain other archaeological topics may be offered. (May be repeated for credit with change of subject)		
598	LATIN READING & RESEARCH	<i>3 credits</i>
Prerequisite: graduate status or permission of department. Generally Latin epigraphy, prose composition or philology; numismatics or certain other archaeological topics may be offered. (May be repeated for credit with change of subject)		



French (3520)

101	BEGINNING FRENCH I	<i>4 credits</i>
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
102	BEGINNING FRENCH II	<i>4 credits</i>
Sequential. Prerequisite: 101 or equivalent. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
201	INTERMEDIATE FRENCH I	<i>3 credits</i>
Sequential. Prerequisite: 102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.		
202	INTERMEDIATE FRENCH II	<i>3 credits</i>
Sequential. Prerequisite: 201 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.		
300	CONTEMP FRENCH AND FRANCO CULT	<i>3 credits</i>
Prerequisite: 3520: 202 or permission. Introduction to contemporary lives and cultures in France and other Francophone countries as portrayed in recent documents, literary works and films.		
301	FRENCH CONVERSATION	<i>3 credits</i>
Sequential. Prerequisite: 202 or equivalent. Development of speaking skills beyond the intermediate level. Practice of listening comprehension, correct pronunciation, extended and grammatically sound discourse.		
302	FRENCH COMPOSITION	<i>3 credits</i>
Sequential. Prerequisite: 202 or equivalent. Development of writing skills beyond intermediate level.		
303	FRENCH CULTURE & CIVILIZATN I	<i>3 credits</i>
Prerequisite: 202 or equivalent. History of France and French cultural heritage from its origins to mid 20th century.		
304	FRENCH CULTURE & CIVILIZATN II	<i>3 credits</i>
Prerequisite: 202 or equivalent. Modern history of France. Focus on political and social trends since 1960.		
305	INTRODUCTION TO FRENCH LIT	<i>3 credits</i>
Prerequisite: 202 or equivalent. Survey of French literature from its origins to present, with lectures, reading and class discussion of representative works.		
306	INTRODUCTION TO FRENCH LIT	<i>3 credits</i>
Prerequisite: 202 or equivalent. Survey of French literature from its origins to present, with lectures, reading and class discussion of representative works.		
308	INTERNSHIP IN FRENCH	<i>1-3 credits</i>
Permission of the French section advisor. (May be taken for a total of six credits. No more than three credits may be applied toward a 3520 major.) Student's internship which results in portfolio on career applications of the discipline of French.		
311	CONTEMPORARY FRENCH SOCIETY	<i>3 credits</i>
Prerequisite: 202 or equivalent. A study of contemporary French society, including customs and political and social issues. Conducted in French. Counts toward Culture and Civilization requirement for major.		
312	FRENCH CULT EXP ABROAD	<i>1-3 credits</i>
Prerequisite: Permission of the French section advisor. May be taken for a total of six credits. No more than three credits may be applied toward a 3520 major. Student's residence and independent study/project in French-speaking country which results in demonstrable understanding of the country's culture		
315	FRENCH PHONETICS	<i>3 credits</i>
Prerequisite or corequisite: 202 or equivalent. Intensive drill in pronunciation with correction and improvement of student's accent, emphasis on articulation, intonation and rhythm.		
350	THEMES IN FRENCH LIT IN TRANSL	<i>3 credits</i>
Prerequisite: 3400:210 or 3400:221. (May not be taken for credit toward the French major) Readings, discussion of novels and plays relating to selected themes of French literature. Texts and discussion in English.		
351	TRANSLATION: FRENCH	<i>3 credits</i>
Prerequisite: 202 or equivalent. Study of translation techniques, both French to English and English to French. Emphasis on stylistics and interpretation of idioms.		
352	TRANSLATION: BUSINESS FRENCH	<i>3 credits</i>

Prerequisite: 351 or equivalent. Application of translation techniques with particular stress on business styles, formats, and vocabulary. Especially recommended for students interested in international business.

402	ADVANCED FRENCH GRAMMAR	<i>3 credits</i>
Prerequisite: 302 or equivalent. Advanced study of normative French grammar with emphasis on syntax, morphology, grammatical structure and phonetic principles.		
403	ADV FRENCH: WRITTEN & ORAL COM	<i>3 credits</i>
Prerequisite: 301 & 302 or permission. Development of writing and speaking skills beyond that achieved in 301 and 302 through intensive practice and grammar review.		
407	FRENCH LIT OF MID AGES & RENAI	<i>4 credits</i>
Prerequisite: 305 or 306 or equivalent. Reading and discussion of selected Medieval and Renaissance literary works. Conducted in French.		
413	FRENCH CINEMA	<i>3 credits</i>
Prerequisites: 301 or 302; or permission from instructor. Study and discussion of various aspects of French culture and civilization as characterized in movies.		
419	19TH CENTURY FRENCH LITERATURE	<i>4 credits</i>
Prerequisite: 305 or 306 or equivalent. Reading and discussion of selected works pertaining to romantic, realistic and naturalistic movements. Conducted in French.		
422	FRENCH: ST ADV LNG SKL CULT LI	<i>1-4 credits</i>
Prerequisite: 202 or equivalent. (May be repeated) Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.		
427	20TH CENTURY FRENCH LITERATURE	<i>4 credits</i>
Prerequisite: 305 or 306 or equivalent. Reading and discussion of the most representative works of period. Conducted in French.		
430	CONTEMPORARY QUEBEC	<i>3 credits</i>
Prerequisite: 301, or 302 or permission. Historical, political, sociological and cultural overviews of Qu�bec, offering an in-depth examination of questions of identity through the study of literature and popular culture.		
431	FRANCOPHONE LITERATURE	<i>3 credits</i>
Prerequisite: 300 or 301 or 302 or permission. The problematics of identity (race, class) in postcolonial context, studied through literary texts by authors from Africa, Caribbean, and Qu�bec.		
460	SEL THEMES: FRENCH LIT	<i>3 credits</i>
(May be repeated.) Conducted in French. Prerequisite: 305 and 306 or equivalent. Reading and discussion of literary works selected according to an important theme.		
497	INDIVIDUAL READING IN FRENCH	<i>1-3 credits</i>
Prerequisite: 202 and permission of department chair.		
498	INDIVIDUAL READING IN FRENCH	<i>1-3 credits</i>
Prerequisite: 202 and permission of department chair.		
502	ADVANCED FRENCH GRAMMAR	<i>3 credits</i>
Prerequisite: graduate status or permission of department. Advanced study of normative French grammar with emphasis on syntax, morphology, grammatical structure and phonetic principles.		
513	FRENCH CINEMA	<i>3 credits</i>
Prerequisite: graduate standing or permission of department. Study and discussion of various aspects of French culture and civilization as characterized in movies.		
522	FRENCH: ST ADV LANG SKL CULT L	<i>1-4 credits</i>
Prerequisite: graduate standing or permission of department. (May be repeated.) Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.		
527	20TH CENTURY FRENCH LITERATURE	<i>4 credits</i>
Prerequisite: graduate standing or permission of department. Reading and discussion of the most representative works of period. Conducted in French.		
530	CONTEMPORARY QUEBEC	<i>3 credits</i>
Historical, political, sociological and cultural overviews of Qu�bec, offering an in-depth examination of questions of identity through the study of literature and popular culture.		
531	FRANCOPHONE LITERATURE	<i>3 credits</i>
The problematics of identity (race, class) in a postcolonial context, studied through literary texts by authors from Africa, Caribbean, and Qu�bec.		
550	EXPLICATION DE TEXTES	<i>3 credits</i>
See department for course description.		
560	SEL THEMES: FRENCH LIT	<i>3 credits</i>
(May be repeated.) Conducted in French. Prerequisite: graduate standing or permission of department. Reading and discussion of literary works selected according to an important theme.		
597	INDIV READING: FRENCH	<i>1-4 credits</i>
Prerequisite: graduate status or permission of department. Individual reading in French, offered at the graduate level. (May be repeated for a total of eight credits.)		

697

INDIVID RDG & RSRCH IN FRENCH

1-4 credits

Prerequisite: graduate status or permission of department. Independent study and research in specific areas. Considerable reading and writing required.

698

INDIVID RDG & RSRCH IN FRENCH

1-4 credits

Prerequisite: graduate status or permission of department. Independent study and research in specific areas. Considerable reading and writing required.



German (3530)

101	BEGINNING GERMAN I	<i>4 credits</i>
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
102	BEGINNING GERMAN II	<i>4 credits</i>
Sequential. Prerequisite: 101 or equivalent. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
201	INTERMEDIATE GERMAN I	<i>3 credits</i>
Sequential. Prerequisite: 102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.		
202	INTERMEDIATE GERMAN II	<i>3 credits</i>
Sequential. Prerequisite: 201 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.		
301	GERMAN CONVERSATION & COMPOSIT	<i>3 credits</i>
Prerequisite: 202 or equivalent. Advanced composition using German models, special attention to words and idioms, development of oral expression and conversational ability.		
302	SPEC TOPIC IN GERMN CONV & COM	<i>3 credits</i>
Prerequisite: 202 or equivalent or permission of instructor. May be repeated for credit. Special attention to development of oral expression and conversational ability.		
310	SEX, VIOL, TER IN GER FRY TALE	<i>3 credits</i>
Exploration of historical context of German fairy tales and interpretation plus modern significance of texts according to Jungian archetypal psychology. Readings and discussions in English.		
403	ADVANCED GERMAN CONV & COMP	<i>3 credits</i>
Prerequisite: 302 or equivalent. Thorough analysis of syntax, morphology, phonetic principles and grammatical structure.		
404	ADVANCED GERMAN CONV & COMP	<i>3 credits</i>
Prerequisite: 302 or equivalent. Thorough analysis of syntax, morphology, phonetic principles and grammatical structure.		
406	GERMAN CULTURE & CIVILIZATION	<i>3 credits</i>
Prerequisite: 302 or 306 or equivalent. Particular emphasis on customs, traditions, literary trends and artistic tendencies that constitute German's contribution to Western civilization.		
407	GERMAN CULTURE & CIVILIZATION	<i>3 credits</i>
Prerequisite: 302 or 306 or equivalent. Particular emphasis on customs, traditions, literary trends and artistic tendencies that constitute German's contribution to Western civilization.		
422	GRMN: ST ADV LANG SKL/CULT/LIT	<i>1-4 credits</i>
Prerequisite: 202 or equivalent. (May be repeated) Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.		
497	INDIVIDUAL READING IN GERMAN	<i>1-3 credits</i>
Prerequisite: 202 and permission of department chair.		
498	INDIVIDUAL READING IN GERMAN	<i>1-3 credits</i>
Prerequisite: 202 and permission of department chair.		
597	INDIV READING: GERMAN	<i>1-4 credits</i>
Prerequisite: graduate status or permission of department. Individual reading in German, offered at the graduate level. (May be repeated for a total of eight credits.)		



Italian (3550)

101	BEGINNING ITALIAN I	<i>4 credits</i>
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
102	BEGINNING ITALIAN II	<i>4 credits</i>
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
201	INTERMEDIATE ITALIAN I	<i>3 credits</i>
Sequential. Prerequisite: 102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.		
202	INTERMEDIATE ITALIAN II	<i>3 credits</i>
Sequential. Prerequisite: 102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.		
301	ITALIAN COMPOSITION & CONVERSA	<i>3 credits</i>
Prerequisite: 202 or equivalent. Italian composition using Italian models, special attention to words and idioms and development of oral expression and conversational ability.		
302	ITALIAN COMPOSITION & CONVERSA	<i>3 credits</i>
Prerequisite: 202 or equivalent. Italian composition using Italian models, special attention to words and idioms and development of oral expression and conversational ability.		
422	ITALIAN: ST ADV LNG SKL CULT L	<i>1-4 credits</i>
Prerequisite: 202 or equivalent. (May be repeated) Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.		
497	INDIVIDUAL READING IN ITALIAN	<i>1-3 credits</i>
Prerequisite: 202 and permission of the department chair.		
597	INDIVIDUAL READING IN ITALIAN	<i>1-4 credits</i>
Prerequisite: graduate status or permission of department. Individual study under guidance of professor who directs and coordinates student's reading and research.		



Japanese (3560)

101	BEGINNING JAPANESE I	<i>4 credits</i>
Sequential. Acquisition of basic reading, speaking, writing, and listening comprehension skills.		
102	BEGINNING JAPANESE II	<i>4 credits</i>
Sequential. Prerequisite: 101 or equivalent. Acquisition of basic reading, speaking, writing, and listening comprehension skills.		
201	INTERMEDIATE JAPANESE I	<i>3 credits</i>
Sequential. Prerequisite: 102 or equivalent. Continuing development of reading, writing, speaking, and listening comprehension skills.		
202	INTERMEDIATE JAPANESE II	<i>3 credits</i>
Sequential. Prerequisite: 201 or equivalent. Continuing development of reading, writing, speaking, and listening comprehension skills.		
210	JAPANESE CULTURE THROUGH FILM	<i>2 credits</i>
Prerequisites: 32 credit hours including English Composition I and II (3300:111, 112) or equivalent. Exploration of various aspects of Japanese culture through viewing of films. Films are subtitled in English. Readings and discussions in English.		
422	ST: LANG SKILLS, CULTURE, LIT	<i>3 credits</i>
Prerequisite: 202 or equivalent. (May be repeated). Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.		
497	INDIVIDUAL READING IN JAPANESE	<i>1-3 credits</i>
Prerequisite: 202 or permission of the department chair. Directed study in an area of individual interest chosen by the student in consultation with the instructor.		



Russian (3570)

101	BEGINNING RUSSIAN I	<i>4 credits</i>
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
102	BEGINNING RUSSIAN II	<i>4 credits</i>
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
201	INTERMEDIATE RUSSIAN I	<i>3 credits</i>
Sequential. Prerequisite: 102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.		
202	INTERMEDIATE RUSSIAN II	<i>3 credits</i>
Sequential. Prerequisite: 102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.		
497	INDIVIDUAL READING IN RUSSIAN	<i>1-3 credits</i>
Prerequisite: 202 and permission of the department chair.		



Spanish (3580)

101	BEGINNING SPANISH I	<i>4 credits</i>
Sequential. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
102	BEGINNING SPANISH II	<i>4 credits</i>
Sequential. Prerequisite: 101 or equivalent. Acquisition of basic reading, speaking, writing and listening comprehension skills, with emphasis on development of self-expression in everyday situations, through culturally authentic media and texts.		
111	INTENSIVE BEGIN SPANISH I	<i>4 credits</i>
Sequential. Prerequisite: Minimum of two years of prior study of Spanish at the secondary level or the equivalent, or a satisfactory score on the UA Spanish Placement Examination, or permission of the instructor. Acquisition of basic reading, speaking, writing, and listening comprehension skills, with emphasis on development of self expression. Sequence covers the entire first year in one semester.		
112	INTENSIVE BEGIN SPANISH II	<i>4 credits</i>
Sequential. Prerequisite: Completion of 3580:101 with a grade of B or better, or completion of 3580:111 with a grade of C or better, or a minimum of three years of prior study of Spanish at the secondary level or the equivalent and/or a satisfactory score on the UA Spanish Placement Examination, or permission of the instructor. Acquisition of basic reading, speaking, writing, and listening comprehension skills, with emphasis on development of self expression. Sequence covers the entire first year in one semester.		
201	INTERMEDIATE SPANISH I	<i>3 credits</i>
Sequential. Prerequisite: 102 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.		
202	INTERMEDIATE SPANISH II	<i>3 credits</i>
Sequential. Prerequisite: 201 or equivalent. Continuing acquisition of competence in reading, writing, speaking, and listening comprehension through use of culturally authentic materials, with emphasis on developing accuracy and self-expression in a wide range of situations.		
211	INTENSIVE INTERMD SPANISH I	<i>3 credits</i>
Prerequisites: completion of 3580:102 with a grade of B or better, or completion of 3580:112 with a grade of C or better, or minimum of three years of prior study of Spanish at the secondary level or the equivalent and/or a satisfactory score on the UA Spanish Placement Examination, or permission of the instructor. Continuing acquisition of reading, speaking, writing, and listening comprehension skills, with emphasis on development of self expression. Sequence covers entire year in one semester.		
212	INTENSIVE INTERMD SPANISH II	<i>3 credits</i>
Prerequisites: completion of 3580:201 with a grade of B or better, or completion of 3580:211 with a grade of C or better, or minimum of three years of prior study of Spanish at the secondary level or the equivalent and/or a satisfactory score on the UA Spanish Placement Examination, or permission of the instructor. Continuing acquisition of reading, speaking, writing, and listening comprehension skills, with emphasis on development of self expression. Sequence covers entire second year in one semester.		
301	SPANISH CONVERSATION	<i>3 credits</i>
Prerequisite: 202 or equivalent. Development of oral expression, listening comprehension and conversational ability.		
302	SPANISH COMPOSITION	<i>3 credits</i>
Prerequisite: 202 or equivalent. Development of writing skills through intensive practice and study of written expression in Spanish. Conducted in Spanish.		
303	SPANISH GRAMMAR	<i>3 credits</i>
Prerequisite: 202 or equivalent. Post-intermediate review and study of grammar and basic principles of grammatical analysis. Conducted in Spanish.		
311	SPANISH/SPANISH-AM CULT EXPR	<i>1-6 credits</i>
Prerequisite: Permission of department chair. Student's residence and study in a Spanish-speaking country. Repeatable once with different content, 12 credits maximum. Only 9 credits may be applied to Spanish minor.		
340	INTRO TO SPANISH & SP-AMER LIT	<i>3 credits</i>
Prerequisite: two of the group 301, 302, and 303 or permission of instructor. Reading and discussion of Spanish and Spanish-American literature of all genres. Introduction to the fundamentals of literary criticism and literary movements. Conducted in Spanish.		
350	LITERATURE OF SPAN-AM IN TRANS	<i>3 credits</i>
Prerequisites: 3400:210 or 3400:221. (May not be taken for credit toward the Spanish major or minor.) Reading, discussion of novels, short stories of major Spanish-American authors. Texts and discussion in English.		

351	SPANISH FOR PROFESSIONALS: BUS	<i>3 credits</i>
Prerequisites: 301, 302, and 303 or permission of instructor. Study of business terminology as well as cultural factors affecting the conduct of business with Hispanic nations and populations. Conducted in Spanish.		
401	ADVANCED SPANISH CONVERSATION	<i>3 credits</i>
Prerequisites: 301 and either 302 or 303 or permission of instructor. Development of speaking skills at a level beyond that achieved in 301. Conducted in Spanish.		
402	ADVANCED SPANISH COMPOSITION	<i>3 credits</i>
Prerequisite: 302 and either 301 or 303 or permission of instructor. Development of writing skills at a level beyond that achieved in 302. Conducted in Spanish.		
403	ADVANCED GRAMMAR	<i>3 credits</i>
Prerequisites: 303 and either 301 or 302 or permission of instructor. Advanced study of Spanish syntax and grammatical analysis. Conducted in Spanish.		
404	INTRO: SPANISH LINGUISTICS	<i>4 credits</i>
Prerequisites: 401, 402, and 403 or permission of instructor. 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.		
405	SPANISH LINGUISTICS: PHONOLOGY	<i>4 credits</i>
Prerequisite: 401, 402, and 403 or permission of instructor. Descriptive study of Spanish phonetics and morphology, comparison of Spanish and English sounds, historical aspects, regional accents and sociolinguistic variation. Conducted in Spanish.		
406	SPANISH LINGUISTICS: SYNTAX	<i>4 credits</i>
Prerequisite: 401, 402, and 403 or permission of instructor. Descriptive study of Spanish syntax; introduction to theories of grammar; overview of Spanish semantics and pragmatics. Conducted in Spanish.		
407	SURVEY OF HISPANIC LIT: SPAIN	<i>4 credits</i>
Prerequisites: 340 and two of the group 401, 402, 403 or permission of instructor. Study of the most representative works and literary movements in Spain from the Middle Ages to the present. Conducted in Spanish.		
408	SURVEY OF HISPANIC LIT: SP-AM	<i>4 credits</i>
Prerequisites: 340 and two of the group 401, 402, 403 or permission of instructor. Study of the most representative works and literary movements in Spanish-America from the Discovery to the present. Conducted in Spanish.		
409	CULTURAL MANIF MED & REN SPAIN	<i>4 credits</i>
Prerequisite: 407 or 408 or permission of instructor. Comparative study of representative artistic and literary works of the Medieval and Renaissance periods. Conducted in Spanish.		
410	SPANISH APPLIED LINGUISTICS	<i>4 credits</i>
Prerequisites: 401, 402, and 403 or permission of instructor. This course discusses current theories of second language acquisition and their implications for the learning of problematic Spanish structures.		
411	SPAIN DURING THE BAROQUE PRD	<i>4 credits</i>
Prerequisite: 407 or 408 or permission of instructor. A comparative study of the different cultural manifestations during the 17th century in Spain. Conducted in Spanish.		
412	CERVANTES: DON QUIJOTE	<i>4 credits</i>
Prerequisite: 407 or 408 or permission of instructor. Reading and analysis of Don Quijote as the first modern novel in the historical context of Renaissance and Baroque esthetics. Conducted in Spanish.		
413	DON JUAN MYTH IN SPAN CULTURE	<i>4 credits</i>
Prerequisite: 407 or 408 or permission of instructor. Study of the evolution of the Don Juan myth from its origins to its latest versions in the 20th century.		
414	CULT POL IN THE RIVER PLATE	<i>4 credits</i>
Prerequisite: 407 or 408 or permission of instructor. This course will examine the military dictatorships of the seventies and eighties in Argentina and Uruguay by looking at how these regimes affected culture.		
416	REPRESENTING RLTY 19TH CENT SP	<i>4 credits</i>
Prerequisite: 407 or 408 or permission of instructor. A comparative study of the major literary and artistic movements in Spain from Realism to Modernism. Conducted in Spanish.		
418	20TH CENT SP: AV-GAR LIT & ART	<i>4 credits</i>
Prerequisite: 407 or 408 or permission of instructor. A comparative study of the major literary and artistic movements in Spain which illustrate the primary cultural changes of the century. Conducted in Spanish		
419	SPANISH CIVIL WAR&CULT IMPACT	<i>4 credits</i>
Prerequisite: 407 or 408 or permission of instructor. Study the impact of the Civil War on Spanish culture.		
422	ST: SPEC LANG SKL, CULT, LIT	<i>1-4 credits</i>
Prerequisite: 407 or 408 or permission of instructor. (May be repeated) Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.		
425	20TH CENTURY SPANISH-AM NOVEL	<i>4 credits</i>
Prerequisite: 407 or 408 or permission of instructor. Reading and discussion of representative contemporary Latin American novels. Conducted in Spanish.		
427	LATINO CULTURES IN THE USA	<i>4 credits</i>

Prerequisite: 407 or 408 or permission of instructor. Inquiry into the Latino experience of displacement and marginality through the analysis of cultural manifestations in the U.S.A. Conducted in Spanish.

430	WOMEN IN 20TH CENTURY HISP LIT	<i>4 credits</i>
Prerequisite: 407 or 408 or permission of instructor. 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.		
431	HISPANIC CULTURE: SPAIN	<i>4 credits</i>
Prerequisite: Two of the group 401, 402, 403 or permission of instructor. Study of society, customs, history, art, music, etc. of Spain, from a Hispanic perspective. Conducted in Spanish.		
432	HISPANIC CULTURE: SPANISH AMER	<i>4 credits</i>
Prerequisite: Two of the group 401, 402, 403 or permission of instructor. Overview and historical survey of Spanish American civilization and culture. Taken as 532, does not count toward the M.A. in Spanish. Conducted in Spanish.		
497	INDIVIDUAL READING IN SPANISH	<i>1-3 credits</i>
Prerequisite: 407 or 408 and departmental permission.		
503	ADVANCED GRAMMAR	<i>3 credits</i>
Prerequisite: graduate status or permission of department. Advanced study of Spanish syntax and grammatical analysis. Taken as 503, does not count toward the M.A. in Spanish. Conducted in Spanish.		
504	INTRO: SPANISH LINGUISTICS	<i>4 credits</i>
Prerequisite: 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.		
505	SPANISH LINGUISTICS: PHONOLOGY	<i>4 credits</i>
Prerequisite: 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.		
506	SPANISH LINGUISTICS: SYNTAX	<i>4 credits</i>
Prerequisite: 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.		
507	SURVEY OF HISPANIC LIT: SPAIN	<i>4 credits</i>
Prerequisite: graduate status or permission of department. Historical overview of representative works and literary movements in Spain. Taken as 507, does not count toward Spanish M.A. Conducted in Spanish.		
508	SURVEY OF HISPANIC LIT: SP-AM	<i>4 credits</i>
Prerequisite: graduate status or permission of department. Historical overview of representative works and literary movements in Spanish America. Taken as 508, does not count toward Spanish M.A. Conducted in Spanish.		
509	CULTURAL MANIF MED & REN SPAIN	<i>4 credits</i>
Prerequisite: graduate status or permission of department. Comparative study of representative artistic and literary works of the Medieval and Renaissance periods. Conducted in Spanish.		
510	SPANISH APPLIED LINGUISTICS	<i>4 credits</i>
Prerequisite: graduate status or permission of department. This course discusses current theories of second language acquisition and their implications for the learning of problematic Spanish structures.		
511	SPAIN DURING THE BAROQUE PRD	<i>4 credits</i>
Prerequisite: graduate status or permission of department. A comparative study of the different cultural manifestations during the 17th century in Spain. Conducted in Spanish.		
512	CERVANTES: DON QUIJOTE	<i>4 credits</i>
Prerequisite: graduate status or permission of department. Reading and analysis of Don Quijote as the first modern novel in the historical context of Renaissance and Baroque esthetics. Conducted in Spanish.		
513	DON JUAN MYTH IN SPAN CULTURE	<i>4 credits</i>
Prerequisite: 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.		
514	CULT POL IN THE RIVER PLATE	<i>4 credits</i>
Prerequisite: graduate status or permission of department. This course will examine the military dictatorships of the seventies and eighties in Argentina and Uruguay by looking at how these regimes affect culture.		
516	REPRESENTING RLTY 19TH CENT SP	<i>4 credits</i>
Prerequisite: graduate status or permission of department. A comparative study of the major literary and artistic movements in Spain from Realism to Modernism. Conducted in Spanish.		
518	20TH CENT SP: AV-GAR LIT & ART	<i>4 credits</i>
Prerequisite: 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 century. Conducted in Spanish.		
519	SPANISH CIVIL WAR&CULT IMPACT	<i>4 credits</i>
Prerequisite: graduate status or permission of department. Study of the impact of the Civil War on Spanish culture.		
522	ST: SPEC LANG SKL, CULT, LIT	<i>1-4 credits</i>
Prerequisite: graduate status or permission of department. (May be repeated.) Development of specialized language skills or reading of significant works of literature or culture not studied in other courses.		
525	20TH CENTURY SPANISH-AM NOVEL	<i>4 credits</i>

Prerequisite: graduate status or permission of department. Reading and discussion of representative contemporary Latin American novels. Conducted in Spanish.

527	LATINO CULTURES IN USA	<i>4 credits</i>
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Prerequisite: 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.

530	WOMEN IN 20TH CENTURY HISP LIT	<i>4 credits</i>
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Prerequisite: 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.

531	HISPANIC CULTURE: SPAIN	<i>4 credits</i>
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Prerequisite: Two of the group 401, 402, 403 or permission of instructor. Study of society, customs, history, art, music, etc. of Spain, from a Hispanic perspective. Conducted in Spanish.

532	HISPANIC CULTURE: SPANISH AMER	<i>4 credits</i>
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Prerequisite: graduate status or permission of department. Overview and historical survey of Spanish American civilization and culture. Taken as 532, does not count toward the M.A. in Spanish. Conducted in Spanish.

661	SPANISH TEACHING PRACTICUM	<i>2 credits</i>
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Prerequisite: teaching, assistantship or permission. 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.

697	INDIV READING: SPANISH	<i>1-4 credits</i>
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Content of given individual reading program taken from course contests approved for graduate work in Spanish.

698	INDIVIDUAL READING IN SPANISH	<i>1-4 credits</i>
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Content of given individual reading program taken from course contests approved for graduate work in Spanish.



Philosophy (3600)

101	INTRODUCTION TO PHILOSOPHY	<i>3 credits</i>
Introduction to philosophic problems and attitudes through acquaintance with thoughts on some leading thinkers of Western tradition.		
120	INTRODUCTION TO ETHICS	<i>3 credits</i>
Introduction to problems of moral conduct through readings from the tradition and class discussions; nature of "good," "right," "ought" and "freedom."		
125	THEORY & EVIDENCE	<i>3 credits</i>
An investigation of the concept of evidence and the criteria for the evaluation of theories in various areas of study including the natural sciences, the social sciences and philosophy. The role of scientific information in the formation and justification of value judgments.		
170	INTRODUCTION TO LOGIC	<i>3 credits</i>
Introduction to logic and critical thinking. Includes such topics as meaning, informal fallacies, propositional logic, predicate and syllogistic logic and nature of induction.		
211	HISTORY OF ANCIENT PHILOSOPHY	<i>3 credits</i>
History and development of ancient Greek philosophy including Presocratics, Socrates, Plato, Aristotle, and Hellenistic philosophers. Readings of primary sources in translation.		
312	HISTORY OF MEDIEVAL PHILOSOPHY	<i>3 credits</i>
History of Western philosophy from end of Roman Empire to Renaissance. Major philosophers studied include St. Augustine, St. Anselm, Peter Abelard, St. Thomas Aquinas, Duns Scotus and William of Ockham. Readings from primary sources.		
313	HISTORY OF MODERN PHILOSOPHY	<i>3 credits</i>
Analysis of major philosophical issues of 17th and 18th Centuries from Descartes through Kant. Readings of primary sources in translation.		
323	ADVANCED TOPICS IN ETHICS	<i>3 credits</i>
(May be repeated with change of topic for a total of nine credits). An examination of selected topics in applied ethics and ethical theory, such as the ethics of cloning, evolutionary ethics, history of ethics and ethical issues from the Human Genome Project. Specific topics will be announced in the course schedule.		
324	SOCIAL & POLITICAL PHILOSOPHY	<i>3 credits</i>
An examination of the normative justification of social and political institutions and practices. Analysis of concepts such as rights, justice, equality, and political obligation from historical as well as contemporary points of view. Application to particular social issues covered.		
327	LAW AND MORALITY	<i>3 credits</i>
Nature of law examined from the perspective of the law's alleged obligation to be ethical and promote justice.		
329	PHILOSOPHIES OF INTERNATIONAL LAW	<i>3 credits</i>
Inquiry into the theories of utility of international law and the philosophical controversies surround them, e.g., international legal norms vs. international relations.		
331	PHILOSOPHY OF RELIGION	<i>3 credits</i>
Discussion and analysis of problems of theology, nature of religious experience, God's nature, existence, immortality, sin, faith, reason, holy revelation, and redemption.		
333	PHILOSOPHY OF SCI & RELIGION	<i>3 credits</i>
Survey of conflict, independence, and integration models of science and religion. Topics include: origin and nature of the universe, life, mind, value, meaning, science, religion.		
340	EASTERN PHILOSOPHY	<i>3 credits</i>
Examination and evaluation of philosophical traditions from India, China and Japan, including Hinduism, Buddhism, Taoism and Confucianism.		
350	PHILOSOPHY OF ART	<i>3 credits</i>
An examination of theories of the nature of art and the grounds of aesthetic evaluation. Analysis of such concepts as representation, form, content, expression, institution, convention, meaning and truth as they apply in the context of the arts.		
355	PHILOSOPHY OF FEMINISM	<i>3 credits</i>
Introduction to feminist critiques of, and alternatives to, traditional western philosophy, including topics in ethics, metaphysics, epistemology, and religion.		
361	BIOMEDICAL ETHICS	<i>3 credits</i>

The identification, analysis and evaluation of ethical issues arising most critically in the biomedical setting, e.g., abortion, termination of treatment, definition of death, IVF, AIDS.

362	BUSINESS ETHICS	<i>3 credits</i>
Basic moral theories, moral principles, and the decision- making process applied to issues in business.		
363	POLICE ETHICS	<i>3 credits</i>
Basic moral concepts and their application to the criminal justice system. Concerned with such issues as punishment, the use of force, and conflict resolution.		
364	COMPUTER ETHICS	<i>3 credits</i>
A critical examination of ethical issues arising in connection with computers and information technology, e.g., computer hacking, electronic privacy, and the regulation of Internet content.		
365	ENVIRONMENTAL ETHICS	<i>3 credits</i>
Examination of the moral relationships among human beings, other species, and their shared environment. Ethical aspects of agriculture, global warming, extinction, and wilderness.		
371	PHILOSOPHY OF MIND	<i>3 credits</i>
Nature of mind and the relationship between mind and body. Specific topics such as the limits of human reason, personal identity, the role of human thought in action and whether machines can think are also considered.		
392	INTERNSHIP IN PHILOSOPHY	<i>1-3 credits</i>
Prerequisite: 2.7 GPA and permission of instructor. Placement in appropriate public or private sector organization. Written assignments required. May repeat for maximum 6 credits.		
411	PLATO	<i>3 credits</i>
Prerequisite: 211 or permission of instructor. Detailed study of the origin and development of Plato's theory of forms and the related theories of knowledge, ethics and politics.		
414	AQUINAS	<i>3 credits</i>
Prerequisite: one course in philosophy or permission of instructor. An in depth examination of the philosophy of St. Thomas Aquinas covering his contributions in metaphysics, epistemology, ethics, political theory, and philosophical theology.		
415	AUGUSTINE	<i>3 credits</i>
Prerequisite: one course in philosophy or permission of instructor. An in depth examination of the philosophy of St. Augustine covering his contributions in metaphysics, epistemology, ethics, political theory, and philosophical theology.		
418	20TH CENT. ANALYTIC PHILOSOPHY	<i>3 credits</i>
Prerequisite: One course in philosophy or permission of instructor. Study of ideal and ordinary language movements in 20th century British and American philosophy. Deals with such figures as Russell, Carnap, Ayer, Moore, Wittgenstein, Ryle and Austen.		
421	PHILOSOPHY OF LAW	<i>3 credits</i>
Prerequisite: one course in philosophy or permission of instructor. Identification and critical evaluation of classic and contemporary theories and assumptions of law, including legal reasoning, justice, natural law, punishment, etc.		
424	EXISTENTIALISM	<i>3 credits</i>
Prerequisites: one course in philosophy or permission of instructor. In-depth inquiry into the thought of Kierkegaard, Jaspers, Heidegger, Satre, Tillich and other existentialists with their concern for the human condition.		
426	PHENOMENOLOGY	<i>3 credits</i>
Prerequisites: one philosophy course or permission of instructor. Inquiry into methodology of Husserl and Heidegger and their influence upon Western European and American thought.		
432	ARISTOTLE	<i>3 credits</i>
Prerequisites: 211 or permission of instructor. Detailed study of Aristotle's metaphysics, philosophy of nature, philosophy of mankind and ethics.		
434	KANT	<i>3 credits</i>
Prerequisite: 313 or permission of instructor. Study of Kantian system of thought and its relation to history of philosophy. Includes thorough investigation of one or more of Kant's philosophic works.		
461	NEUROETHICS	<i>3 credits</i>
Prerequisites: 120 or 361 or permission of instructor. Discussion and evaluation of contemporary theories of moral agency arising from developments in neuroscience.		
462	THEORY OF KNOWLEDGE	<i>3 credits</i>
Prerequisite: One course in philosophy or permission of instructor. Examination of nature of knowledge; theories of perception, conception and truth, problem of induction and relation of language to knowledge.		
464	PHILOSOPHY OF SCIENCE	<i>3 credits</i>
Prerequisite: One course in philosophy or permission of instructor. Nature of scientific inquiry, types of explanation, laws and causality, theoretical concepts and reality. Also considers critics of hypothetical-deductive view of science, e.g., Hanson and Kuhn.		
471	METAPHYSICS	<i>3 credits</i>
Prerequisite: One course in philosophy or permission of instructor. Theories about ultimate nature and ultimate explanation of reality. Uses readings from classical and contemporary sources.		
480	SEM: PHILOSOPHY	<i>3 credits</i>
(May be repeated, for additional credit, with change of topic). Prerequisite: one course in philosophy or permission of instructor. Varying philosophical topics not covered in regular course offerings.		

481	PHILOSOPHY OF LANGUAGE	<i>3 credits</i>
Prerequisite: One course in philosophy or permission of instructor. Contemporary philosophies about nature of language and its relation to reality and human thinking. Includes discussion of views of linguists such as Chomsky.		
490	SR HONORS PROJECT IN PHILOSOPHY	<i>3 credits</i>
Prerequisite: Senior standing in Honors Program or senior honors standing as Philosophy major, and permission of Philosophy Department Honors Preceptor. Research leading to completion of senior honors thesis involving original work under faculty supervision.		
497	IND ST: PHILOSOPHY	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisites: completion of required courses of philosophy major or permission of instructor and department head. Directed independent study of philosopher, philosophy or philosophical problem under guidance of selected faculty member. Subject matter determined by selected faculty member in consultation with student. Graduate credit requires significant additional work which may include additional research paper.		
511	PLATO	<i>3 credits</i>
Prerequisite: permission of instructor. Detailed study of the origin and development of Plato's Theory of Forms and the related theories of knowledge, ethics, and politics.		
514	AQUINAS	<i>3 credits</i>
Prerequisite: permission of instructor. An in depth examination of the philosophy of St. Thomas Aquinas covering his contributions in metaphysics, epistemology, ethics, political theory, and philosophical theology.		
515	AUGUSTINE	<i>3 credits</i>
Prerequisite: permission of instructor. An in depth examination of the philosophy of St. Augustine covering his contributions in metaphysics, epistemology, ethics, political theory, and philosophical theology.		
518	20TH CENT. ANALYTIC PHILOSOPHY	<i>3 credits</i>
Prerequisite: permission of instructor. Study of ideal and ordinary language movements in 20th century British and American philosophy. Deals with such figures as Russell, Carnap, Ayer, Moore, Wittgenstein, Ryle and Austen.		
521	PHILOSOPHY OF LAW	<i>3 credits</i>
Prerequisite: Permission of instructor. Identification and critical evaluation of classic and contemporary theories and assumptions of law, including legal reasoning, justice, natural law, punishment, etc.		
524	EXISTENTIALISM	<i>3 credits</i>
Prerequisites: permission of instructor. In-depth inquiry into the thought of Kierkegaard, Jaspers, Heidegger, Satre, Tillich and other existentialists with their concern for the human condition.		
526	PHENOMENOLOGY	<i>3 credits</i>
Prerequisite: permission of instructor. In-depth inquiry into methodology of Husserl and Heidegger and their influence upon Western European and American thought.		
532	ARISTOTLE	<i>3 credits</i>
Prerequisite: permission of instructor. Detailed study of Aristotle's metaphysics, philosophy of nature, philosophy of mankind and ethics.		
534	KANT	<i>3 credits</i>
Prerequisite: permission of instructor. Study of Kantian system of thought and its relation to history of philosophy. Includes thorough investigation of one or more of Kant's philosophical works.		
561	NEUROETHICS	<i>3 credits</i>
Prerequisites: Permission of instructor. Discussion and evaluation of contemporary theories of moral agency arising from developments in neuroscience.		
562	THEORY OF KNOWLEDGE	<i>3 credits</i>
Prerequisite: permission of instructor. Examination of nature of knowledge; theories of perception, conception and truth, problem of induction and relation of language to knowledge.		
564	PHILOSOPHY OF SCIENCE	<i>3 credits</i>
Prerequisite: permission of instructor. Nature of scientific inquiry, types of explanation, laws and causality, theoretical concepts and reality. Also considers critics of hypothetical-deductive view of science, e.g., Hanson and Kuhn.		
571	METAPHYSICS	<i>3 credits</i>
Prerequisite: permission of instructor. Theories about ultimate nature and ultimate explanation of reality. Uses readings from classical and contemporary sources.		
580	SEM: PHILOSOPHY	<i>3 credits</i>
(May be repeated, for additional credit, with change of topic). Prerequisite: permission of instructor. Varying philosophical topics not covered in regular course offerings.		
581	PHILOSOPHY OF LANGUAGE	<i>3 credits</i>
Prerequisite: permission of instructor. Contemporary philosophies about nature of language and its relation to reality and human thinking. Includes discussion of views of linguists such as Chomsky.		
665	ETHICS OF SCIENCE	<i>3 credits</i>
Examination of the foundational issues surrounding ethics and science as well as consideration of applied ethical issues of scientists, science, new technologies and society.		



Physics (3650)

130	DESCRIPTIVE ASTRONOMY	<i>4 credits</i>
Qualitative introduction to astronomy, intended primarily as a first science course for non-science majors. Includes laboratory and observational activities.		
133	MUSIC, SOUND & PHYSICS	<i>4 credits</i>
Qualitative introduction to the physics of sound, its properties, perception and reproduction, including acoustical principles of musical instruments. Laboratory and observational activities included.		
137	LIGHT	<i>4 credits</i>
Introductory, qualitative course dealing with the nature of light and the interaction of light with various materials to produce common visual effects. Laboratory activities provide experience in scientific investigation.		
261	PHYSICS FOR LIFE SCIENCES I	<i>4 credits</i>
Prerequisites: high school algebra, trigonometry or 3450:149 as corequisite or permission. Introductory course for professional work in biology and health professions and services. Emphasizes life science applications. Mechanics: laws of motion, force, torque, work, energy, power; properties of matter: gases, liquids, solids, fluid mechanics. Includes laboratory activities.		
262	PHYSICS FOR LIFE SCIENCES II	<i>4 credits</i>
Prerequisite: 261. Laws of thermodynamics, kinetic theory. Wave phenomena: sound, light, optics; electricity and magnetism; atomic and nuclear physics; radioactivity. Includes laboratory activities.		
267	LIFE SCIENCE PHYSICS COMP I	<i>1 credits</i>
Corequisites: 261 (with 267); 262 (with 268). Optional companion courses to 261,2 provides additional computational experience in applications of physics to life sciences, emphasizing use of algebra and trigonometry. Particularly recommended for student with modest mathematical preparation.		
268	LIFE SCIENCE PHYSICS COMP II	<i>1 credits</i>
Corequisites: 261 (with 267); 262 (with 268). Optional companion courses to 261,2 provides additional computational experience in applications of physics to life sciences, emphasizing use of algebra and trigonometry. Particularly recommended for student with modest mathematical preparation.		
291	ELEMENTARY CLASSICAL PHYSICS I	<i>4 credits</i>
Prerequisite: Completion of 3450:221 with a passing grade. Introductory physics for students of science and engineering. Classical kinematics and dynamics as related to contemporary physics. Oscillations, thermodynamics. Vectors and some calculus introduced as needed. Includes laboratory activities.		
292	ELEMENTARY CLASSICAL PHYS II	<i>4 credits</i>
Prerequisite: Completion of 291 with a passing grade. Fluid mechanics, mechanical and electromagnetic waves and wave phenomena, basic laws of electromagnetism, interference and diffraction, coherence, geometrical and physical optics. Includes laboratory activities.		
293	PHYSICS COMPUTATIONS I	<i>1 credits</i>
Corequisite: 291 (with 293); 292 (with 294). Optional companion courses to 291,2 provides experience in problem solving, and elaborates application of calculus to simple physical phenomena. Particularly recommended for a freshman and for student with modest preparation in mathematics or physical sciences.		
294	PHYSICS COMPUTATIONS II	<i>1 credits</i>
Corequisite: 291 (with 293); 292 (with 294). Optional companion courses to 291,2 provides experience in problem solving, and elaborates application of calculus to simple physical phenomena. Particularly recommended for a freshman and for student with modest preparation in mathematics or physical sciences.		
301	ELEMENTARY MODERN PHYSICS	<i>3 credits</i>
Prerequisite: 292 or permission of instructor. Special relativity, introduction to quantum physics, hydrogen atom and complex atoms, atomic spectra, topics in nuclear and solid-state physics.		
322	INTERMEDIATE LABORATORY I	<i>3 credits</i>
Prerequisite: 262 or 292. Laboratory course stressing measurement techniques with contemporary laboratory apparatus. Experiment design, instrument calibration and reporting emphasized. Modern physics experiments and measurement of fundamental natural constants.		
323	INTERMEDIATE LABORATORY II	<i>3 credits</i>
Prerequisite: 262 or 292. Laboratory course stressing measurement techniques with contemporary laboratory apparatus. Experiment design, instrument calibration and reporting emphasized. Modern physics experiments and measurement of fundamental natural constants.		
340	THERMAL PHYSICS	<i>3 credits</i>

Prerequisite: 262 or 292. Basic principles of thermal and statistical physics. Ensembles, laws of thermodynamics, equilibrium, irreversibility, equipartition theorem, canonical distribution, Maxwell distribution, phase changes, cyclic processes, transport processes.

350	MODELING & SIMULATION	<i>4 credits</i>
Prerequisites: 292, or 262; one elementary course in Computer Science such as 3460:208 or 209 or permission of instructor. Interdisciplinary course stressing modeling of natural phenomena using fundamental principles and their simulation. Topics may include growth phenomena, fault propagation, kinetics, chemical reactions, wave phenomena.		
399	UNDERGRADUATE RESEARCH	<i>1-6 credits</i>
(May be repeated) Prerequisite: permission of instructor. Participation in current research project in department under supervision of faculty member.		
401	EVERYDAY PHYSICS	<i>4 credits</i>
Prerequisite: permission of instructor. College-level physics content for future teachers. Inquiry, discovery, activities, discussion, and experiential learning take place in a laboratory/embedded-lecture environment.		
406	OPTICS	<i>3 credits</i>
Prerequisites: 291, 350 and 3450:335. Propagation, reflection and refraction of electromagnetic waves, superposition, polarization, interference and interferometry, Fresnel and Fraunhofer diffraction, Fourier optics, coherence theory and quantum optics.		
431	MECHANICS I	<i>3 credits</i>
Prerequisites: 291, 350 and 3450:335. Mechanics at intermediate level. Newtonian mechanics, motion of a particle in one dimension, central field problem, system of particles, conservation laws, rigid bodies, and gravitation.		
432	MECHANICS II	<i>3 credits</i>
Prerequisite: 431. Advanced mechanics at the senior or beginning graduate level, moving coordinate systems, mechanics of continuous media, Lagrange's equations, tensor algebra and stress analysis, rotation of rigid bodies, vibration theory.		
436	ELECTROMAGNETISM I	<i>3 credits</i>
Prerequisites: 291, 350, 3450:335 or permission of instructor. Electricity and magnetism at intermediate level. Electrostatics and magnetostatics, electric field, scalar potential, dielectrics, Laplace's and Poisson's equations, currents, magnetic field, vector potential, magnetic materials, inductance.		
437	ELECTROMAGNETISM II	<i>3 credits</i>
Prerequisite: 436. Special relativity, four vectors, Maxwell's equations in covariant form; propagation, reflection and refraction of electromagnetic waves; multipole radiation.		
441	QUANTUM PHYSICS I	<i>3 credits</i>
Prerequisites: 301, 350 and 3450:335. Introduction to quantum theory, Schrödinger equation, observables, angular momentum, perturbation theory, variational principle, bound states, scattering theory, radiative interactions, spin and the Pauli Principle.		
442	QUANTUM PHYSICS II	<i>3 credits</i>
Prerequisite: 441. Applications of quantum mechanics to atomic, nuclear and solid state physics. Tunneling and alpha decay, periodic potential, hydrogen and helium atoms, interatomic forces, quantum statistics.		
451	ADVANCED LABORATORY I	<i>3 credits</i>
Prerequisite: 323 or permission of instructor. Experimental techniques, applicable to research-type projects in contemporary physics. FT-IR spectroscopy, optical spectroscopy, lasers and thin-film growth and characterization.		
452	ADVANCED LABORATORY II	<i>3 credits</i>
Prerequisite: 323 or permission of instructor. Experimental projects applicable to contemporary physics. Diode and dye lasers, NMR, SPM, chaos, electron tunneling and fiber optics.		
470	INTRO TO SOLID-STATE PHYSICS	<i>3 credits</i>
Prerequisite: 441 or permission of instructor. Account of basic physical processes occurring in solids, with emphasis on fundamental relation between these processes and periodicity of crystalline lattice.		
481	METHODS OF MATH PHYSICS I	<i>3 credits</i>
Prerequisites: 292, 350, 3450:335 and senior or graduate standing in a physical science or engineering. 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.		
482	METHODS OF MATH PHYSICS II	<i>3 credits</i>
Prerequisites: 292, 3450:335 and senior or graduate standing in a physical science or engineering. 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.		
488	SEL T: PHYSICS	<i>1-4 credits</i>
(May be repeated) Prerequisite: permission. Consideration of selected topics, procedures, techniques, materials or apparatus of current interest in physics.		
490	W: PHYSICS	<i>1-4 credits</i>
(May be repeated) Group studies of special topics in physics. May not be used to meet undergraduate or graduate major requirements in physics. May be used for elective credit only.		
497	INDP STUDY: PHYSICS	<i>1-4 credits</i>

(May be repeated) Prerequisite: permission. Further investigations of various selected topics in physics, under guidance of faculty member.

498	PHYSICS COLLOQUIUM	<i>1 credits</i>
Lectures on current research topics in physics by invited speakers. May be repeated but only one credit counts toward the M.S. Degree. Offered on a credit/noncredit basis only.		
501	EVERYDAY PHYSICS	<i>4 credits</i>
Prerequisite: permission of instructor. College-level physics content for future teachers. Inquiry, discovery, activities, discussion, and experiential learning take place in a laboratory/embedded-lecture environment.		
506	PHYSICAL OPTICS	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Propagation, reflection, and refraction of electromagnetic waves, superposition, polarization, interference and interferometry, Fresnel and Fraunhofer diffraction, Fourier optics, coherence theory, and quantum optics.		
531	MECHANICS I	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Mechanics at intermediate level. Newtonian mechanics, motion of a particle in one dimension, central field problem, system of particles, conservation laws, rigid bodies, gravitation.		
532	MECHANICS II	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Advanced mechanics at the senior or beginning graduate level, moving coordinate systems, mechanics of continuous media. Lagrange's equations, tensor algebra and stress analysis, rotation or rigid bodies, vibration theory.		
536	ELECTROMAGNETISM I	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Electricity and magnetism at intermediate level. Electrostatics and magnetostatics, electric field, scalar potential, dielectrics, Laplace's and Poisson's equations, current, magnetic field, vector potential, magnetic materials, inductance.		
537	ELECTROMAGNETISM II	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Special relativity, four vectors, Maxwell's equations in covariant form; propagation, reflection and refraction of electromagnetic waves; multipole radiation.		
541	QUANTUM PHYSICS I	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Introduction to quantum theory, Schrodinger equation, observables, angular momentum, perturbation theory, variational principle, bound states, scattering theory, radiative interactions, spin and the Pauli Principle.		
542	QUANTUM PHYSICS II	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Applications of quantum mechanics to atomic, nuclear and solid state physics. Tunneling and alpha decay, periodic potential, Hydrogen and Helium atoms, interatomic forces, quantum statistics.		
551	ADVANCED LABORATORY I	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Experimental techniques applicable to research-type projects in contemporary physics. FT-IR spectroscopy, optical spectroscopy, lasers, SPM, and thin-film growth and characterization.		
552	ADVANCED LABORATORY II	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Experimental projects applicable to contemporary physics. Diode and dye lasers, laser feedback, chaos, NMR, electron tunneling, and fiber optics.		
556	TECHNIQUES OF PHYSICS INSTRUCT	<i>1 credits</i>
Teaching assistants are introduced to current research in learning physics, shown applications for their labroom, and trained in skills needed as a laboratory teaching assistant.		
570	INTRO TO SOLID-STATE PHYSICS	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Account of basic physical processes occurring in solids, with emphasis on fundamental relation between these processes and periodicity of crystalline lattice.		
581	METHODS OF MATH PHYSICS I	<i>3 credits</i>
Prerequisite: admission to 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.		
582	METHODS OF MATH PHYSICS II	<i>3 credits</i>
Prerequisite: admission to 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.		
588	SEL T: PHYSICS	<i>1-4 credits</i>
(May be repeated) Prerequisite: permission. Consideration of selected topics, procedures, techniques, materials or apparatus of current interest in physics.		
590	W: PHYSICS	<i>1-4 credits</i>
(May be repeated.) Prerequisite: permission. Further investigations of various selected topics in physics, under guidance of faculty member.		
597	INDP STUDY: PHYSICS	<i>1-4 credits</i>
(May be repeated.) Prerequisite: permission. Further investigations of various selected topics in physics, under guidance of faculty member.		

598	PHYSICS COLLOQUIUM	<i>1 credits</i>
Lectures on current research topics in physics by invited speakers. May be repeated, but only one credit counts toward M.S. degree. Credit/Noncredit.		
605	COMP PHY NUM SOLUTN PHY PR I	<i>3 credits</i>
Prerequisite: permission. Review of FORTRAN and basic topics in computer science. Numerical solutions to physics problems, including Newton's and Schrodinger's equations. Treatment and reduction of experimental data, plotting, simulation.		
606	COMP PHY NUM SOLUTN PHY PR II	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Data reduction, Calcomp plotting, comparison of theoretical models with data, linear and non-linear least squares curve-fitting. May accommodate scientific problems of individual interest.		
615	ELECTROMAGNETIC THEORY I	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Electrostatics and 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	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Scattering and diffraction, plasma physics, special theory of relativity, dynamics of relativistic particles in fields, collisions of charged particles, radiation from moving charges, bremsstrahlung, multipole fields.		
625	QUANTUM MECHANICS I	<i>3 credits</i>
Prerequisite: admission to 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-Gordon coefficients, perturbation theory, scattering, transition probabilities.		
626	QUANTUM MECHANICS II	<i>3 credits</i>
Prerequisite: 625. Foundations of relativistic quantum mechanics. Klein-Gordon and Dirac equations, spin-zero and spin-1/2 particles in electromagnetic field, second quantization of bosons and fermions, superfluidity and super conductivity.		
641	LAGRANGIAN MECHANICS	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Principle of least action and Lagrangian equation of motion, conservation laws, integration of equation of motion, collisions, small oscillations, Hamilton's equations, canonical transformations.		
661	STATISTICAL MECHANICS	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Fundamental principles of statistical mechanics, Gibbs, Fermi and Bose Statistics, solids, liquids, gases, phase equilibrium, chemical reactions.		
662	THERMO&STATISTICL MECHANICS II	<i>3 credits</i>
See department for course description.		
685	SOLID-STATE PHYSICS I	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Theory of physics of crystalline solids. Properties of reciprocal lattice and Bloch's theorem. Lattice dynamics and specific heat. Electron states; cellular method, tight-binding method, Green's function method.		
686	SOLID-STATE PHYSICS II	<i>3 credits</i>
Prerequisite: admission to Physics Master's program or permission. Orthogonalized plane and pseudo potentials. Electron-electron interaction; screening by impurities. Friedel sum rule and plasma oscillations. Dynamics of electrons, transport properties and Fermi surface.		
689	SP: THEORETICAL PHYSICS	<i>1-4 credits</i>
(May be repeated.) Prerequisite: permission. Intended to facilitate expansion of particular areas of interest in theoretical physics, by consultation with faculty member and independent study beyond available course work.		
691	SEM: THEORETICAL PHYSICS	<i>1-3 credits</i>
(May be repeated.) Prerequisite: permission.		
697	GRADUATE RESEARCH IN PHYSICS	<i>1-5 credits</i>
Prerequisite: permission. Candidates for M.S. degree may obtain up to five credits for faculty supervised research projects. Grades and credit received at completion of such projects.		
698	ST: PHYSICS	<i>1-4 credits</i>
Prerequisite: permission. Enables student who needs information in special areas, in which no formal course is offered, to acquire knowledge in these areas.		
699	MASTERS THESIS	<i>1 credits</i>
Prerequisite: permission. With approval of department, one credit may be earned by candidate for M.S. degree upon satisfactory completion of a master's thesis.		
710	SURFACE PHYSICS	<i>3 credits</i>
Prerequisite: 470. An interdisciplinary course stressing the fundamentals and applications of physics at surfaces, including corrosion, catalysis, adhesion, and tribology.		
769	CRIT PHENOMENA & PHASE TRANSTN	<i>3 credits</i>
Prerequisites: 625, 641, 661; or permission of instructor. Modern theory of critical phenomena. Landau theory. Spin systems, binary mixtures, polymers and liquid crystals. Multicomponent systems. Multicritical points. Renormalization. Epsilon-expansions of critical exponents.		

(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.



Political Science (3700)

100	GOVERNMENT & POLITICS IN US	<i>4 credits</i>
Examination of American political system with emphasis on fundamental principles, ideas, institutions and processes of modern government. Lecture and discussion sections (day classes only).		
150	WORLD POLITICS & GOVERNMENT	<i>3 credits</i>
Introduction to international politics and an examination of the governments and foreign policies of selected states from a comparative perspective.		
201	INTRO TO POLITICAL RESEARCH	<i>3 credits</i>
Introduction to the research process in political science through an introduction to the logic of social science inquiry and contemporary techniques of analysis.		
210	STATE & LOCAL GOVT & POLITICS	<i>3 credits</i>
Examination of institutions, processes and intergovernmental relations at state and local levels.		
300	COMPARATIVE POLITICS	<i>4 credits</i>
Introduction to comparative political analysis; description of political systems of Great Britain, France, Germany and Soviet Union; contrast between democracy and totalitarianism.		
302	AMERICAN POLITICAL IDEAS	<i>3 credits</i>
Study of major thinkers and writers of American political thought.		
303	INTRO TO POLITICAL THOUGHT	<i>3 credits</i>
Survey of major ideas and concepts of Western political theory from pre-Socrates through period of Enlightenment.		
304	MODERN POLITICAL THOUGHT	<i>3 credits</i>
Examination of central concepts of political thought from 19th Century to present. Modern liberalism, communism, fascism and totalitarianism emphasized.		
310	INTERNATIONAL POLITICS & INS	<i>3 credits</i>
Relations among nations examined in political context.		
311	DEVELOPING STATES IN WORLD POL	<i>3 credits</i>
Examines how developing states are conditioned by the global system and how they attempt to modify it.		
321	EUROPEAN POLITICS	<i>3 credits</i>
Description and analysis of government and politics of France, Germany, Italy, the United Kingdom, and Russia, with appropriate references to the European Union.		
326	POLITICS OF DEVELOPING NATIONS	<i>3 credits</i>
General introduction to concepts and theories of political development and political institutions, elite-recruitment and political processes of selected emerging nations.		
328	AMERICAN FOREIGN POLICY PROC	<i>3 credits</i>
Examination of American foreign policy-making process; public opinion and other limitations on policy; specific contemporary problems in selected foreign policy areas.		
334	LAW, MEDIATION, AND VIOLENCE	<i>3 credits</i>
A critical analysis of the practical challenges central to learning to better prevent, resolve, or reduce the harms associated with conflict.		
335	LAW & SOCIETY	<i>3 credits</i>
This course will examine how law constructs and constrains political conflict, and how legal institutions mediate, reinforce, and challenge existing power relationships.		
336	HOMELAND SECURITY POLICY & PRC	<i>3 credits</i>
The course will focus on the topic of homeland security, an area that has received a great deal of attention following the tragic events of September 11, 2001.		
337	TERRORISM: PRPTS, PLTCS & RSPN	<i>3 credits</i>
Survey of terrorist organizations, political implications of terrorism, and governmental response to terrorism.		
339	TERRORISM AND THE CONSTITUTION	<i>3 credits</i>
Primary goals include learning about the balance courts try to strike in safeguarding public safety and respect for personal freedom in a constitutional republic.		
341	THE AMERICAN CONGRESS	<i>3 credits</i>
Examination of structure and function of Congress, with comparative materials on legislative process on all levels. Presidential and congressional conflict examined.		
345	WORLD POLITICS IN FILM	<i>3 credits</i>

This course examines the political meaning and content of films. Themes investigated include war, the nuclear age and its consequences, postindustrial society, the future, and unemployment.

346	AMERICAN POLITICS IN FILM	<i>3 credits</i>
Examines the portrayal and representation of American politics through cinema. Emphasis on the positive and negative roles that movies play in educating the public.		
350	THE AMERICAN PRESIDENCY	<i>3 credits</i>
The presidency as focal point of politics, policy and leadership in American political system.		
351	INSIDE THE WHITE HOUSE	<i>3 credits</i>
The course looks behind the curtain at the inner-workings of the White House. Topics include: physical structure of the White House, travel, protection, and staff.		
352	WEAPONS OF MASS DESTRUCTION	<i>3 credits</i>
An exploration of the various weapons of mass destruction available to terrorists and other potential enemies with an emphasis on the challenge America faces in responding to such threats.		
353	FUTURE INTERNATIONAL THREATS	<i>3 credits</i>
A study of future threats through the use of scenario construction and future projections.		
360	THE JUDICIAL PROCESS	<i>3 credits</i>
Role of police, lawyers, courts and judges in context of American political process. Structure and process of judicial policy making and limitations on judicial power.		
361	POLITICS OF THE CRIM JUST SYS	<i>3 credits</i>
Examines the impact of the political process and political institutions on criminal law and policy.		
363	CRIME, PUN, POL: A COMP PERSP	<i>3 credits</i>
Comparative study of the structures, practices, power relationships, and politics in various criminal justice systems.		
370	PUBLIC ADMN: CONCEPTS & PRACTS	<i>4 credits</i>
Examines current administrative theories and their application in public bureaucracies. Emphasis is placed on practices to improve the quality of public sector administration.		
375	WOMEN IN POLITICS	<i>3 credits</i>
Course examines the past, present, and future role of women in politics.		
381	STATE POLITICS	<i>3 credits</i>
Analysis of the state political process in terms of its capacity to deal with a wide range of socioeconomic problems. Special emphasis on legislators, administrators, parties and interest groups.		
391	HONORS IN POLITICAL SCIENCE	<i>3 credits</i>
Prerequisites: at least 17 credits and a 3.25 average in political science and permission of adviser.		
392	SEL T: POLITICAL SCIENCE	<i>1-3 credits</i>
(May be repeated, but no more than three credits can be applied to major in political science) Topics of substantial current importance, specialized topics within political science or experimental courses.		
395	INTERN: GOVERNMENT & POLITICS	<i>2-9 credits</i>
(May be taken twice for a total of nine hours. No more than four credits may be applied toward major in political science.) Prerequisite: Three courses in political science at The University of Akron, 2.20 average in political science, and permission of instructor. Supervised individual placement with political office holders, party groups, governmental agencies, law firms and other organizations providing professional-level work.		
397	INDP STUDY: POLITICAL SCIENCE	<i>1-4 credits</i>
(May be repeated for a total of four credits) Prerequisites: senior standing, 3.00 grade-point average and permission of adviser.		
402	POLITICS AND THE MEDIA	<i>3 credits</i>
Examination of relationships between the press, the news media and political decision makers.		
403	MEDIA, CRIME & PUBLIC OPINION	<i>3 credits</i>
Examines the social construction of crime in mass media and how it impacts public, including fear of crime, beliefs about crime causation, and crime policy.		
405	POLITICS IN THE MIDDLE EAST	<i>3 credits</i>
The rise of the state system in the Middle East after World War I; an analysis of the socio-cultural, ideological forces influencing the political behavior of the people of the Middle East. In-depth study of selected political systems.		
410	INTERNATIONAL SECURITY POLICY	<i>3 credits</i>
Prerequisite: At least one of the following: 310, or 3400:461, or permission. Introduction to political uses of military forces. Major focus on methodological, conceptual, and ethical dilemmas confronted in developing and implementing security policy.		
413	GLOBAL PUBLIC HEALTH THREATS	<i>3 credits</i>
An introduction to comparative global biological and public health security policy. Topics include: infectious disease outbreaks, bioterrorism, and potential "nano-terrorism."		
414	WEALTH AND POWER AMONG NATIONS	<i>3 credits</i>
Prerequisite: 310 or permission of instructor. Studies relationship between politics and economy; mesh theoretical perspectives with exploration of key empirical issues. Topics: trade, relations, unions, finance, development, aid, sanctions.		

422	UNDSTND RACIAL & GENDER CNFLCT	<i>3 credits</i>
This is the core course the Certificates in Racial and Gender Conflict, providing students with an opportunity to intensively examine racial and gender conflict.		
437	GOVERNMENT VS ORGANIZED CRIME	<i>3 credits</i>
The course gives a history of organized crime and the government's responses to fight it. Newly emerging international crime groups are also discussed.		
440	SURVEY RESEARCH METHODS	<i>3 credits</i>
Prerequisites: 100 or permission. Study of survey research methods as applied to the analysis of public opinion, political behavior, and public policy formation.		
441	THE POLICY PROCESS	<i>3 credits</i>
Prerequisites: eight credits in political science. Intensive study of policy-making process, emphasizing roles of various participants in executive and legislative branches as well as private individuals and groups.		
442	METHODS OF POLICY ANALYSIS	<i>3 credits</i>
Prerequisite: 201. Examines variety of methods available for analyzing public policies. Techniques of cost benefit analysis, evaluation research quasi-experimentation are covered as well as consideration of ethical questions in policy analysis, the practical problems facing policy analysts.		
443	POLITICAL SCANDALS & CORRUPT	<i>3 credits</i>
This course will provide information on major political scandals, including media coverage, public opinion, the role of special prosecutors, and the impacts of scandals.		
445	AL QAEDA	<i>3 credits</i>
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.		
450	ADM PRISONS,PROBATION & PAROLE	<i>3 credits</i>
Prerequisite: 100. Analysis of the administrative, electoral, and community conflicts central to understanding, resolving, and preventing these conflicts in a correctional environment.		
461	THE SUPREME COURT & CONST LAW	<i>3 credits</i>
Prerequisite: 100 or permission. Interpretation of the Constitution by the Supreme Court with emphasis on federal judicial, legislative and executive power; separation of powers; and federalism.		
462	THE SUPREME COURT & CIVIL LIB	<i>3 credits</i>
Prerequisite: 100 or permission. Interpretation of the Constitution by the Supreme Court with emphasis on freedom of speech and press, freedom of religion, criminal rights and right to privacy.		
463	HUMAN RIGHTS IN WORLD POLITICS	<i>3 credits</i>
An introduction to human rights from a comparative perspective; topics include: definition and development of human rights with attention paid to government interaction and wartime.		
470	CAMPAIGN MANAGEMENT I	<i>3 credits</i>
Prerequisite: permission of instructor. Reading, research and practice in campaign management decision making.		
471	CAMPAIGN MANAGEMENT II	<i>3 credits</i>
Prerequisite: 470. The second course in campaign management. The focus is on timing, coalition building, candidate positioning, event planning, internal organization, and other elements of campaign strategy.		
472	CAMPAIGN FINANCE	<i>3 credits</i>
Prerequisite: permission of instructor. Reading and research in financial decision making in political campaigns.		
473	VOTER CONTACT & ELECTIONS	<i>3 credits</i>
Prerequisite: permission of instructor. Theoretical and practical approaches to communication in all types of campaigns.		
474	POLITICAL OPIN/BEHAV/ELEC POL	<i>3 credits</i>
Prerequisite: 100 or 201 or permission. Advanced analysis of psychological, cultural, and group processes of opinion formation and change. Attention given to the effect of opinion change on electoral outcomes.		
475	AMERICAN INTEREST GROUPS	<i>3 credits</i>
Prerequisite: six credits of political science or permission. Reading and research on the development, structure and function of interest groups in the United States.		
476	AMERICAN POLITICAL PARTIES	<i>3 credits</i>
Prerequisites: six credits of political science or permission. Reading and research on the development, structure and function of parties in the United States.		
477	LOBBYING	<i>3 credits</i>
Examines the lobbying profession in the political process. Topics include theories of lobbying, tools of lobbying, the lobbying process, and types of lobbying.		
480	POLICY PROB: POLITICAL SCIENCE	<i>3 credits</i>
(May be repeated for a total of six credits) Intensive study of selected problems in public policy.		
481	THE CHALLENGES OF POLICE WORK	<i>3 credits</i>
Prerequisite: 100. Analysis of the neighborhood, bureaucratic, electoral, and operational conflicts central to police work, with a focus on efforts and obstacles to improving police work.		
482	CRIMINAL JUSTICE TOP: CUR ISSU	<i>3 credits</i>

(May be repeated for a maximum of six credits) Prerequisite: 100. Critical analysis of current issues relating to political science and criminal justice. No more than three credits can be applied to the major.

483	CONSTITUTNL PROBS IN CRIM JUST	<i>3 credits</i>
Prerequisite: 100. Analyzes Supreme Court policy-making regarding problems of criminal justice, including search and seizure, self-incrimination, right to counsel, jury selection, and post-appeal prisoner rights.		
497	SR HONORS PROJ: POLITICAL SCI	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and permission. Open only to a political science major in Honors Program. Independent study leading to completion of senior honors thesis or other original work.		
502	POLITICS AND THE MEDIA	<i>3 credits</i>
Examination of relationships between the press, the news media and political decision makers.		
503	MEDIA, CRIME & PUBLIC OPINION	<i>3 credits</i>
Examines the social construction of crime in mass media and how it impacts public, including fear of crime, beliefs about crime causation, and crime policy.		
510	INTERNATIONAL SECURITY POLICY	<i>3 credits</i>
Introduction to political uses of military forces. Major focus on methodological, conceptual, and ethical dilemmas confronted in developing and implementing defense policy.		
513	GLOBAL PUBLIC HEALTH THREATS	<i>3 credits</i>
An introduction to comparative global biological and public health security policy. Topics include: infectious disease outbreaks, bioterrorism, and potential "nano-terrorism."		
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Studies relationship between politics and economy; mesh theoretical perspectives with exploration of the key empirical issues. Topics include: trade, relations, unions, finance, development, aid, sanctions.		
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Study of the survey research methods as applied to the analysis of public opinion, political behavior and public policy formation.		
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Intensive study of policy-making process, emphasizing roles of various participants in executive and legislative branches as well as private individuals and groups.		
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Examines variety of methods available for analyzing public policies. Techniques of cost benefit analysis, evaluation research quasi-experimentation are covered as well as consideration of ethical questions in policy analysis, the practical problems facing policy analysts.		
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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	<i>3 credits</i>
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.		
550	ADM PRISONS,PROBATION & PAROLE	<i>3 credits</i>
Analysis of the administrative, electoral, and community conflicts central to understanding, resolving, and preventing these conflicts in a correctional environment.		
561	THE SUPRM COURT & CONST LAW	<i>3 credits</i>
Interpretation of the Constitution by the Supreme Court with emphasis on federal judicial, legislative and executive power; separation of powers; and federalism.		
562	THE SUPREME COURT & CIVIL LIB	<i>3 credits</i>
Interpretation of the Constitution by the Supreme Court with emphasis on freedom of speech and press, freedom of religion, criminal rights and right to privacy.		
563	HUMAN RIGHTS IN WORLD POLITICS	<i>3 credits</i>
An introduction to human rights from a comparative perspective; topics include: definition and development of human rights with attention paid to government interaction and wartime.		
570	CAMPAIGN MANAGEMENT I	<i>3 credits</i>
Reading, research and practice in campaign management.		
571	CAMPAIGN MANAGEMENT II	<i>3 credits</i>
The second course in campaign management. Focus is on timing, coalition building, candidate positioning, event planning, internal organization, and other elements of campaign strategy.		
572	CAMPAIGN FINANCE	<i>3 credits</i>

	Reading and research in financial decision making in political campaigns.	
573	VOTER CONTACT & ELECTIONS	<i>3 credits</i>
	Theoretical and practical approaches to gaining votes in all types of political campaigns.	
574	POLITICAL OPIN/BEHAV/ELEC POLI	<i>3 credits</i>
	Advanced analysis of psychological, cultural and group processes of opinion formation and change. Attention given to the effect of opinion change on electoral outcomes.	
575	AMERICAN INTEREST GROUPS	<i>3 credits</i>
	Reading and research on the development, structure and function of interest groups in the United States.	
576	AMERICAN POLITICAL PARTIES	<i>3 credits</i>
	Reading and research on the development, structure and function of parties in the United States.	
577	LOBBYING	<i>3 credits</i>
	Examines the lobbying profession in the political process. Topics include theories of lobbying, tools of lobbying, the lobbying process, and types of lobbying.	
580	POLICY PROB: POLITICAL SCIENCE	<i>3 credits</i>
	(May be repeated for a total of six credits) Intensive study of selected problems in public policy.	
581	THE CHALLENGES OF POLICE WORK	<i>3 credits</i>
	Analysis of various political dimensions underlying the study of politics and policing in the context of police reform, crime, and the community.	
582	CURRENT ISSUES (CJ TOPIC)	<i>3 credits</i>
	Study and critical analysis of current issues, programs, and policies relating to political science and criminal justice at the federal or state level.	
583	CONSTITUTNL PROBS IN CRIM JUST	<i>3 credits</i>
	Analyzes Supreme Court policy-making regarding problems of criminal justice, including search and seizure, self-incrimination, right to counsel, jury selection, and post-appeal prisoner rights.	
590	WORKSHOP IN POLITICAL SCIENCE	<i>1-3 credits</i>
	(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.	
600	SCOPE & THEORIES OF POLI SCI	<i>3 credits</i>
	Prerequisite: admission to political science graduate program or permission. Emphasis on the nature, scope and content of political theory; theory construction and validation in political science.	
601	RES METH: POLITICAL SCIENCE	<i>3 credits</i>
	Prerequisite: 600 or permission. Techniques of quantitative research methodology in political science; utility and limitations of quantitative analysis.	
602	FOUNDATIONS OF POLITICAL SCI	<i>3 credits</i>
	Prerequisite: Admission to a Political Science graduate program or permission. Introduction to the major works in political science. Works to be discussed range from ancient Greek to 20th century European and American political thought.	
603	SCHOLARLY WRITING & PROF DEV	<i>3 credits</i>
	Prerequisite: Admission to a Political Science graduate program or permission. Course will assist in the development of Essay / Capstone projects: Organization, format presentation, editing, committee review. Will help polish student writing and presentation skills.	
610	SEMINAR-INTERNATIONAL POLITICS	<i>3 credits</i>
	Prerequisite: admission to political science graduate program or permission. Analysis of current problems in theory and practice of politics and organization.	
620	SEMINAR - COMPARATIVE POLITICS	<i>3 credits</i>
	Prerequisite: admission to political science graduate program or permission. Research selected topics in comparative politics. Comparative method.	
622	SEM:ALT TO VIOLENCE HOME&ABRD	<i>3 credits</i>
	Prerequisite: admission to political science graduate program or permission. An interdisciplinary analysis of the nature of violence--from interpersonal to international--to enhance our capacity to reduce violence and other threats to liberty.	
630	SEM: NATIONAL POLITICS	<i>3 credits</i>
	Prerequisite: admission to political science graduate program or permission. Reading and research on formulation, development and implementation of national policy in one or more areas of contemporary significance.	
650	SEM ON LAW,PUN,POL: US & WORLD	<i>3 credits</i>
	Prerequisite: admission to political science graduate program or permission. Reading and research on the multiple and contingent interconnections between law, punishment, politics, and power.	
655	CAMPAIGN & ELECTION LAW	<i>3 credits</i>
	Prerequisite: admission to political science graduate program or permission. Examines the legal environment for political campaigns. Topics include historical background, legal foundation, voting rights, filing requirements, campaign finance and political advertising	
668	SEM PUBLIC POLICY AGENDA & DECS	<i>3 credits</i>

Prerequisite: admission to political science graduate program or permission. Reading and research on the development of public policy issues and modes of decision making used by policy makers.

672 **SEM POLITICAL INFLUENCE & ORG** *3 credits*

Prerequisite: admission to political science graduate program or permission. Examination of how public concerns and demands are resolved or diffused. A theoretical and applied look at parties, interest groups, public opinion, media, and protest.

690 **ST: POLITICAL SCIENCE** *1-3 credits*

Prerequisite: admission to political science graduate program or permission. Graduate-level examination of selected topics in American politics, comparative politics, international politics, international politics or political theory.

695 **INTERN-GOVERNMENT & POLITICS** *3-6 credits*

(May be repeated for a total of six credits.) Prerequisite: admission to political science graduate program or permission. Supervised individual placement with political office holders, party groups, governmental agencies, law firms and other organizations providing professional-level work.

697 **INDEPENDENT RESEARCH & READING** *1-4 credits*

(May be repeated, but no more than six credits toward the master's degree in political science) Prerequisite: admission to political science graduate program or permission.

699 **MASTERS THESIS** *2-6 credits*

Prerequisite: admission to political science graduate program or permission. Master's Thesis.



Psychology (3750)

100	INTRODUCTION TO PSYCHOLOGY	<i>3 credits</i>
Introduction to scientific study of behavior, survey of physiological basis of behavior, sensation and perception, development, learning and cognition, personality, social interaction and other selected topics.		
105	PROFESSIONAL & CAREER ISSUES IN PSYCH	<i>1 credits</i>
Corequisite: 100. An overview of the field of psychology including educational requirements, career opportunities and professional issues for students considering a psychology major.		
110	QUANTITATIVE METHODS IN PSYCH	<i>4 credits</i>
Prerequisite or corequisite: 100. Presentation of data, descriptive statistics, correlation, hypothesis testing and introduction to statistical methodologies in psychology, including computer applications.		
220	INTRO TO EXPERIMENTAL PSYCH	<i>4 credits</i>
Prerequisites: 100 and 110. Lectures and laboratory experience in the scientific bases of psychology such as experimental design, methods and apparatus, collection and analysis of data and interpretation of results.		
230	DEVELOPMENTAL PSYCHOLOGY	<i>4 credits</i>
Prerequisite: 100. Determinants and nature of behavioral change from conception to death.		
320	BIOPSYCHOLOGY	<i>4 credits</i>
Prerequisite: 100. Relationship between behavior and its biological/physiological foundations including brain structure and function, sensation, behavior genetics, learning and memory, and other topics.		
335	DYNAMICS OF PERSONALITY	<i>4 credits</i>
Prerequisite: 100. An overview of theory and research involving the development, maintenance and assessment of personality and individual differences.		
340	SOCIAL PSYCHOLOGY	<i>4 credits</i>
Prerequisite: 100. The examination of an individual's response to social environment and social interaction processes. Social perception, attitude formation and change, affiliation and attraction, altruism, group processes and nonverbal behavior.		
345	COGNITIVE PROCESSES	<i>4 credits</i>
Prerequisite: 100. Survey of the basic phenomena, concepts and theories in the areas of human perception, learning, memory and cognition.		
380	INDUSTRIAL/ORGANIZATIONAL PSYCH	<i>4 credits</i>
Prerequisite: 100. Survey of the application of psychology to the workplace including an emphasis on organizational (e.g., motivation) and personnel issues (e.g., selection).		
400	PERSONALITY	<i>4 credits</i>
Prerequisites: 100 and 335. Consideration of current conceptualizations of the normal personality with emphasis on methods of measurement, experimental findings and research techniques.		
405	SENSATION & PERCEPTION	<i>4 credits</i>
Prerequisite: 100. Reviews the basic psychological and neural components of sensation and perception involving visual, auditory, cutaneous, and chemical sensory systems.		
410	PSYCHOLOGICAL TESTS & MEASURES	<i>4 credits</i>
Prerequisites: 100, 110. Consideration of the nature, construction and use of tests and measurements in industry, government and education. Includes aptitude and achievement tests, rating scales, attitude and opinion analysis.		
415	COGNITIVE NEUROSCIENCE	<i>4 credits</i>
Prerequisite: 100. A review of neuroimaging studies addressing contemporary themes in human behavior, including consciousness, learning and memory, neuropathology, and emotion.		
420	ABNORMAL PSYCHOLOGY	<i>4 credits</i>
Prerequisite: 100. Survey of syndromes, etiology, diagnoses and treatments of major psychological conditions ranging from transient maladjustments to psychoses.		
425	PSYCHOLOGY OF HATE	<i>4 credits</i>
Prerequisite: 100. The primary objective of this course is to understand the psychology behind hate. Topics include racism, sexism, heterosexism, religious intolerance, classism and ageism.		
430	PSYCHOLOGICAL DISORDERS: CHILD	<i>4 credits</i>
Prerequisites: 100 and 230. Survey of syndromes, etiologies and treatments of behavioral disorders in children from the standpoint of developmental psychology. Behavioral data and treatment approaches emphasized.		
435	CROSS-CULTURAL PSYCHOLOGY	<i>4 credits</i>

Prerequisites: 100. Influence of culture and ethnicity upon development of individual psychological processes including functioning, identity, social motives, sex roles and values.

440	PERSONNEL PSYCHOLOGY & LAW	<i>4 credits</i>
Prerequisites: 380 or 6500:301. The implications of equal employment law on the practice of personnel psychology.		
441	CLINICAL & COUNSELING PSYCH I	<i>4 credits</i>
Prerequisites: 100 and 335. Overview of the fields of clinical and counseling psychology with a major focus on psychotherapeutic approaches, including cultural considerations, legal/ethical issues, and outcome research.		
442	CLINICAL & COUNSELING PSYCH II	<i>4 credits</i>
Prerequisite: 441. Overview of individual counseling and psychotherapy, group counseling, personality and ability testing, marriage and family counseling, hypnosis, sex therapy, psychopharmacology and related specialties. Specific topics in clinical and counseling practice including professional trends, ethics, various therapeutic and diagnostic procedures, and specialty areas.		
443	HUMAN RESOURCE MANAGEMENT	<i>4 credits</i>
Prerequisites: 100 and 380. The application of psychological theory to the effective management of human resources in an organization, including recruitment, selection, training and retention of personnel.		
444	ORGANIZATIONAL THEORY	<i>4 credits</i>
Prerequisites: 100 and 380. The application of psychological theory to macro-level processes in organizations including leadership, motivation, task performance, organizational theories and development.		
445	PSYCHOLOGY OF SMALL GROUP BEH	<i>4 credits</i>
Prerequisites: 100. Intensive investigation of factors affecting behavior and performance in small groups including effects of personality, social structures, task, situational and social-cognitive variables.		
450	COGNITIVE DEVELOPMENT	<i>4 credits</i>
Prerequisites: 100 and 345. Theory and research on life-span changes in cognitive processes including concept formation/categorization, information processing and Piagetian assessment tasks.		
460	HISTORY OF PSYCHOLOGY	<i>3 credits</i>
Prerequisite: 100. Psychology in pre-scientific period and details of developmental or systematic viewpoints in 19th and 20th Centuries.		
474	PSYCHOLOGY OF WOMEN	<i>4 credits</i>
Prerequisites: 3750:100 or 3001:300. Reviews theory and research in the psychology of women and gender and encourages students to use these in their everyday lives.		
475	PSYCHOLOGY OF ADULTHOOD & AGNG	<i>4 credits</i>
Prerequisites: 100 and 230. Psychological aspects of human development from adolescence to older adulthood including age-related changes in socialization, personality, intelligence, sensation, perception, learning, memory and clinical applications.		
480	ST: PSYCHOLOGY	<i>1-4 credits</i>
(May be repeated to a maximum of 8 credits) Prerequisite: 100 and 64 credits completed. Comprehensive survey of contemporary status of specialized topics and issues in psychology. Emphasis on original source materials, critical analysis and synthesis of empirical and theoretical aspects.		
488	HONORS PROJECT IN PSYCHOLOGY	<i>4 credits</i>
Prerequisites: Psychology major and departmental permission, and 100 and 105 and 110 and 220, and 320 or 335 or 340 or 345. Selection of research topic, review of relevant literature, research design, and proposal.		
489	HONORS PROJECT IN PSYCHOLOGY	<i>4 credits</i>
Prerequisites: Psychology major and departmental permission, and 100 and 105 and 110 and 220, and 320 or 335 or 340 or 345. Data collection, analysis, and preparation of the final research report in journal style.		
495	FIELD EXPERIENCE IN PSYCHOLOGY	<i>1-4 credits</i>
(May be repeated to a maximum of 6 credits). Prerequisites: 100, 105 and 110 and eight additional credits in psychology. On-site supervised individual placements in appropriate settings. The academic component of the experience will be under the supervisor of a selected faculty member.		
497	INDEP RDG/RSRCH: PSYCHOLOGY	<i>1-3 credits</i>
(May be repeated to a maximum of 6 credits). Prerequisites: 3750:100 and 105 and 110 and 220 and four additional credits in psychology. Independent reading and/or research in an area of psychology under the supervision and evaluation of a selected faculty member.		
498	HONORS RESEARCH IN PSYCHOLOGY	<i>1-3 credits</i>
Prerequisites: Psychology major and approval of honors advisor. Individual research with a faculty advisor leading to the completion of a research project satisfying departmental and university requirements.		
500	PERSONALITY	<i>4 credits</i>
Prerequisite: Admission to the Graduate School. Consideration of current conceptualizations of the normal personality with emphasis on methods of measurement, experimental findings and research techniques.		
510	PSYCHOLOGICAL TESTS & MEASURES	<i>4 credits</i>
Prerequisite: Admission to the Graduate School. Consideration of the nature, construction and use of tests and measurements in industry, government and education. Includes aptitude and achievement tests, rating scales, attitude and opinion analysis.		
520	ABNORMAL PSYCHOLOGY	<i>4 credits</i>

Prerequisite: Admission to the Graduate School. Survey of syndromes, etiology, diagnoses and treatments of major psychological conditions ranging from transient maladjustments to psychoses.

530	PSYCHLGLICAL DISORDERS: CHILDRN	<i>4 credits</i>
Prerequisite: Admission to the Graduate School. Survey of syndromes, etiologies and treatments of behavioral disorders in children from the standpoint of developmental psychology. Behavioral data and treatment approaches emphasized.		
543	HUMAN RESOURCE MANAGEMENT	<i>4 credits</i>
Prerequisite: Admission to the Graduate School. The application of psychological theory to the effective management of human resources in an organization, including recruitment, selection, and retention of personnel.		
544	ORGANIZATIONAL THEORY	<i>4 credits</i>
Prerequisite: 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.		
545	PSYCHOLOGY OF SMALL GROUP BEH	<i>4 credits</i>
Prerequisite: Admission to the Graduate School. Intensive investigation of factors affecting behavior and performance in small groups including effects of personality, social structures, task, situation and social-cognitive variables.		
550	COGNITIVE DEVELOPMENT	<i>4 credits</i>
Prerequisite: Admission to the Graduate School. Theory and research on life-span changes in cognitive processes including concept formation/categorization, information processing and Piagetian assessment tasks.		
560	HISTORY OF PSYCHOLOGY	<i>3 credits</i>
Prerequisite: Admission to the Graduate School. Psychology in pre-scientific period and details of developmental or systematic viewpoints in 19th and 20th Centuries.		
601	PSY RSCH: QUAN&COMPU MTHDS I	<i>4 credits</i>
Sequential prerequisite: Graduate standing in psychology or the collaborative doctoral program in counseling psychology or special nondegree students with permission. Psychological research problem applying quantitative and computer methods. Topics include research design, sampling, controls, threats to validity, hypotheses testing, psychological measurement, error, robustness and power.		
602	PSY RSCH: QUAN&COMPU MTHDS II	<i>4 credits</i>
Sequential prerequisite: Graduate standing in psychology or the collaborative doctoral program in counseling psychology or special nondegree students with permission. Psychological research problem applying quantitative and computer methods. Topics include research design, sampling, controls, threats to validity, hypotheses testing, psychological measurement, error, robustness and power.		
610	CORE I: SOCIAL PSYCHOLOGY	<i>2 credits</i>
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Introduction to empirical research and theories on the psychological processes related to interpersonal behavior, focusing on topics like attitude change, social influence, and prosocial behavior.		
620	CORE II: COGNITIVE PSYCHOLOGY	<i>2 credits</i>
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Survey of theories, concepts, empirical phenomena, and methodologies in human cognitive psychology. Topics include attention, cognitive capacity, learning, memory, categorization, skill acquisition/expertise, and training effectiveness.		
630	CORE III: INDIVIDUAL DIFFS	<i>2 credits</i>
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Survey of theoretical perspectives on individual differences in personality and behavior and of literature on between- and within-group cultural variables influencing personality development and assessment.		
640	CORE IV: BIOPSYCHOLOGY	<i>2 credits</i>
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Survey of nervous system structure/function including neuroanatomy, neuron physiology, and synaptic transmission. Also overviews biological bases of learning, memory, consciousness, intelligence, psychopharmacology, behavior genetics.		
650	CORE V: SOCIAL-COGNITIVE PSYCH	<i>2 credits</i>
Prerequisite: graduate standing in psychology or the collaborative doctoral program in counseling psychology or permission of instructor. Social and cognitive theory/research applied to the issue of how people understand their social experiences. Topics include: person perception, attribution, social categorization, social inference.		
660	SCI & ETH OF INDUSTRIAL PSYCH	<i>4 credits</i>
Survey of Industrial Psychology including coverage of selection and performance management. Also, discusses professional and scientific guidelines regarding the ethics of Industrial Psychology.		
672	COUNSELING PRACTICUM	<i>2 credits</i>
Prerequisites: graduate standing in psychology and permission of instructor. Introduction to and development of therapeutic skills and intervention techniques via instruction, roleplay exercises, and case conference evaluations of actual clinical work samples. (May be repeated for a total of 8 credits.) Credit/Noncredit.		
673	COUNSELING PRACTICUM LAB	<i>2 credits</i>
Prerequisites: graduate standing in psychology and instructor's permission. Corequisite: 672. Application of therapeutic skills and intervention techniques to work with clients in the Psychology Department Counseling Clinic, including small group supervision of clinical work. (May be repeated for a total of 8 credits.) Credit/Noncredit.		
674	PERSONNEL PRACTICUM	<i>1-4 credits</i>

(May be repeated.) Prerequisites: 660, graduate standing in psychology, 14 credits of graduate psychology, and permission of the instructor. Supervised field experience in industrial/organizational psychology in settings including business, government or social organizations. The field experience requires the application of industrial/organizational psychological theories and techniques. Credit/Noncredit.

675	APPLIED COGNITIVE AGING PRACT	<i>1-4 credits</i>
(May be repeated.) Prerequisites: 727, graduate standing in psychology, 14 credits of graduate psychology and permission of the instructor. Supervised field experience in applied cognitive aging psychology to provide the student with the opportunity to apply skills and knowledge acquired in the academic setting and to obtain knowledge about community programs and agencies which focus on developmental processes. Credit/Noncredit.		
680	EXTERNAL SPECIAL TOPICS	<i>1-4 credits</i>
(May be repeated for a maximum of 16 credits.) Prerequisite: permission of area chair. Graduate coursework taken at Kent State, Youngstown State, and/or Cleveland State universities to apply toward a UA degree either as a required or an elective course.		
699	MASTERS THESIS	<i>1-4 credits</i>
(May be repeated.) Prerequisite: permission of the instructor. Research analysis of data and preparation of thesis for master's degree.		
700	SURVEY OF PROJECTIVE TECHNIQUE	<i>4 credits</i>
Prerequisite: 630 or instructor's permission. Introduction to rationale, assumptions and ethics, and research of projective testing. Elementary administration, scoring and interpretation of Rorschach; and survey of other important contemporary projective instruments.		
701	PSYCHODIAGNOSTICS	<i>4 credits</i>
Prerequisite: 700. Application of psychological testing to problems of diagnosis and evaluation. Practical experience in administration, scoring and interpretation. Integration of projective data with other assessment techniques in variety of settings.		
707	SUPERVISION IN COUNS PSYCH I	<i>4 credits</i>
Prerequisite: doctoral standing or permission of instructor. Instruction and experience in supervising a graduate student in counseling.		
709	INTRO TO COUNSELING PSYCHOLOGY	<i>2 credits</i>
Prerequisite: graduate standing in the Collaborative Program in Counseling Psychology. Introduction to historical foundations of and recent developments in counseling psychology, with an emphasis on contemporary research literature in the field.		
710	THEORIES OF COUNSELING & PSYCH	<i>4 credits</i>
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.		
711	VOCATIONAL BEHAVIOR	<i>4 credits</i>
Prerequisite: 630 or permission of instructor. Theories and research on vocational behavior and vocational counseling. Topics include major theories of vocational behavior, empirical research on these theories, applied work in vocational counseling and applied research.		
712	PRINC/PRACT:INDIV INTEL TEST	<i>4 credits</i>
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.		
713	PROF, ETH & LEG ISS:COUN PSYCH	<i>4 credits</i>
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.		
714	OBJECTIVE PERSONALITY EVAL	<i>4 credits</i>
Prerequisites: completion of 630 or 500, and 520, and 5600:645. Study of the development, administration, and interpretation of objective instruments for personality assessment (MMPI, CPI, MBTI, 16PF and selected additional inventories).		
715	RESEARCH DESIGN IN COUNS I	<i>3 credits</i>
Prerequisite: doctoral standing or permission of the instructor. Study of research designs, evaluation procedures, and review of current research.		
717	ISSUES OF DIVERSITY-COUNS PSYC	<i>4 credits</i>
Prerequisites: 630; one semester of practicum work. Critical examination and application of research and theory in counseling diverse populations, focusing on race/ethnicity, sex/gender, sexual orientation, age, disability, and spirituality.		
718	HISTORY & SYSTEMS IN PSYCH	<i>2 credits</i>
Prerequisite: 630. Philosophical and scientific antecedents of psychology and details of the development of systematic viewpoints in the 19th and 20th centuries.		
727	PSYCHOLOGY OF ADULTHOOD & AGNG	<i>4 credits</i>
Prerequisite: graduate standing in psychology or in the collaborative program in counseling psychology, or permission of the instructor. Aspects of development, aging with emphasis on life-span methodology and research design. Age-related changes in intelligence, personality, sensation, perception, learning, memory, socialization, and intervention approaches.		
731	PERCEPTION, ATTENTION & AGING	<i>4 credits</i>

Prerequisites: graduate standing in the Adult Development and Aging program or permission of the instructor. Overview of theory, methods, and data on attention and perception and how aging affects these phenomena.

732	COGNITION AND AGING	<i>4 credits</i>
Prerequisites: graduate standing or permission of the instructor. Survey of selected topics in cognitive aging including memory, problem-solving, decision-making, and expertise.		
735	APPLIED COGN AGNG:COG NEUROPSY	<i>4 credits</i>
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 research.		
736	PSYCHOPHARMACOLOGY & ADULTHOOD	<i>4 credits</i>
Prerequisite: 640. Psychopharmacology addresses a diverse range of drugs that act in the brain. Drug mechanisms are discussed in the context of emotional, cognitive, and behavioral effects.		
738	APPLIED DEVELOPMENTAL PSYCH	<i>4 credits</i>
Prerequisites: 727, graduate standing in psychology, or permission of instructor. Examination of methodologies, evaluation, child abuse, early intervention, day care, kibbutzim, social networks, subcultural variations, and hospice/dying.		
740	INDUSTRIAL GERONTOLOGY	<i>4 credits</i>
Prerequisites: 660, graduate standing in psychology, or permission of instructor. Study of age-related issues in work involving adult and older adult workers. Topics include personnel selection, training, motivating and appraising older employees; health and safety; job design, vocational guidance; and retirement.		
750	ADV PSYCH TESTS & MEASUREMENTS	<i>2 credits</i>
Prerequisites: graduate standing in psychology or in the collaborative program in counseling psychology, or permission of the instructor. Analysis of test construction techniques. Statistical analyses of tests with review of published tests and measurements used in psychology. Study of psychometric theory and principles.		
751	ORGANIZATIONAL PSYCHOLOGY	<i>4 credits</i>
Prerequisites: 660, graduate standing in psychology, or permission of the instructor. Applies the general systems theory framework to the study of the relationships between organizational characteristics and human behavior, the internal processes of organizations, and the relationships between organizations and their environment.		
752	PERS SELECT & ADV APP TEST ISS	<i>4 credits</i>
Review of strategies employed by industrial/organizational psychologists for personnel selection, placement and promotion. Includes discussion of advanced testing issues.		
753	TRAINING	<i>2 credits</i>
Prerequisites: 660, graduate standing in psychology, or permission of the instructor. Review of industrial training methods and programs in terms of various theoretical orientations, as well as consideration of techniques to evaluate these programs.		
754	RESEARCH METHODS IN PSYCHOLOGY	<i>2-4 credits</i>
Prerequisites: 660, graduate standing in psychology or permission of instructor. Scientific method and its specific application to psychology. Topics include data collection, validity, reliability, use of general linear model and its alternatives and power analysis.		
755	COMPUTER APP IN PSYCH RESEARCH	<i>4 credits</i>
Prerequisite: graduate standing in psychology or permission of instructor. Practicum in application of computers to psychological research including data collection, analysis and interpretation. Also covers computer simulation of decision making including use of different models.		
756	ROLE OF ATTDS & VALS:I/O PSYCH	<i>4 credits</i>
Prerequisites: 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.		
757	ORGANIZATIONAL MOTIV & LEADER	<i>4 credits</i>
Prerequisites: 660, graduate standing in psychology, or permission of instructor. Survey of theories of motivation specifying both the intrinsic and extrinsic determinants of worker motivation. The leadership process and its relation to motivation, group performance and attributions is also analyzed.		
759	JOB EVALUATION & EQUAL PAY	<i>4 credits</i>
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 approaches to job evaluation and applicable court cases will be reviewed.		
760	ORGANIZATIONAL CHANGE & TRANSF	<i>4 credits</i>
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 quality of work life.		
761	INFORMATION PROCNG & I/O PSYCH	<i>4 credits</i>
Prerequisite: 660. Coverage of current theories in cognitive psychology is applied to traditional concerns of industrial/organizational psychology such as performance appraisal or motivation.		
762	PERSONNEL PSYCHOLOGY & LAW	<i>4 credits</i>
Prerequisite: 660. Issues in personnel psychology which have legal implications are reviewed. The impact of recent court decisions are evaluated in staffing and compensation.		

763	PERFORMANCE FEEDBACK & EVALUAT	<i>4 credits</i>
Prerequisites: 660, graduate standing in psychology, or permisssion of instructor. Examines current research and practice in the area of performance appraisal. Topics will include: criterion development, rater training, appraisal effectiveness, feedback processes, and performance measurement.		
764	COGNITIVE ASSESSMENT	<i>2 credits</i>
Prerequisite: 750 and enrollment in the Collaborative Program in Counseling Psychology, OR instructor's permission. History, principles and methodology of cognitive assessment, supervised practice in administration, scoring and interpretation of individual intelligence tests for children and adults.		
765	OBJECTIVE PERSONALITY ASSESSMT	<i>2 credits</i>
Prerequisites: completion of 750 and student must be enrolled in Collaborative Program in Counseling Psychology. Study of the development, administration, and interpretation of objective measures of personality assessment (MMPI, PAI and selected additional inventories).		
780	GS: PSYCHOLOGY	<i>1-4 credits</i>
(May be repeated.) Prerequisites: graduate standing in psychology and permission of the instructor. Special topics in psychology.		
795	ADVANCED COUNSELING PRACTICUM	<i>4 credits</i>
(May be repeated.) Prerequisites: 671, 672, 673 and permission of instructor. This course provides graduate students in counseling with actual client contacts and supervisory experiences under faculty supervision. Credit/Noncredit.		
796	COUNSELING PSYCHOLOGY PRACT	<i>4 credits</i>
(May be repeated.) Prerequisite: 795 (eight hours) or 5600:675 (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.		
797	INDEP RDG/RSRCH: PSYCHOLOGY	<i>1-3 credits</i>
(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.		
899	DOCTORAL DISSERTATION	<i>1-12 credits</i>
Prerequisite: open to properly qualified students. Required minimum 12 credits; maximum subject to departmental approval. Supervised research on topic deemed suitable by the dissertation committee.		



Sociology (3850)

100	INTRODUCTION TO SOCIOLOGY	<i>4 credits</i>
Basic terminology, concepts and approaches in sociology, including introduction to analysis of social groups and application of sociological concepts to the understanding of social systems. Required of majors. Lecture/discussion.		
301	METHODS OF SOCIAL RESEARCH I	<i>4 credits</i>
Prerequisites: 3850:100 and Arts & Sciences math requirement. The basis of this course is learning to apply course material to improve thinking, problem solving, and decisions in conducting research design and data gathering techniques. Required of all majors.		
302	METHODS OF SOCIAL RESEARCH II	<i>4 credits</i>
Prerequisites: 3850:100, 3850:301 and Arts & Sciences math requirement. Essential objectives of this course are developing expression skills in writing and learning fundamental principles in statistics. Other key topics include quantitative techniques and application to sociological data. Required of all majors.		
310	SOCIAL PROBLEMS	<i>3 credits</i>
Prerequisite 100 or permission. Study of selected contemporary problems in society; application of sociological theory and research to understand the social construction of and response to these problems.		
315	SOCIOLOGICAL SOCIAL PSYCHOLOGY	<i>3 credits</i>
Prerequisite: 100. The reciprocal influence of individuals and groups. How interpersonal processes produce and affect group structure. How groups affect the development and behavior of the social person.		
320	SOCIAL INEQUALITIES	<i>3 credits</i>
Prerequisite: 100 or permission. This course covers local, regional, national, and global dimensions of social inequalities. Structural and interactionist approaches to relations of power in society frame the course.		
321	POPULATION	<i>3 credits</i>
An introduction to world and national population trends, related demographic and social characteristics. Topics include fertility, mortality, morbidity, migration, abortion, birth control, population policy in relation to societal problems. Lecture.		
324	SOCIAL MOVEMENTS	<i>3 credits</i>
Prerequisite: 100 or permission. Social movements as distinguished from other forms of collective behavior; analysis of social situations which produce social movements; focus on development of social movements and their role in social change. Lecture.		
325	SOCIOLOGY OF WOMEN GLOBAL SOC	<i>3 credits</i>
Prerequisites: 100 or permission of instructor. Examination of research and theories pertaining to women's status in global society, including economic conditions, the relationship between structure and experience, and global/local linkages.		
330	CRIMINOLOGY	<i>3 credits</i>
Prerequisite: 100. Major focus on interrelationships and analysis of crimes, criminals, criminal justice systems and society. Lecture.		
336	SOCIOLOGY OF WORK & OCCUPATION	<i>3 credits</i>
Prerequisite: 100 or permission. Survey of theory and empirical research in areas such as the structure of occupations and professions, occupational attainment, work force characteristics, work values and orientations, the nature of work. Lecture.		
340	THE FAMILY	<i>3 credits</i>
Prerequisite: 100 or permission. Analysis of family as a social system; historical, comparative and contemporary sociological approaches examined in relation to family structure and functions. Lecture.		
341	POLITICAL SOCIOLOGY	<i>3 credits</i>
Prerequisite: 100 or permission. Survey of theory and empirical research dealing with relationship between political phenomena and the larger network of social processes in human societies. Lecture.		
342	SOCIOLOGY OF HEALTH & ILLNESS	<i>3 credits</i>
Prerequisite: 100 or permission. General survey of sociological perspectives, concepts and research on health, illness and health-care delivery systems. Lecture.		
343	SOCIOLOGY OF AGING	<i>3 credits</i>
Prerequisite: 100 or permission. Examination of process of aging from perspective of behavioral and sociological aspects. Lecture.		
350	DRUGS IN SOCIETY	<i>3 credits</i>
Prerequisite: 100. This course is a survey, from a sociological perspective, of drug abuse, of the relationship between drugs and crime, and of various treatment strategies.		

365	ST: SOCIOLOGY	<i>1-3 credits</i>
<p>(May be repeated) Prerequisite: permission. Special topics of interest to sociology major and non-major not covered in regular course offerings.</p>		
397	SOCIOLOGICAL READINGS & RSRCH	<i>1-3 credits</i>
<p>Prerequisite: permission. Individual study of problem area of specific interest to individual student under guidance of department member. Preparation of a research paper.</p>		
410	SOCIAL STRUCTURES & PERSONLTY	<i>3 credits</i>
<p>Prerequisite: 100 or permission. Interrelationships between position in society, personality characteristics. Personality treated as both result and determinant of social structure and process. Lecture.</p>		
411	SOCIAL INTERACTION	<i>3 credits</i>
<p>Prerequisite: 100 or permission. Intensive study of advanced theory and research in social psychology, particularly how social interaction and self-conception affect one another. Lecture.</p>		
412	SOCIALIZATION: CHILD TO ADULT	<i>3 credits</i>
<p>Prerequisite: 100 or permission. Theoretical and empirical analysis of process by which infant, child, adolescent and adult learn social and cultural requirements necessary to function in new roles, changing roles and society in general.</p>		
415	WOMEN IN PRISON	<i>3 credits</i>
<p>Prerequisite: 100 or permission of instructor. In depth examination of women's experiences in prison. Includes processes involved in the movement into prison, experiences while in institutions, and transitioning out of prison.</p>		
416	WOMEN AND CRIME	<i>3 credits</i>
<p>Prerequisite: 100 or permission of instructor. An overview of women's experiences with crime, including women as offenders, victims, and workers in the criminal justice system.</p>		
421	RACE & ETHNIC RELATIONS	<i>3 credits</i>
<p>Prerequisite: 100 or permission. Analysis of structure and dynamics of race and ethnic relations from a variety of perspectives emphasizing both historical and contemporary issues. Lecture.</p>		
425	SOCIOLOGY OF URBAN LIFE	<i>3 credits</i>
<p>Prerequisite: 100 or permission. Emergence and development of urban society. Examination of urban social structure from neighborhood to metropolis, the problems and prospects. Emphasis on various life styles of urban subcultures. Lecture/discussion.</p>		
428	VICTIM IN SOCIETY	<i>3 credits</i>
<p>Prerequisites: 100 or permission of instructor. Study of the nature, causes, and consequences of victimization with special focus on crime victimization.</p>		
430	JUVENILE DELINQUENCY	<i>3 credits</i>
<p>Prerequisite: 100 or permission. Analysis of social structure and process from which delinquency develops. Emphasis on current and past research. Lecture/discussion.</p>		
431	CORRECTIONS	<i>3 credits</i>
<p>Prerequisites: 330 or 430. Theories, beliefs and practices of community and institutional corrections systems, including past and current social research. Course taken prior to 3 credit hour Field Placement in Corrections (3850:471).</p>		
433	SOCIOLOGY OF DEVIANT BEHAVIOR	<i>3 credits</i>
<p>Prerequisites: 100 and at least six additional credits of sociology courses or permission. Survey of theories of deviant behavior and relevant empirical research. Special emphasis given to interaction processes and social control. Lecture.</p>		
435	SOCIOLOGY OF LOVE	<i>3 credits</i>
<p>Prerequisite: 100 or permission. Study of the relation of love to the social order. Coverage includes diverse types, such as romantic, familial, religious, and altruistic love.</p>		
441	SOCIOLOGY OF LAW	<i>3 credits</i>
<p>Prerequisites: 100 and at least six additional credits of sociology courses or permission. Social origins and consequences of law and legal processes. Emphasis on uses of law, social change and aspects of legal professions. Lecture.</p>		
447	SOCIOLOGY OF SEX AND GENDER	<i>3 credits</i>
<p>Prerequisite: 100 or permission. Review of research and theories of sex and gender. Examination of gender as structure, process and experience in society.</p>		
450	SOCIOLOGY OF MENTAL ILLNESS	<i>3 credits</i>
<p>Prerequisite: 100 or permission. 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.</p>		
455	FAMILY VIOLENCE	<i>3 credits</i>
<p>Prerequisite: 100. 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 explored.</p>		
460	SOCIOLOGICAL THEORY	<i>4 credits</i>
<p>Prerequisite: 100 or permission. An overview and examination of theoretical issues in sociology through the study of both classical and contemporary theoretical work.</p>		
470	RES METH: SOCIAL SCI PROSEM	<i>3 credits</i>

Pre-requisite: Completion of required coursework for the Research Methods Certificate Program or Permission of Instructor. Application of qualitative and/or quantitative research methods and analysis, and preparation of a scholarly research paper for presentation and/or publication. Seminar.

495	FIELD INTERNSHIP	<i>2-4 credits</i>
Prerequisites: permission of a faculty supervisor and a minimum of 64 hours of undergraduate coursework of which 12 hours must be in sociology. Placement in community organization for supervised experience related to degree requirements. Student must submit an application to the intern coordinator during semester prior to enrollment.		
496	SENIOR HONORS PROJECT	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisites: enrollment in Honors College, Senior standing, and major in sociology. Thesis or original creative work appropriate to student's area of interest. Requirements and evaluation of project determined by departmental honors preceptor and student's honors project adviser.		
510	SOCIAL STRUCTURES & PERSONLTY	<i>3 credits</i>
Prerequisite: permission. Interrelationships between position in society, personality characteristics. Personality treated as both result and determinant of social structure and process. Lecture.		
511	SOCIAL INTERACTION	<i>3 credits</i>
Prerequisite: permission. Intensive study of advanced theory and research in social psychology, particularly how social interaction and self-conception affect one another. Lecture.		
512	SOCIALIZATION: CHILD TO ADULT	<i>3 credits</i>
Prerequisite: permission. Theoretical and empirical analyses of process by which infant, child, adolescent and adult learn social and cultural requirements necessary to function in new roles, changing roles and society in general.		
521	RACE & ETHNIC RELATIONS	<i>3 credits</i>
Prerequisite: permission. Analysis of structure and dynamics of race and ethnic relations from a variety of perspectives emphasizing both historical and contemporary issues. Lecture.		
525	SOCIOLOGY OF URBAN LIFE	<i>3 credits</i>
Prerequisite: permission. Emergence and development of urban society. Examination of urban social structure from neighborhood metropolis, the problems and prospects. Emphasis on various life styles of urban subcultures. Lecture/discussion.		
528	THE VICTIM IN SOCIETY	<i>3 credits</i>
Prerequisite: permission of instructor. Study of the nature, causes, and consequences of victimization with special focus on crime victimization.		
530	JUVENILE DELINQUENCY	<i>3 credits</i>
Prerequisite: permission. Analysis of social structure and process from which delinquency develops. Emphasis on current and past research. Lecture/discussion.		
531	CORRECTIONS	<i>3 credits</i>
Theories, beliefs and practices of community and institutional corrections systems, including past and current social research. Course taken prior to 3 credit hour Field Placement in Corrections (3850:471).		
533	SOCIOLOGY OF DEVIANT BEHAVIOR	<i>3 credits</i>
Prerequisite: at least six additional credits of sociology courses or permission. Survey of theories of deviant behavior and relevant empirical research. Special emphasis given to interaction processes and social control. Lecture.		
541	SOCIOLOGY OF LAW	<i>3 credits</i>
Prerequisite: at least six additional credits of sociology courses or permission. Social origins and consequences of law and legal processes. Emphasis on uses of law, social change and aspects of legal professions. Lecture.		
544	SOCIAL ISSUES IN AGING	<i>3 credits</i>
Prerequisite: permission. A look into the major issues and problems facing older persons. Special attention is given to the unmet needs of the elderly as well as an examination of current societal policy and programs to meet these needs.		
547	SOCIOLOGY OF SEX AND GENDER	<i>3 credits</i>
Review of research and theories of sex and gender. Examination of gender as structure, process and experience in society.		
550	SOCIOLOGY OF MENTAL ILLNESS	<i>3 credits</i>
Prerequisite: permission. 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	<i>3 credits</i>
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 explored.		
560	SOCIOLOGICAL THEORY	<i>4 credits</i>
Prerequisite: permission. An overview and examination of theoretical issues in sociology, through the study of both classical and contemporary theoretical work.		
601	PROSEMINAR IN SOCIOLOGY	<i>1 credits</i>
Prerequisite: teaching/research assistant in sociology or permission of instructor. Introduction to professional aspects of sociology and major areas of study/research in the field. Seminar. Credit/Noncredit.		
602	FAMILY & SOCIETY	<i>3 credits</i>

Prerequisites: 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 SOCIO	<i>4 credits</i>
Prerequisite: Graduate standing in Sociology or permission of instructor. Introduction to 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 72211) Lecture.		
615	EPIDEMIOLOGIC MTHS IN HLTH RSH	<i>3 credits</i>
Prerequisites: 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 & EMOT	<i>3 credits</i>
Prerequisites: Graduate standing in sociology or permission of instructor. A sociological perspective is employed to analyze and understand the production, distribution and utilization of socially created sentiments and emotions. (Same as KSU 6/72435). Seminar.		
628	PROF & ETHICAL ISSUES IN SOCIO	<i>3 credits</i>
Prerequisite: Graduate standing in Sociology. Introduction to professional and ethical issues including the logic of inquiry, developing effective approaches to independent learning and research, the research certification process and plagiarism. Lecture.		
631	SOCIAL PSYCHOLOGY	<i>3 credits</i>
Prerequisites: 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 phenomena. (Same as KSU 72430) Seminar.		
634	PERSONALITY & SOCIAL SYSTEMS	<i>3 credits</i>
Prerequisites: 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	<i>3 credits</i>
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 6/72566).		
646	SOCIAL INEQUALITIES	<i>3 credits</i>
Prerequisites: Graduate standing in sociology or permission of instructor. Seminar dealing with social class and castes with special reference to American social structure. (Same as KSU 72546) Seminar.		
648	COMPLEX ORGANIZATIONS	<i>3 credits</i>
Prerequisites: 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	<i>3 credits</i>
Prerequisites: 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	<i>3 credits</i>
Prerequisites: 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 72870) Seminar.		
656	SOCIOLOGY OF HEALTH CARE	<i>3 credits</i>
Prerequisites: 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 contemporary urban United States. (Same as KSU 72323).		
663	DEVIANCE	<i>3 credits</i>
Prerequisites: Graduate standing in sociology or permission of instructor. Examination of nature and types of deviance. Problems and issues in theory and research. (Same as KSU 72760) Seminar.		
664	SOCIOLOGY OF CRIMINAL BEHAVIOR	<i>3 credits</i>
Prerequisites: Graduate standing in sociology or permission of instructor. Analysis of relationship of crime and delinquency to social structure and social processes. Responses by criminal justice agencies. Seminar.		
665	JUVENILE DELINQUENCY: THRY/RSH	<i>3 credits</i>
Prerequisites: Graduate standing in sociology or permission of instructor. Analysis of theories of delinquency; ecological, class structural, substructural, etc. Review of relevant research also presented. Seminar.		
666	SOCIOLOGY OF CORRECTIONS	<i>3 credits</i>
Prerequisites: Graduate standing in sociology or permission of instructor. Analysis of correctional institution as social system; its formal structure and informal dynamics. Analysis of present state of corrections research. Seminar.		
677	FAMILY ANALYSIS	<i>3 credits</i>
Prerequisites: Graduate standing in sociology or permission of instructor. Analysis and evaluation of sociological theory and research in the family. Concentration on techniques of theory construction and research design in sociological study of the family. (Same as KSU 72543) Seminar.		

678	SOCIAL GERONTOLOGY	<i>3 credits</i>
Prerequisites: Graduate standing in sociology or permission of instructor. Impact of aging upon individuals and society. Reactions of individuals and society to aging. (Same as KSU 72877) Seminar.		
679	POLITICAL SOCIOLOGY	<i>3 credits</i>
Prerequisites: 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	<i>3 credits</i>
Prerequisites: 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	<i>3 credits</i>
Prerequisites: Graduate standing in sociology or permission of instructor. Advanced seminar in theories of social change. (Same as KSU 72320) Seminar.		
696	MASTERS RESEARCH PAPER	<i>1-6 credits</i>
(Must be repeated for a minimum of 6 credits). Prerequisites: Graduate standing in sociology or permission of instructor. Supervised writing of a paper for Master's Research Paper option.		
697	READINGS IN CONTEMP SOCGL LIT	<i>1-3 credits</i>
(May be repeated) Prerequisites: 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.		
698	DIRECTED RESEARCH	<i>1-3 credits</i>
(May be repeated) Prerequisites: Graduate standing in sociology or permission of instructor. Empirical research to be conducted by the student under graduate faculty supervision.		
699	MASTERS THESIS	<i>1-6 credits</i>
(Must be repeated for a minimum of 6 credits). Prerequisites: Graduate standing in sociology or permission of instructor. Supervised thesis writing.		
700	COLLEGE TEACHING OF SOCIOLOGY	<i>3 credits</i>
Prerequisite: teaching assistant in Sociology or permission of instructor. Training and experience in college teaching of sociology. Not approved as credit toward degree. Seminar.		
706	MULTIVARIATE TECHNIQUES IN SOC	<i>4 credits</i>
Prerequisites: 604 or permission; a sociology graduate student only. Methodological problems using advanced multivariate techniques in analysis of sociological data. Topics include nonexperimental causal analysis such as recursive and nonrecursive path analysis. (Same as KSU 72217).		
709	ADVANCED DATA ANALYSIS	<i>4 credits</i>
Prerequisite: 706 or equivalent, graduate standing in Sociology or permission of instructor. Critical examination of data analysis techniques having particular relevance to research problems in sociology. (Same as KSU 72218) Lecture.		
710	SOCIAL SAMPLING	<i>3 credits</i>
Prerequisites: 604, graduate standing in sociology or permission of instructor. Theory and methods of sampling in sociology. Topics includes sample design, sampling efficiency, nonresponse, mortality in longitudinal designs, urban, organizational, and survey sampling, stratified and cluster sampling. Seminar.		
711	SURVEY RESEARCH METHODS	<i>3 credits</i>
Prerequisites: 603 and 604, or permission. In-depth study of design and administration of social surveys. (Same as KSU 72220) Seminar.		
714	QUALITATIVE METHODOLOGY	<i>4 credits</i>
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) Lecture.		
722	EARLY SOCIOLOGICAL THOUGHT	<i>3 credits</i>
Prerequisite: graduate standing in sociology or permission of instructor. Two to four major pre-1930 sociological theorists will be examined in depth. (Same as KSU 72191) Seminar.		
723	CONTEMP SOCIOLOGICAL THOUGHT	<i>3 credits</i>
Prerequisite: 722, Graduate standing in sociology or permission of instructor. 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 72105) Seminar.		
726	STRATIFICATION & HEALTH	<i>3 credits</i>
Prerequisites: 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. Race, class, and gender stratification of health care workers. (Same as KSU 72328)		
727	SOC OF OCC, PROF & HLTH CARE	<i>3 credits</i>
Prerequisites: Graduate standing in sociology or permission of instructor. Sociological examination of the organization of work in the health care field with emphasis on occupations, professions, and health care delivery. (Same as KSU 72327)		
728	SOCIOLOGY OF MENTAL HLTH & DIS	<i>3 credits</i>

Prerequisites: 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)

747	URBAN SOCIOLOGY	<i>3 credits</i>
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Prerequisites: 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 72659) Seminar.

753	ST: SOCIAL ORGANIZATION	<i>1-3 credits</i>
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(May be repeated). Prerequisite: Graduate standing in Sociology or permission of instructor. Open course to cover content area not readily subsumable under other headings. Content of course to be determined by instructor. (Same as KSU 72595) Seminar.

797	INDIVIDUAL INVESTIGATION	<i>1-3 credits</i>
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(May be repeated). Prerequisites: 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)

798	INDIVIDUAL INVESTIGATION	<i>1-3 credits</i>
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(May be repeated). Prerequisites: 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	<i>1-10 credits</i>
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(Must be repeated for a minimum of 30 credits) Prerequisites: Graduate standing in sociology or permission of instructor. Dissertation. (Same as KSU 82199)



Public Administration and Urban Studies ** (3980)

590	W: URBAN STUDIES	<i>1-3 credits</i>
Prerequisite: permission. (May be repeated for a maximum of six credits) Group studies of special topics in urban studies and public administration. May not be used to meet core graduate requirements. May be used for elective credit only.		
600	BASIC QUANTITATIVE RESEARCH	<i>3 credits</i>
Prerequisite: permission. Examines basic framework of social science research methodologies and basic complementary statistical techniques, including probability and sampling.		
601	ADV RESEARCH & STAT METHODS	<i>3 credits</i>
Prerequisite: 600. Extends study of social science to include more advanced research designs and multivariate statistical techniques.		
602	HISTORY OF URBAN DEVELOPMENT	<i>3 credits</i>
Examination of major literature on processes of urbanization in United States and selected facets of urban institutional development.		
609	HEALTH BEHAVIOR: THEORY & APPL	<i>3 credits</i>
Prerequisite: Graduate standing/status. This course provides an overview of behavior change theories at the individual, interpersonal and community levels with an emphasis on application in health policy decision-making.		
610	LEGAL FOUNDATIONS OF PUBLIC AD	<i>3 credits</i>
Prerequisite: permission. Introduction to the legal foundations and context of public administration, including the interaction of the course, public organizations, public administration and the public.		
611	INTRO TO PROFESSION OF PUB ADM	<i>3 credits</i>
Prerequisite: permission. Introduction to the theory and practice of the field of public administration. Foundation course for later MPA study.		
612	NATIONAL URBAN POLICY	<i>3 credits</i>
Prerequisite: permission. Major federal policies that relate to urban problems examined in regard to policy-making processes, implementation and impact.		
613	INTERGOVERNMENTAL MANAGEMENT	<i>3 credits</i>
Prerequisite: permission. Examines the field of intergovernmental relations as it applies to urban administration and management.		
614	ETHICS & PUBLIC SERVICE	<i>3 credits</i>
Prerequisites: 18 credit hours in the MPA program or permission. Examination of the ethical problems and implications of decisions and policies made by those whose actions affect the public and public policy.		
615	PUBLIC ORGANIZATION THEORY	<i>3 credits</i>
Prerequisite: permission. Examines the development of public organizational theory and the current status of theoretical developments in the field of public administration.		
616	PERSONNEL MGMT IN PUBLIC SECT	<i>3 credits</i>
Fundamental issues and principles of public sector personnel administration, including recruitment, selection, training, motivation, supervision, evaluation, labor relations and affirmative action.		
617	LEADERSHIP & DECISION-MAKING	<i>3 credits</i>
Examines the context of public organizational management including relevant organizational theories, strategic management and planning and public sector leadership.		
618	CITIZEN PARTICIPATION	<i>3 credits</i>
The fundamental theory, background, techniques, and issues of citizen participation in urban policy-making.		
619	COMMUNITY ORGANIZING	<i>3 credits</i>
Prerequisite: permission. The course will examine the evolution and influence of neighborhood, community and "grass-roots" organizations on public policy making in urban areas.		
620	SOCIAL SERVICES PLANNING	<i>3 credits</i>
Prerequisite: permission. In-depth analysis of total social services requirements and various ways in which social services planning function is carried out in urban communities.		
621	URBAN SOCIETY & SERVICE SYSTEM	<i>3 credits</i>
Prerequisite: permission. Analysis of social bases of urban society; hierarchies, social problems, relationships to planning, public services.		

622	HEALTH PLAN & PUBLIC POLICY	<i>3 credits</i>
Basic knowledge of the health service delivery system is provided for planners and administrators in the public sector.		
623	PUBLIC WORKS ADMINISTRATION	<i>3 credits</i>
Prerequisite: permission. Examines the building, maintenance and management of public works.		
624	EMERGENCY MGT POLICY IMPL & ANLY	<i>3 credits</i>
Examines the implementation of emergency management policy at the federal, state, and local level: Analyzes current policy initiatives in this emerging field.		
625	STRATEGIC PERSPECT-EMERGENCY MGT	<i>3 credits</i>
Prerequisite: permission. Public administration responsibilities in emergency management. Examines unfunded mandates and the optimal strategies for success in the four phases of emergency management.		
626	GRANTSMANSHIP	<i>3 credits</i>
Students will gain knowledge of the grant-seeking and awarding processes. Emphasis is on public funding opportunities and public organizations in the States.		
627	CULTURAL COMPETENCE IN PUB SEC	<i>3 credits</i>
In this course students will learn how to effectively communicate with culturally diverse individuals and learn about various social stratification systems.		
640	FISCAL ANALYSIS	<i>3 credits</i>
Prerequisite: permission. Study of revenue and expenditure patterns of the city's government.		
641	URBAN ECONOMIC GROWTH & DEV	<i>3 credits</i>
Prerequisite: permission. Examination of urban economic unit and its susceptibility to social, economic, political and physical change.		
642	PUBLIC BUDGETING	<i>3 credits</i>
Prerequisite: permission. Current professional practice and theoretical issues in public budgeting and management of capital and operating budgets.		
643	INTRODUCTION TO PUBLIC POLICY	<i>3 credits</i>
Prerequisite: permission. Introduction to models of public policy formulation; identification of major policy issues; and the analysis of policy implementation and policy impact.		
644	PUBLIC SECTOR FUND MANAGEMENT	<i>3 credits</i>
Prerequisite: 640, 642. Provides an overview of theoretical approaches for recording and reporting data related to public projects or programs and reviews methods for investing project funds.		
645	PUBLIC SECTOR LABOR RELATIONS	<i>3 credits</i>
Prerequisite: 616. This course examines fundamental issues and principles of public sector labor relations with particular attention to collective bargaining processes and to administration of labor contracts.		
647	AGING POLICY	<i>3 credits</i>
In this course students will examine political institutions that impact the adoption and implementation of programs for the aged, including: Medicare, Medicaid, and Social Security.		
650	COMPARATIVE URBAN SYSTEMS	<i>3 credits</i>
Prerequisite: permission. Conceptual schemes and methodology for comparative urban analysis among a number of major cities selected from each continent.		
651	INTRO: CITY MANAGEMENT	<i>3 credits</i>
Prerequisite: completion of 611, or waiver by advisor. This course examines the historical role of city management in professionalizing local government operations and examines trends in management practice that affect the city manager.		
660	STRATEGIC MANAGEMENT	<i>3 credits</i>
This course examines disciplined effort to produce fundamental decisions and actions that shape what public organizations are, what they do and why they do it.		
661	PUBLIC PROJECT DESIGN & MGMT	<i>3 credits</i>
Prerequisites: 600, 642. Provides in-depth theoretical overview of the public project cycle including hands-on approaches to design and management. Examines frameworks for implementation, monitoring and analysis of project impact.		
662	FUNDRAISING & RESOURCE MGMT	<i>3 credits</i>
Prerequisite: permission. Examines alternative methods of fundraising and unique resource management challenges and opportunities of non-profit organizations.		
663	NON-PROFIT MANAGEMENT	<i>3 credits</i>
Prerequisite: permission. This course will provide students with a broad understanding of the operating environment, unique concerns of leadership, resource development, aspects of volunteerism, and management processes in non-profit organizations.		
664	MANAG INFO & TECH-PUBLIC SECTR	<i>3 credits</i>
Focus on issues that confront public managers in utilizing information as an organizational asset.		
671	PROGRAM EVAL IN URBAN STUDIES	<i>3 credits</i>
Prerequisite: 600 or equivalent. Major considerations appropriate for conducting evaluations of a wide variety of human service programs and policies affecting urban and metropolitan areas.		
673	COMPUTER APPLS IN PUBLIC ORGS	<i>3 credits</i>

Prerequisite: 600 and 601. Introduction to microcomputer applications in the public sector, including data entry, statistical analysis, report writing, graphical representation and spreadsheets.

674	ANALYTIC TECHN PUBLIC ADMIN	<i>3 credits</i>
Prerequisite: 600. Public sector applications of quantitative methods, including decision analysis, queuing theory, mathematical programming, and simulation.		
675	ADV TECHNIQUES-POLICY ANALYSIS	<i>3 credits</i>
Prerequisites: 600, 601. Public Sector application of techniques for analyzing policy proposals including decision analysis and simulations.		
680	SEL T: URBAN STUDIES	<i>1-3 credits</i>
Prerequisite: permission. Selected topics in specific areas of urban planning, in various developmental processes of cities, or in various urban policy and administrative issues. (A maximum of 27 credits may be earned in 680 and 681.)		
681	SEL T: URBAN STUDIES	<i>1-3 credits</i>
Prerequisite: permission. Selected topics in specific areas of urban planning, in various developmental processes of cities, or in various urban policy and administrative issues. (A maximum of 27 credits may be earned in 680 and 681.)		
690	SEMINAR IN URBAN STUDIES	<i>3 credits</i>
Prerequisites: 16 credits of urban studies core plus quantitative methods. Urban research methods applied to specific urban research area. Comprehensive paper required.		
691	MASTER'S COLLOQUIUM	<i>1 credits</i>
This course is required for masters' students on assistantships. The course reviews programmatic, research and curricula issues in the masters' programs.		
695	INTERN: PUBLIC ADM & URBAN STD	<i>1-3 credits</i>
Faculty-supervised work experience for "pre-service" students participating in policy planning and administration in public and non-profit organizations.		
697	INDIV STDS PUBL ADM&URBAN STDS	<i>1-3 credits</i>
Prerequisite: permission. Directed individual readings or research on specific area or topic. (May be repeated)		
699	MASTERS THESIS	<i>1-9 credits</i>
Prerequisite: permission. Supervised thesis writing. May be repeated for a total of nine credits, however, only six credits apply toward degree. Replaces two courses in specialization.		
700	ADVANCED RESEARCH METHODS I	<i>3 credits</i>
Prerequisite: master's level statistics or permission. Introduction to statistical techniques and methodologies in doctoral and postdoctoral research. Emphasis on conceptual and mathematical interrelationships.		
701	ADVANCED RESEARCH METHODS II	<i>3 credits</i>
Prerequisite: 700 or equivalent. Continuation of 700. Emphasis placed upon conceptual and mathematical interrelationships of multivariate statistical techniques as well as application of these techniques through computer analysis of urban data sets.		
702	URBAN THEORY I	<i>3 credits</i>
Prerequisite: permission. Review of major theoretical tradition examining urban problems; for students entering the doctoral program in urban studies (first in two-course sequence).		
703	URBAN THEORY II	<i>3 credits</i>
Prerequisite: 702. Review of major professional disciplines dealing with urban problems; for students entering the doctoral program in urban studies (second in two-course sequence).		
704	PUBLIC BUREAUCRACY	<i>3 credits</i>
Prerequisite: permission. Analysis of bureaucratic operations in the implementation of public policy, including special attributes of human service organizations and the democratic theory debate.		
705	ECONOMICS OF URBAN POLICY	<i>3 credits</i>
Prerequisite: master's level knowledge of macroeconomics and microeconomics or special permission. Use of research tools of economic analysis in seminar format to examine options available to urban policy makers in operation of public services and economic development of cities.		
706	PROGRAM EVALUATION	<i>3 credits</i>
Prerequisite: permission. Advanced treatment of topics in program evaluation.		
707	URBAN PLANNING & MGMT STRATEG	<i>3 credits</i>
Prerequisite: permission. Analysis of urban planning policy issues and strategies for implementation in public policy formulation. Emphasis on use of planning process as integrative mechanism.		
708	URBAN POLICY: HIST PERSPECTIVE	<i>3 credits</i>
Prerequisite: permission. Critical examination of major ideas about the city from Aristotle to the 20th Century and of the impact on urbanization on society and public policy.		
709	SYSTEMS & PROC OF POLICY ANALY	<i>3 credits</i>
Prerequisite: permission. Analysis of administrative processes within public organizations, federal, state and local in the United States; emphasis on urban community.		
710	QUALITATIVE RESEARCH METHODS	<i>3 credits</i>
Prerequisites: 700 and 701. Critical examination of Social Science Research methodologies such as content analysis. Open-ended survey techniques and other means of creating non-statistically generated data.		
711	SEMINAR- PUBLIC ADMINISTRATION	<i>3 credits</i>

Prerequisite: permission. In depth review and critique of major intellectual traditions, concepts and theories underlying public administration in the United States.

714	SEM IN POLICY ANALYSIS & EVAL	<i>3 credits</i>
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Prerequisite: permission. In depth review and critique of major intellectual traditions, concepts and theories underlying policy analysis and evaluation in the United States.

715	SEM IN URBAN & REGNL PLANNING	<i>3 credits</i>
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Prerequisite: permission. In depth review and critique of major intellectual traditions, concepts and theories underlying urban and regional planning in the United States.

716	THRTCL FNDTNS FOR PUBLIC AFFRS	<i>3 credits</i>
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Prerequisite: permission of instructor. This course critically considers the theoretical foundations for public affairs for scholarship and research. It contrasts traditional social and natural science inquiry and more recent alternative theories to PA theory.

720	COMPARATIVE PLANNING STRATEG	<i>3 credits</i>
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Prerequisite: 715 or permission. Review and analysis of alternative planning theories, institutions, and implementation strategies in a variety of national settings.

730	ETHICS IN GOVERNMENT	<i>3 credits</i>
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This course will explore the differences between individual and collective responsibility, private and public morality and the nexus between democratic and moral development.

731	THEORIES-PUBLIC BUDGET & FINAN	<i>3 credits</i>
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Prerequisite: 711. Examines the theories and perspectives that have shaped how government uses and implements budgets.

732	GOVERNANCE & ADMINISTRATION	<i>3 credits</i>
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Governance and administration are interrelated activities, yet have been taught as distinct activities. This course explores the connections and interrelatedness of the concepts.

733	THEORIES OF PUBLIC SECT HR MGT	<i>3 credits</i>
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Prerequisite: permission. Examination of the organizational behavior and administrative theories that support modern public personnel systems.

734	CNCPT & LGL FOUND-PUBLIC ADMN	<i>3 credits</i>
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Prerequisite: permission. Theoretical examination of how constitutional and administrative law influence public sector decision-making.

735	COMPARATIVE ADMINISTRATION	<i>3 credits</i>
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Prerequisite: permission. Examination of the various political and administrative frameworks within which public administrators function.

736	LEADING PUBLIC ORGANIZATIONS	<i>3 credits</i>
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Prerequisite: permission. Examination of the various theories of organizational leadership and their application in public organizations.

740	SURVEY/RSCH METHODS-PUBL SECT	<i>3 credits</i>
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Prerequisite: permission. Examination of the techniques and methods used by public organizations to enhance civic involvement. Critiques of methodologies based upon information needs and citizens surveyed.

741	ECONOMIC ANALYS IN PUBLIC ADMN	<i>3 credits</i>
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Review of analytical methods for urban socio-economic data gathering, modeling, analysis and reporting.

760	SEMINAR IN HEALTH POLICY	<i>3 credits</i>
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Comprehensive review of health policy using historical, political, and economic perspectives and contexts. Emphasizes frameworks for conducting health policy analyses.

780	PHD COLLOQUIUM	<i>1 credits</i>
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This course introduces new doctoral students to the perspectives and practices of doctoral study. This is a credit/ non-credit course.

788	URBAN POLICY STUDIES	<i>1-4 credits</i>
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(May be repeated 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 either as a required or an elective course.

795	PRO-SEMINAR	<i>3 credits</i>
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Prerequisite: successfully pass all comprehensive examinations. Seminar to discuss approaches to reasearching and writing the dissertation. Discussion of alternative methodologies, styles and perspectives. Credit/noncredit.

798	DIRECTED RESEARCH	<i>3 credits</i>
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Prerequisite: Permission. Under the close supervision of a faculty member, a student will utilize social science methods in applied research.

799	URBAN TUTORIAL	<i>3 credits</i>
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Prerequisite: permission. Intensive study of a particular approved field within urban studies and public affairs under supervision of tutor. (May be repeated once.)

899	DOCTORAL DISSERTATION	<i>1-12 credits</i>
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Prerequisite: Advancement 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 semester until dissertation is accepted. Minimum of 12 credits required. (May be repeated.) Credit/noncredit.

** Graduate-level courses only. See Graduate Bulletin.



New Media (7000)

100	INTRO NEW MEDIA: CREATIVE MIND	<i>3 credits</i>
In addition to an introduction to the history and theory of New Media, students will enhance their creative mind through seminar and simple practices. No prior art or digital media experience is required.		
300	NEW MEDIA II: CREATIVE PRACTIC	<i>3 credits</i>
Prerequisite or Corequisite: 100. Students practice various New Media technologies. No prior art or digital media experience is required.		
301	COOPERATIVE EDUCATION	<i>0 credits</i>
(May be repeated) For cooperative education students only. Work experience in business, industry, or governmental agency. Comprehensive performance evaluation and written report required.		
400	NEW MEDIA III:CREATIVE PROJ	<i>3 credits</i>
Prerequisite: 300. Students create their original New Media Art projects through research, proposals, productions and a show.		
401	HISTORY OF PERF & NEW MEDIA	<i>3 credits</i>
Prerequisite: 7100:101 or permission. A survey of performance art and "new media," including video art and sound art, this course takes an historical overview of its subjects from the emergence of performance art in the late 19th century (including dance, theater, and music) and video and sound art in the 1960s, through the present moment.		



Art - Myers School of (7100)

100	SURVEY OF HISTORY OF ART I	<i>3 credits</i>
Architecture, sculpture, painting and related art from prehistory through the Romanesque period are considered.		
101	SURVEY OF HISTORY OF ART II	<i>3 credits</i>
Prerequisite: 100. Architecture, sculpture, painting and related art from the Gothic era through Romanticism are considered.		
102	SURVEY OF HISTORY OF ART III	<i>3 credits</i>
The third component in a 3-part series of introductory art history courses, this class covers the modern era, from Realism, Impressionism, and the Pre-Raphaelites through the present moment.		
103	ARTS ORIENTATION	<i>0 credits</i>
Corequisite: with first 7100 art course. Orientation to the information and strategies necessary to aid new art students in their understanding of the field of art.		
104	VISUAL ARTS APP IN ELEM CLSSRM	<i>3 credits</i>
Exploration of methods, materials, processes and visual techniques relating two- and three-dimensional art experiences for the teacher of elementary children. No credit as an elective course for art majors.		
105	INTRODUCTION TO ART EDUCATION	<i>2 credits</i>
An introduction to the art teaching profession, this course covers historical and contemporary issues and practices in art education and in public schooling in the United States.		
131	FOUNDATION DRAWING I	<i>3 credits</i>
Corequisite: 103. Introduction to drawing materials and techniques with an emphasis on observation, representation, and formal principles of composition and design.		
132	INTRODUCTION TO DESIGN	<i>3 credits</i>
Introductory course in design theory increases the graphic designer's ability to solve visual problems using both practical and theoretical approaches.		
144	FOUNDATION 2D DESIGN	<i>3 credits</i>
Fundamental information about the theory and practice of visual design as applied to surfaces, including composition, color and pictorial illusions with lecture and studio experience.		
145	FOUNDATION 3D DESIGN	<i>3 credits</i>
Introduction to meaning of "design" and act of designing in real space. Study of naturally occurring form, structure and process.		
184	TYPOGRAPHY 1	<i>3 credits</i>
Prerequisite: 132. Studio experience in concept development and processes, tools and materials of graphic designers. Elementary design problems in graphic design.		
185	INTRO: COMPUTER GRAPHICS	<i>3 credits</i>
(May be repeated for a total of six credits) Prerequisites: 131 and 144 or permission of instructor. Introduction to the use of microcomputers as a creative tool for visual artists and designers.		
210	VISUAL ARTS AWARENESS	<i>3 credits</i>
Prerequisite: 3400:210 or 3400:221. Lecture course providing appreciation and understanding of arts of various types/ periods with emphasis on topics and influences on societies, rather than historical sequence		
213	INTRODUCTION TO PRINTMAKING	<i>3 credits</i>
Prerequisites: 131 or 144. A fast-paced introduction to traditional and contemporary high-tech/low-tech printmaking processes including relief, intaglio, lithography, and screenprint as well as digital printmaking.		
214	RELIEF/SCREENPRINT	<i>3 credits</i>
Prerequisite: 213. An introduction to the history, process, and contemporary practice of relief printing and screenprinting.		
216	INTAGLIO/LITHOGRAPHY	<i>3 credits</i>
Prerequisite: 213. An introduction to the history, process, and contemporary practice of intaglio and lithographic printing.		
222	INTRODUCTION TO SCULPTURE	<i>3 credits</i>
Prerequisite: 145. Exploration of aesthetic factors influencing sculptural statements. Development of proficiency in the use of tools, materials and techniques.		
223	SCULPTURE: STONE	<i>3 credits</i>

Prerequisite: 222. Beginning level lecture and studio course using both traditional hand tools for the creation of stone sculpture. History of the use of stone, evolution of stone working technology and contemporary artists working with stone.

224	INSTALLATION ART	<i>3 credits</i>
Prerequisite: 222. Lecture and studio course introducing the student to the medium of installation art, a major emphasis in the contemporary art scene. The history and evolution of installation art and its use by contemporary artists.		
231	INTERMEDIATE DRAWING	<i>3 credits</i>
Prerequisite: 131. Continued investigation of basic drawing concepts. Introduction to drawing in color with further development of observation, design, technique and conceptual skills.		
233	FOUNDATION LIFE DRAWING	<i>3 credits</i>
Prerequisite: 131. Perceptual problems in drawing from the life model. Study of skeletal, muscular, mechanical nature of human figure and application of this knowledge to the resolution of aesthetic problems. (May be repeated for a total of six credits.)		
234	ANATOMY FOR ARTISTS	<i>3 credits</i>
Prerequisite: 233. Studio/lecture experience in drawing and sculpture with an emphasis on human skeletal, muscular, and surface structure.		
243	INTRODUCTION TO PAINTING	<i>3 credits</i>
Prerequisites: 131, 144. Study of aesthetic and technical problems involved in painting. Emphasis on painting from observation, and understanding of color in painting.		
244	COLOR CONCEPTS	<i>3 credits</i>
Prerequisites: 131 and 144. Lecture and studio experience giving information concerning perception of color, additive color phenomena of light, subtractive color phenomena of pigments and dyes, color notation systems and psychological effects of color.		
246	INTRO: WATER-BASED MEDIA	<i>3 credits</i>
(May be repeated for a total of six credits.) Prerequisites: 131, 144. Experimentation with water-based media such as tempera, acrylic, and gouache.		
250	FOUNDATION REVIEW	<i>0 credits</i>
Prerequisites: 131, 144, 145, 233. Credit/noncredit course. Faculty review of art foundation studio work from prerequisite/corequisite courses.		
251	WATERCOLOR	<i>3 credits</i>
Prerequisites: 131, 144. Students will investigate traditional and contemporary watercolor techniques and mixed media while addressing issues of composition and conceptual concerns.		
253	CERAMICS FOR NON-ART MAJORS	<i>3 credits</i>
Hand-building, glazing and kiln loading. Link skills to personal experience, ceramic history and contemporary art and craft issues. No credit toward a major in art.		
254	INTRODUCTION TO CERAMICS	<i>3 credits</i>
Prerequisites: 131 and 144. Studio/lecture course exploring potentials of hand-building techniques in both sculptural and functional forms. Clay processing, glaze application and practical kiln firing.		
266	INTRODUCTION TO METALSMITHING	<i>3 credits</i>
Prerequisite: 145, 144. Studio experience in which student is introduced to properties of metals, processes of silversmithing and design and production of jewelry.		
268	COLOR IN METALS	<i>3 credits</i>
Prerequisite: 266. Introduction to a variety of techniques to achieve and/or combine color in metals. Techniques such as anodizing aluminum, enameling and the application of color resins and plastics will be explored.		
274	PHOTOGRAPHY I - NON-ART MAJORS	<i>3 credits</i>
Film-based black and white photography including camera control, film processing, and darkroom printing. 35mm camera with full manual control required. No credit toward art major.		
275	INTRODUCTION TO PHOTOGRAPHY	<i>3 credits</i>
Prerequisites: 131, 144. Film-based black and white photography including camera control, film processing and darkroom printing. 35mm film camera with full manual control required.		
276	INTRO: COMMERCIAL PHOTOGRAPHY	<i>3 credits</i>
Prerequisite: 274 or 275. Corequisite: 280. Students are introduced to the numerous commercial applications of studio and location photography while working through a series of advertising related photographic projects.		
280	DIGITAL IMAGING	<i>3 credits</i>
Prerequisites: 276 or 289 or Corequisite: 276. An exploration of contemporary digital image capture, manipulation, output and distribution, emphasizing digital image concepts, aesthetics and production.		
281	DESIGN FOR THE WEB & DEVICES I	<i>3 credits</i>
Prerequisite: 280. This course introduces the process of planning designing and producing XHTML and CSS standard sites with an emphasis on the creative aspects of web development.		
282	DESIGN FOR WEB AND DEVICES II	<i>3 credits</i>
Prerequisite: 281. Building on knowledge from 7100:281 Designing for the Web and Devices I students will review IA, Javascript, XML and advanced Dreamweaver for web distribution on computer screens and handheld devices.		
283	DRAWING TECHNIQUES	<i>3 credits</i>

Prerequisites: 131 and 132. Includes advanced drawing and presentation techniques commonly used in graphic design. Various presentation and design problems will be encountered stressing use of selected drawing methods and processes.

288	TYPOGRAPHY 2	<i>3 credits</i>
Prerequisite: 184. Introduction to typographic design to communicate. Study of letterforms, history, comping skills, layout design and digital technology.		
289	PRODUCTION 1	<i>3 credits</i>
Prerequisite: 132. A computer-based course. Using industry-standard software, students focus on incorporating type and image to produce comprehensive design solutions.		
300	ART SINCE 1945	<i>3 credits</i>
Prerequisite: 101 or permission of instructor. Consideration of significant developments in visual art forms since World War II in architecture, sculpture, printing, photography, metal, textile, ceramics, printmaking and graphic design.		
301	MEDIEVAL ART	<i>3 credits</i>
Prerequisite: 101 or permission of instructor. Painting, mosaics, architecture, sculpture, and luxury arts of medieval Europe from 4th through 14th centuries.		
302	ART IN EUROPE- 17TH-18TH CNTRY	<i>3 credits</i>
Prerequisite: 101 or permission of instructor. Analysis of major European examples of architecture, landscape design, painting, prints and sculpture from beginning of the 17th Century until approximately 1850.		
303	ITALIAN RENAISSANCE ART	<i>3 credits</i>
Prerequisite: 101 or permission of instructor. Study of architecture, painting and sculpture of Italy during 13th through 16th Centuries.		
306	RENAISSANCE ART IN NRTH EUROPE	<i>3 credits</i>
Prerequisite: 101 or permission of instructor. Painting, architecture, and sculpture of northern Europe from 14th through 16th centuries.		
307	HISTORY OF GRAPHIC DESIGN	<i>3 credits</i>
Prerequisite: 101 or permission of instructor. A lecture course analyzing the development of graphic design as an art form from Neolithic sources to the present.		
308	ART OF AFRICA AND THE DIASPORA	<i>3 credits</i>
Examines the art of the African continent as well as the art of African peoples throughout the Diaspora, including contemporary manifestations globally.		
309	GREEK ART	<i>3 credits</i>
The course presents art and architecture of Ancient Greeks, and focuses on major monuments, myths, rituals, socio-political constructs, and methodological issues associated with Greek Art.		
310	4D DESIGN: MOTION	<i>3 credits</i>
Prerequisites: 280, 289, 387 or by permission. Study the history of animation and the principles of animation. Design motion graphics in a non-linear environment. Emphasis on audio, video, type and image.		
311	4D DESIGN: INTERACTIVITY	<i>3 credits</i>
Prerequisites: 280, 289, 387 or by permission. Students are introduced to interactivity, user interaction, time-based and on-screen design with a focus on design principles and concerns of type, image, audio, video and animation.		
317	PRINT MATRIX	<i>3 credits</i>
Prerequisites: 214 and 216. Intermediate printmaking class requiring the application of printmaking to the production of imagery for specific printmaking applications - Book Arts, Hybrid Prints, Serial Imagery, etc.		
318	PORTRAIT LIGHTING	<i>3 credits</i>
Prerequisite 276. Studio and location lighting techniques for commercial and fine art portraiture.		
319	PRINTMAKING REVIEW	<i>0 credits</i>
Prerequisites: 317. A committee of full-time faculty review portfolio of studio work completed in all printmaking courses.		
320	PRODUCT PHOTOGRAPHY	<i>3 credits</i>
Prerequisite: 276. Professional skills are further developed via studio and tabletop photography assignments based on current trends in illustration and advertising photography.		
322	SCULPTURE II	<i>3 credits</i>
(May be repeated for a total of nine credits) Prerequisite: 222 or permission. Continuation of 222. Addresses more advanced techniques. May include fabrication, casting, carving, or assemblage.		
323	LOST WAX CASTING	<i>3 credits</i>
(May be repeated for a total of six credits.) Prerequisites: 222 or 266. Bronze and aluminum casting using the lost wax process. Students learn foundry techniques and apply them to individual artistic statements.		
335	INTERMEDIATE LIFE DRAWING	<i>3 credits</i>
Prerequisites: 233. Continued development of the content established in Life Drawing with additional emphasis on draped models, drawing materials and aesthetics. (May be repeated for a total of nine credits.)		
348	INTERMEDIATE PAINTING	<i>3 credits</i>
(May be repeated for a total of six credits, but limited to a maximum of three credits in a given medium) Prerequisite: 243. Development of personal concepts and imagery through investigation of historical and contemporary styles and issues.		

350	PAINT/DRAWING PORTFOL REVIEW	<i>0 credits</i>
Prerequisite: Two courses in 7100:348 Intermediate Painting. A committee of full-time faculty review portfolio of student work completed in prerequisite courses.		
353	THROWING	<i>3 credits</i>
Prerequisite: 254. Emphasis on making pottery using the potter's wheel as well as organization and planning skills needed to make glazes and fire kilns.		
355	CONTEMPORARY ART ISSUES	<i>3 credits</i>
Prerequisite: Completion of major review in selected field of study. Discussion course for advanced students in any visual arts discipline, dealing with concepts and critical theories related to current practice of the visual arts.		
366	METALSMITHING II	<i>3 credits</i>
(May be repeated for a total of six credits) Prerequisite: 266. Continuation of experiences presented in 266 with further development of skills and expansion of technical knowledge.		
368	COLOR IN METALS II	<i>3 credits</i>
(May be repeated for a total of 12 credits.) Prerequisite: 268. Continuation of 268. Advanced projects designed to develop the student's aesthetic values in color in metals. Emphasis on individual approach and experimentation.		
370	HISTORY OF PHOTOGRAPHY	<i>3 credits</i>
Prerequisite: 102. A lecture course studying the history of photography from its invention to contemporary issues.		
374	PHOTOGRAPHY II NON-ART MAJORS	<i>3 credits</i>
Prerequisite: 274. Projects designed to expand the student's awareness of technical conceptual and aesthetic issues in photographic images. 35mm film camera with full manual control required.		
375	PHOTOGRAPHY II	<i>3 credits</i>
Prerequisite: 275. Projects designed to expand student's awareness of technical, conceptual and aesthetic issues in photographic images. 35mm film camera with full manual control required.		
377	MEDIUM AND LARGE FORMAT PHOTOG	<i>3 credits</i>
Prerequisite: 374 or 375. A technical course using medium and large format film cameras, which are furnished for the course's duration. Topics include camera movements, advanced exposure and development techniques.		
378	ALTERNATIVE PHOTOGRAPH PROCESS	<i>3 credits</i>
Prerequisites: 374 or 375. Exploration in alternative photographic processes using hand-coated Cyanotype, Van Dyke Brown and Platinum emulsions, with digitally created large-format negatives.		
381	DIGITAL IMAGING II	<i>3 credits</i>
Prerequisite: 280. Advanced digital imaging development and manipulation with an emphasis on preparation and use of digital images in print, multimedia and web applications.		
382	GRAPHIC DESIGN JUNIOR REVIEW	<i>1 credits</i>
Prerequisites: 250 and 288; Corequisites: 387 and 384. Junior level review by graphic design faculty. Students present a portfolio of work from specified courses that exemplify creative and technical competencies.		
383	MULTIMEDIA PRODUCTION	<i>3 credits</i>
(May be repeated for a total of six credits.) Prerequisite: 285. Introduction to the theory and methods of contemporary multimedia production. Exploration of the hardware/software employed in the organization, development and production of multimedia presentations.		
384	PROFESSIONAL DESIGN PRACTICES	<i>2 credits</i>
Prerequisite: 288; corequisite: 387 and 382. Comprehensive overview of standard business practices specific to the design field. Prepares students to work as interns in professional creative environments.		
385	COMPUTER 3-D MODEL/ANIMATION	<i>3 credits</i>
Prerequisites: 145, 185 or permission. Advanced computer imaging course with an emphasis in three-dimensional modeling and animation. Can be repeated for a total of 9 credits.		
387	TYPOGRAPHY 3	<i>3 credits</i>
Prerequisite: 288. Corequisite: 384. Integration of typography, photography, copywriting and other visual elements into advertising and design. Students also build a junior level portfolio.		
388	PRODUCTION 2	<i>3 credits</i>
Prerequisite: 276, 387. More complex projects with emphasis given to mechanical preparation of finished art for various printing processes.		
401	ST: HISTORY OF ART	<i>1-3 credits</i>
(May be repeated for credit when a different subject or level of investigation is indicated) Prerequisites: 101 or permission of instructor. Lecture course in which subject is specified each time course is offered. Focuses upon an art movement, time period, the production of a single artist or a specific art medium.		
402	MUSEOLOGY	<i>3 credits</i>
Lecture course dealing with museum science, including museum history, staff structures, art handling, storage, and presentation and exhibit preparation.		
403	ART AND CRITICAL THEORY	<i>3 credits</i>
Prerequisites: 100, 101 or permission of the instructor. This course, designed for both studio and art history majors, surveys the major theoretical currents in contemporary criticism and art history.		
405	HISTORY OF ART SYMPOSIUM	<i>1-3 credits</i>

(May be repeated for credit when a different subject is indicated) Prerequisite: one art history course beyond 101 or permission of instructor. Lecture, individual research and evaluation, group discussion related to a specific time period or to an artistic problem.

407	METHODS OF ART HISTORY	<i>3 credits</i>
Prerequisite: 101 or permission of the instructor. This course explores the history of the discipline and the permutations it has undergone since its establishment in the early years of the nineteenth century.		
409	TIME-BASED MEDIA	<i>3 credits</i>
(May be repeated for a total of six credits.) Prerequisite: 285. Through the development of increasingly complex projects, students explore the conceptual and aesthetic considerations of creating motion media based presentations.		
410	METHODS OF TEACHING ELEM ART	<i>3 credits</i>
Prerequisite: 105. Corequisite: 428. A field based course presenting the necessary skills and knowledge to successfully implement, plan, instruct, and assess a diverse art-based curriculum for the elementary classroom.		
411	METHODS OF TEACH SECONDARY ART	<i>3 credits</i>
Prerequisite: 105. Corequisite: 429. A field based course presenting the necessary skills and knowledge to successfully implement, plan, instruct, and assess a diverse art-based curriculum for the secondary classroom.		
412	STUDENT TEACHING COLLOQUIUM	<i>1 credits</i>
Prerequisite: Senior status, successful completion of field experience, and permission of instructor. Corequisite: 5300:495. 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.		
413	SURVEY OF ASIAN ART	<i>3 credits</i>
This course introduces the student to the historical, cultural, political, and religious aspects of civilization that influenced the aesthetics of Asian art.		
418	MULTIPLES AND MULTIPLICITY	<i>3 credits</i>
Prerequisites: Student must have Junior standing and have completed at least one 7100:300 level course in their major. Advanced printmaking class recommended for studio majors working with multiples, variability, and production requiring students to define and complete their own projects.		
419	ST: PRINT	<i>3 credits</i>
Prerequisites: 131 or 144 or 145. Investigation in specialized printmaking media like Photogravure, Digital Printing, and Book Arts among others. May be offered in conjunction with university sponsored residency or travel.		
420	SCULPTURE PORTFOLIO REVIEW	<i>0 credits</i>
Perquisites: 7100:422; corequisite: 7100:422. A committee of full-time faculty reviews portfolio of studio work completed in prerequisite/corequisite courses.		
422	ADVANCED SCULPTURE	<i>3 credits</i>
(May be repeated for a total of 15 credits.) Prerequisite: 250 and 322. Development of individual points of view and sculptural statements.		
423	COMMUNITY BASED ART EDUCATION	<i>3 credits</i>
A service learning course for art educators that combines traditional lecture, demonstration, and hands-on workshop to introduce students to contemporary practices in community-based arts.		
424	MIDDLE SCHOOL MATERIALS & TECH	<i>3 credits</i>
A lecture course in which students will a gain hands-on approach to developing instructional art materials and lessons for the middle school.		
425	CERAM: METHDS, MATERLS, & CNCP	<i>3 credits</i>
Prerequisites: 131, 145. (Lab) 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.		
426	EARLY CHILDHOOD ART EDUCATION	<i>3 credits</i>
A lecture course for art educators exploring visual arts as a vehicle for whole child development and learning across the curriculum in P,K-5 school settings.		
427	ART IN THE INCLUSIVE CLASSROOM	<i>3 credits</i>
Prerequisite: 5100:220. Art education course exploring the use of art with diverse populations through lecture, hands on art making and site visitations.		
428	ELEMENTARY FLD EXP: ART LICEN	<i>1 credits</i>
Corequisite: 410. Instructional experience in the P,K-6 art classroom to apply theory and research into practice.		
429	SECONDARY FLD EXP: ART LICEN	<i>1 credits</i>
Corequisite: 411. Instructional experience in the 7-12 art classroom to apply theory and research into practice.		
430	PROFESS PRAC FOR ART EDUCATORS	<i>1 credits</i>
Prerequisites: 410, 411. A lecture course providing support and guidance to develop the pre-professional skills and knowledge necessary for employment in the field of Art Education.		
450	ADVANCED LIFE DRAWING	<i>3 credits</i>
Prerequisite: 335. Drawing from the live model, with an experimentation leading to an individual style. (May be repeated for a total of 9 credits).		
452	SERVICE LEARNING IN ART	<i>3 credits</i>
Prerequisite: senior standing. An interdisciplinary, lecture/studio course that integrates fine art and design to promote understanding of the importance of sustained community outreach and serving as arts advocates.		

453	ADVANCED THROWING	<i>3 credits</i>
(May be repeated for a total of 6 credits.) Prerequisite: 353. Emphasis on making pottery using the potters wheel beyond the beginning level including organization and planning skills needed to make and exhibit or sell items.		
454	ADVANCED CERAMICS	<i>3 credits</i>
(May be repeated for a total of 18 credits.) Prerequisite: 250 and 353 or 354. Emphasis on refinement of technique toward personal aesthetic statement in preparation for professional or private studio production. Student may choose a general survey of subject matter or a more concentrated area of study.		
455	ADVANCED PAINTING	<i>3 credits</i>
Prerequisites: 231, 348. Exploration of aesthetic and conceptual issues involved in developing an individual stylistic approach to image making, leading to senior portfolio and BFA exhibition. (May be repeated for a total of 15 credits)		
456	CERAMIC PORTFOLIO REVIEW	<i>0 credits</i>
Prerequisites: 454. A committee of full-time faculty reviews portfolio of studio work completed in prerequisite courses.		
465	PAINT/DRAWING SEN EXHIB PREP	<i>0 credits</i>
Prerequisites: senior status, the second 455 Advanced Painting/Drawing. Preparation of the portfolio to be exhibited in the Senior Exhibition.		
466	ADVANCED METALSMITHING	<i>3 credits</i>
(May be repeated for a total of 18 credits.) Prerequisites: 250 and 366. Investigation in depth of aesthetic and technical problems of metalsmithing. Student works on individual projects under guidance from instructor.		
467	METALSMITHING PORTFOLIO REVIEW	<i>0 credits</i>
Prerequisite: 466; corequisite: 466. A committee of full-time faculty review portfolio of studio work completed in prerequisite courses.		
472	PHTO III: COLOR FR NON-ART MAJ	<i>3 credits</i>
Prerequisite 374. Advanced level lecture, studio and lab experience in color photography introducing students to technical, aesthetic and conceptual issues of the medium.		
473	PHOTOGRAPHY III: COLOR	<i>3 credits</i>
Prerequisite 375. Advanced level lecture, studio and lab experience in color photography introducing students to technical, aesthetic and conceptual issues of the medium.		
474	ADV PHOTOGRAPHY NON-ART MAJORS	<i>3 credits</i>
Prerequisite: 374. Studio course with emphasis on advanced individual projects.		
475	ADVANCED PHOTOGRAPHY	<i>3 credits</i>
(May be repeated for a total of 21 credits.) Prerequisite: 250 and 375. Photographic media, light and photographic equipment manipulated experimentally to produce creative graphic images. Student works under guidance of instructor on advanced individual projects.		
476	PHOTOGRAPHY PORTFOLIO REVIEW	<i>0 credits</i>
Prerequisite: 475. A committee of full-time faculty reviews portfolio of studio work completed in prerequisite/corequisite courses.		
479	PROF PHOTOGRAPHIC PRACTICES	<i>3 credits</i>
Prerequisites: 475 and Senior Status. Introduction to business and marketing practices in the fine art and commercial photography industry. Financial, legal, organizational, promotional, interpersonal, and ethical practices will be covered.		
480	ADVANCED GRAPHIC DESIGN	<i>3 credits</i>
(May be repeated for a total of nine credits) Prerequisite: 388 or permission of instructor. Student works on advanced-level individual projects under supervision of instructor.		
481	DESIGN X NINE	<i>3 credits</i>
(May be repeated for a total of nine credits.) Prerequisite: 388. Course focusing on professional business practices. Students chosen by portfolio review in junior year. Practical experience gained through working with clients and outside sources.		
482	CORP IDENTITY & GRAPHIC SYST	<i>3 credits</i>
Prerequisite: 384 and 388. Advanced projects in corporate identity, graphic systems analysis, design. Problem solving for these specific areas of graphic design within mechanical limitations of art reproduction.		
483	GRAPHIC DESIGN PRESENTATION	<i>3 credits</i>
Prerequisite: 482. Students prepare a professional portfolio and resume. The course includes project development, portfolio review and exhibition.		
484	ILLUSTRATION	<i>3 credits</i>
(May be repeated for a total of nine credits.) Prerequisite: 283 or permission of instructor. Application of painting and drawing skills and aesthetic sensitivity to specific commercial illustration and editorial art assignments.		
485	ADVANCED ILLUSTRATION	<i>3 credits</i>
(May be repeated for a total of nine credits) Prerequisite: 484 or permission of instructor. Advanced projects designed to tune student's personal aesthetic to communicative imagery. A more individual approach to design. Drawing and painting emphasized as is experimentation with multimedia.		
486	INTERACT MULTIMEDIA DEVELOPMT	<i>3 credits</i>
(May be repeated for a total of six credits.) Prerequisite: 383. Utilizing two and three dimensional computer imagery, animation, video, and audio, students will plan, develop, and evaluate multimedia presentations, emphasizing scripting, sequencing, and interactivity.		

487	PACKAGING DESIGN	<i>3 credits</i>
Prerequisite: 482. Synthesis of two- and three-dimensional visual thinking. Research in materials applicable to packaging of various products. Assignment of projects stressing development of conventional and experimental package design.		
488	TYPOGRAPHY 4	<i>3 credits</i>
Prerequisites: 387. Senior level investigation of publication design, promotional brochures, and annual reports from concept to presentation. Focus on good concepts and problem-solving design.		
489	ST: STUDIO ART	<i>3 credits</i>
(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 curriculum.		
490	W: ART	<i>1-4 credits</i>
(May be repeated for credit when a different subject or level of investigation is indicated - 490 to maximum of eight credits; 590 to maximum of 12 credits.) Prerequisite: advanced standing in art or permission of instructor. Group investigation of a particular phase of art not offered by other courses in curriculum.		
491	ARCHITECTURAL PRESENT I	<i>3 credits</i>
Prerequisite: 144. Studio practice in architectural design and presentation methods in residential and commercial interiors.		
492	ARCHITECTURAL PRESENT II	<i>3 credits</i>
Prerequisites: 491/591. Continuation of concepts covered in Architectural Presentations I with additional work in color rendering techniques. Emphasis on a variety of rendering mediums.		
493	ADV PHOTOGRAPHY: DIGITAL PRINT	<i>3 credits</i>
Prerequisites: 280, 475. Digital technologies for fine-art photographers including scanning negatives; workflow; color management; image adjustment, correction and optimization; inkjet printing; and digital asset management.		
494	ST: ART EDUCATION	<i>1-3 credits</i>
May be repeated for credit when a different subject or level of investigation of topics of interest to the art education student is not covered elsewhere in the curriculum.		
495	SENIOR EXHIBITION	<i>0 credits</i>
Prerequisite: senior standing and permission. Exit review of work from B.F.A. candidate's major courses.		
496	ART INTERNSHIP/PROF EXPERIENCE	<i>1-6 credits</i>
(Repeatable for credit. No more than 6 credits of internship may apply toward the elective requirement for completion of any art department major.) Prerequisites: junior level in major program and permission of Internship Director. In-depth professional training affording the intern on-the-job experience in selected areas of specialization.		
497	INDP STUDY: ART	<i>1-7 credits</i>
(May be repeatable for 7 credits). Prerequisites for art majors: completion of at least one advanced course in the major with a grade of A or A- and permission of instructor. Investigation in depth of aesthetic and technical problems within a studio-selected area of specialization. Student must present in writing a proposed study plan and time schedule for instructor approval. Prerequisites for non-art majors: permission of instructor.		
498	SP: HISTORY OF ART	<i>1-3 credits</i>
(May be repeated for credit when a different subject or level of investigation is indicated) Prerequisites: 14 credits in art history and permission of instructor. Individual research in art history centered around limited topic, such as specific time period, history of specific techniques, a single artist or movement in art history. No more than 10 credits will be counted toward major.		
499	HONORS IN ART	<i>3 credits</i>
(May be repeated for a total of six credits) Prerequisites: senior standing in the Honors Program and approval of honors project by faculty preceptor. To be used for research in the Honors Program established by student and his/her adviser(s).		
501	ST: HISTORY OF ART	<i>1-3 credits</i>
Prerequisite: 201 or permission. A lecture course focusing on a particular movement, period, artist, or medium. (May be repeated when a different subject or level of investigation is selected.)		
502	MUSEOLOGY	<i>3 credits</i>
Lecture course dealing with museum science, including museum history, staff structures, art handling, storage and presentation, and exhibition preparation.		
503	ART AND CRITICAL THEORY	<i>3 credits</i>
Prerequisite: Permission of the instructor. This course, designed for both studio and art history majors, surveys the major theoretical currents in contemporary criticism and art history.		
505	HISTORY OF ART SYMPOSIUM	<i>1-3 credits</i>
(May be repeated for credit when a different subject is indicated) Prerequisite: permission of instructor. Lecture, individual research and evaluation, group discussion related to a specific time period or to an artistic problem.		
507	METHODS OF ART HISTORY	<i>3 credits</i>
Prerequisite: Permission of the instructor. This course explores the history of the discipline and the permutations it has undergone since its establishment in the early years of the nineteenth century.		
510	METHODS OF TEACHING ELEM ART	<i>3 credits</i>
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 credits as elective courses for art majors.		

511	METHODS OF TEACH SECONDARY ART	<i>3 credits</i>
Prerequisite: admission to Teacher Education Program Art P-12. A lecture course providing the knowledge, skills, and experience necessary for the development of curriculum, instruction and assessment appropriate for application at the high school level. No credit as an elective for art majors.		
512	STUDENT TEACHING COLLOQUIUM	<i>1 credits</i>
Prerequisites: senior status, successful completion of field experience, and permission. Corequisite: 5500:694. 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.		
513	SURVEY OF ASIAN ART	<i>3 credits</i>
This course introduces the student to the historical, cultural, political, and religious aspects of civilization that influenced the aesthetics of Asian art.		
518	MULTIPLES AND MULTIPLICITY	<i>3 credits</i>
Prerequisite: 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.		
519	ST: PRINT	<i>3 credits</i>
Prerequisite: Permission of instructor. Investigation in specialized printmaking media like Photogravure, Digital Printing, and Book Arts among others. May be offered in conjunction with university sponsored residency or travel.		
523	COMMUNITY BASED ART EDUCATION	<i>3 credits</i>
A service learning course for art educators that combines traditional lecture, demonstration, and hands-on workshop to introduce students to contemporary practices in community-based arts.		
524	MIDDLE SCHOOL MATERIALS & TECH	<i>3 credits</i>
A lecture course in which students will gain hands-on approach to developing instructional art materials and lessons for the middle school.		
525	CERAM: METHDS, MATERLS, & CNCP	<i>3 credits</i>
(Lab) 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.		
526	EARLY CHILDHOOD ART EDUCATION	<i>3 credits</i>
A lecture course for art educators exploring visual arts as a vehicle for whole child development and learning across the curriculum in P,K-5 school settings.		
527	ART IN THE INCLUSIVE CLASSROOM	<i>3 credits</i>
Prerequisite: 5100:620. Art education course exploring the use of art with diverse populations through lecture, hands on art making and site visitations.		
528	ELEMENTARY FLD EXP: ART LICEN	<i>1 credits</i>
Corequisite: 510. Instructional field experience in the P,K-6 art classroom to apply theory and research into practice.		
529	SECONDARY FLD EXP: ART LICEN	<i>1 credits</i>
Corequisite: 511. Instructional experience in the 7-12 art classroom to apply theory and research into practice.		
530	PROFESS PRAC FOR ART EDUCATORS	<i>1 credits</i>
Prerequisites: 510, 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.		
554	ADVANCED CERAMICS	<i>3 credits</i>
Prerequisite: permission. Studio course with emphasis on advanced ceramic techniques.		
560	GRADUATE STUDIO: 2-D MEDIA	<i>3 credits</i>
Graduate studio in two dimensional media. Special topics and focus vary.		
561	GRADUATE STUDIO: 3-D MEDIA	<i>3 credits</i>
Graduate studio in three dimensional design media. Special topics and focus vary.		
562	GRADUATE STUDIO: PHOTO/DIG MED	<i>3 credits</i>
Graduate studio in photographic/digital media. Special topics and focus vary.		
589	ST: STUDIO ART	<i>3 credits</i>
(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.		
590	W: ART	<i>1-4 credits</i>
(May be repeated for credit when a different subject or level of investigation is indicated - 490 to maximum of eight credits; 590 to maximum of 12 credits) Prerequisite: advanced standing in art or permission of instructor. Group investigation of a particular phase of art not offered by other courses in curriculum.		
593	ADV SEMINAR IN ART EDUCATION	<i>3 credits</i>
Prerequisite: Acceptance into the MS in Secondary Education with Visual Arts Licensure Program. 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 also addressed.		
594	ST: ART EDUCATION	<i>1-3 credits</i>
(May be repeated for 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.		
597	INDP STUDY: ART	<i>1-3 credits</i>

(May be repeatable for 9 credits). Prerequisites for art majors: completion of at least one advanced course in the major with a grade of A or A- and permission of instructor. Prerequisites for non-art majors: permission of instructor. Investigation in depth of aesthetic and technical problems within a studio-selected area of specialization. Student must present in writing a proposed study plan and time schedule for instructor approval.

598

SP: HISTORY OF ART

1-3 credits

(May be repeated for credit when a different subject or level of investigation is indicated) Prerequisites: 14 credits in art history and permission of instructor. Individual research in art history centered around limited topic, such as specific time period, history of specific techniques, a single artist or movement in art history. No more than 10 credits will be counted toward major.



Family and Consumer Sciences (7400)

123	FUNDAMENTALS OF CONSTRUCTION	<i>3 credits</i>
Basic theory and application of construction fundamentals, including experiences with patterns and specialty fabrics.		
125	PRINC: APPAREL DESIGN	<i>3 credits</i>
The study of contemporary apparel design and the relationship of design elements and principles to personal characteristics and social/professional orientation.		
132	EARLY CHILDHOOD NUTRITION	<i>3 credits</i>
Emphasis on nutrition as component of Early Childhood programs. Nutrition principles discussed in relation to self and young children. Prenatal and infant nutrition studied. Food as learning experience, menu planning, purchasing, sanitation, food labeling, storage and parent involvement included. For Family and Child Development Option, and an educational technology student.		
133	NUTRITION FUNDAMENTALS	<i>3 credits</i>
Study of basic nutrition concepts, contemporary issues, controversies; emphasis on macro/micro nutrient requirements for healthy individuals; analysis of a student's dietary intake.		
139	FASHION & FURNISH INDUSTRIES	<i>3 credits</i>
Overview of fashion and furnishings industries including production, distribution, promotion, and the impact of cultural influences. Discussion of career opportunities.		
141	FOOD FOR THE FAMILY	<i>3 credits</i>
Prerequisite FCS major or permission of instructor. Application of nutrition to meal planning; problems in selecting, budgeting and preparing food; meal service.		
147	ORIENT-PROF STD-FAM & CONS SCI	<i>1 credits</i>
Survey of history and development of family and consumer sciences with emphasis on professional and career opportunities.		
158	INTRO: INTERIOR DESIGN	<i>3 credits</i>
Introduction to interior design studies with emphasis on developing basic skills and competencies required for residential design.		
201	COURTSHIP, MARR & FAM RELATION	<i>3 credits</i>
Love, intimacy, relationship development, sexuality, marriage/child rearing are studied in lifespan perspective. Emphasis placed on individual relation to changing family/social/cultural demands.		
219	DRESS AND CULTURE	<i>3 credits</i>
Study of cultural, social, psychological and economic aspects of clothing. Emphasis on expression and use of clothing in relation to self, society and culture. Lecture/discussion.		
225	TEXTILES	<i>3 credits</i>
Basic study of natural and manufactured fibers. Emphasis on physical properties, selection and care. Attention given to design and manufacture of textiles. Lecture/Laboratory.		
226	TEXTILE EVALUATION	<i>3 credits</i>
Prerequisite: 225. Evaluating method, quality, and necessity of dyes, finishes, other coloration techniques and designs.		
241	INTRO: FAM & CONS SCI EDUC	<i>3 credits</i>
Introduction to the teaching of Family and Consumer Sciences in the secondary schools. Emphasis on state standards, current trends and societal factors affecting career-technical programs.		
250	FOOD SCIENCE LECTURE & LAB	<i>4 credits</i>
Prerequisites: 133, 3150:110, 111. Study of the chemical and physical structure of food. Scientific and aesthetic principles involved in the selection, storage and preparation of foods. Lecture and laboratory combined.		
255	FATHERHOOD: PARENT ROLE	<i>3 credits</i>
Prerequisites: 201 or 265. Historic evolution of the father role, its changing social definition, and father's potential effects on a child's development--birth through adolescence.		
257	AUTOCAD FOR INTERIOR DESIGN	<i>3 credits</i>
Prerequisites: 158 or permission from instructor. An introductory course in computer drafting as an alternative to conventional drafting for interior design applications.		
258	LIGHT IN MAN-MADE ENVIRONMENTS	<i>3 credits</i>
Prerequisites: 2940:250. Comprehensive study of the essential principles of light in a three-dimensional context for man-made environments.		
259	FAMILY HOUSING	<i>3 credits</i>
A study of three basic aspects of family housing: physical/design, financial/legal, and sociological.		

265	CHILD DEVELOPMENT	<i>3 credits</i>
Physical, cognitive, language, social, emotional, and personality development of the child from prenatal through age eight. Observation of children in early childhood educational settings.		
270	THEORY & GUIDANCE OF PLAY	<i>3 credits</i>
Prerequisite: 265. Theory and guidance of play as primary vehicle and indicator of physical, intellectual, social, emotional development and learning of children from birth to kindergarten.		
280	EARLY CHILDHOOD CURRIC METHODS	<i>3 credits</i>
Prerequisite: 265. Planning, presenting, evaluating creative activities in art, music, movement, language arts, logico-mathematics and science. Space, time, materials and adult-child interaction are emphasized.		
295	DIRECT EXPERIENCES IN HOSPITAL	<i>3 credits</i>
Prerequisite: permission of adviser. Individual learning experiences for students with patients, their families and the hospital personnel in various hospital settings under the direction of hospital and University staff.		
296	HOSPITAL BASED CHILD LIFE	<i>0.5 credits</i>
Prerequisite: permission of advisor. This course focuses on the hospital setting, introducing the student to the role of the child life specialist in the hospital.		
300	LEGAL ENVIRONMENT OF FAMILIES	<i>3 credits</i>
Introduction to legal terminology, reasoning and analysis, court systems and procedures within the context of family and consumer law.		
301	CONSUMER EDUCATION	<i>3 credits</i>
Practical application that reviews and analyzes consumer education methods with major emphasis on the evaluation of consumer education programs. Online section available.		
303	CHILDREN AS CONSUMERS	<i>3 credits</i>
Study of the consumer role of children three through eighteen years. Emphasizes research data on children as consumers and consumer education for children.		
305	ADV CONSTRUCTION & TAILORING	<i>3 credits</i>
Prerequisite: 123. Advanced theory and principles in construction of couture garment. Construction of coat or suit jacket utilizing custom tailoring techniques. Two hours lecture, four hours laboratory.		
310	FOOD SYSTEMS MANAGEMENT I	<i>4 credits</i>
Prerequisites: 250, 6200:201 or 2420:211 or permission; corequisite: 7400:315. Basic theoretical concepts in the management of dietetic food service systems and the practical application of principles and procedures in quantity food production and service.		
311	SEMINAR IN FIBER ARTS	<i>3 credits</i>
Exploration of a specific fiber arts technique such as needle arts, weaving, surface design, wearable art, or machine stitchery. (May be repeated for a total of nine credits).		
315	FOOD SYSTEMS MGMT I CLINICAL	<i>2 credits</i>
Prerequisite: 250; corequisite: 310. Development of quantity food preparation and supervisory skills in community agencies; identification of functions and resources involved in the management of food service systems.		
316	SCIENCE OF NUTRITION	<i>4 credits</i>
Prerequisites: 3100:202, 3150:113, or instructor permission. In-depth characterization of composition, metabolism, physiological functions and interrelationships of nutrients. Analysis and interpretation of current literature; assessment of nutrition counseling techniques.		
320	CAREER DECISIONS IN NUTRITION	<i>1 credits</i>
Exploration of the nutrition/dietetics profession, including academic/internship routes, career opportunities, professional concepts and attributes. Self-assessment and goal setting with beginning portfolio development.		
321	EXPERIMENTAL FOODS	<i>3 credits</i>
Prerequisites: 250; 3150:110, 111, 112, 113. Theory and methods in the experimental study of foods. Sensory evaluation and instrumental analysis of food quality. Individual research emphasized. Lecture/Laboratory.		
328	NUTRITION IN MEDICAL SCIENCE I	<i>4 credits</i>
Prerequisites: 133 or 316, 426, 443 or permission. Analysis of therapeutic health-care concepts. Consideration of nutritional implications of pathological conditions; construction of diets for specific disorders.		
329	NUTRITION IN MED SCI I-CLINIC	<i>2 credits</i>
Prerequisites: 133 or 316, 426, 443 or permission; corequisite: 328. Analysis of therapeutic health-care concepts. Consideration of nutritional implications of pathological conditions; construction of diets for specific disorders.		
331	INTERIOR DESIGN THEORY	<i>3 credits</i>
Prerequisites: 158, 7100:144. A comprehensive study of interior design theories and application in the built environment.		
333	PROGRAMMING & SPACE PLANNING	<i>3 credits</i>
Prerequisites: 259, 331; 2940:250. A comprehensive study of space planning principles and the programming phase of the design process.		
334	SPECIFICATIONS FOR INTERIORS I	<i>3 credits</i>
Prerequisites: 225, 258. A comprehensive study of composition, characteristics, manufacture, dimensions and use, bi-products, installation, and specifications of interior construction materials.		
335	SPECIFICATION FOR INTERIORS II	<i>3 credits</i>

Prerequisites: 334. A comprehensive study of interior finish material with emphasis on soft goods and textiles, selection criteria, estimating, and writing specifications.

336	PRIN & PRAC OF INTERIOR DESIGN	<i>3 credits</i>
Prerequisites: 334. Study of the business of interior design to include initiating and maintaining a successful practice in residential or non-residential design.		
337	INTER DESIGN CONTRACT DOCUMENT	<i>3 credits</i>
Prerequisites: 7100:492. A comprehensive study of contract documents and work drawings required for the design of interior spaces. Emphasis on three-dimensional representation.		
340	MEAL MANAGEMENT	<i>2 credits</i>
Prerequisites: 250 or 141. Emphasis is on meal design, etiquette, nutritional adequacy, and application of management principles. Resource management is applied to all course activities, including restricted financial and special diet situations.		
352	STRATEGIC MERCHANDISE PLANNING	<i>3 credits</i>
Prerequisite: General Math Requirement. The fashion buyer's role in merchandise management and decision making with spreadsheets and merchandise mathematics incorporated into computer simulations.		
360	PARENT-CHILD RELATIONS	<i>3 credits</i>
Prerequisite: 265. The study of interactive parent-child relations from infancy through adulthood and the internal and environmental forces which impact upon family dynamics. Online course.		
362	FAMILY LIFE MANAGEMENT	<i>3 credits</i>
Introduction to management theories, processes and principles as applied to utilization of human and material resources in promotion of individual and family well-being.		
365	INFANT, FAMILY AND SOCIETY	<i>3 credits</i>
Prerequisite: 265. In-depth examination of physical, cognitive, language, social, and emotional development of the infant from prenatal through age two. Observation of infants in daycare settings.		
400	NUTRITION COMMUN & EDUC SKILLS	<i>4 credits</i>
Prerequisites: 133 or 316. Theory and development of communication and education skills essential to dietetics practice; interpersonal communication; interviewing; nutrition counseling; education techniques, media, and current technology.		
401	AMERICAN FAMILIES IN POVERTY	<i>3 credits</i>
Prerequisites: 201 or 265, and senior status. Overview of the issues, trends and social policies affecting American families living in poverty. Online section available.		
402	ADVANCED FIBER ARTS	<i>3 credits</i>
Prerequisite: 311 or Permission of the instructor. An advanced course that builds on the skills learned in 7400:311, 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 product development.		
403	ADVANCED FOOD PREPARATION	<i>3 credits</i>
Prerequisites: 141 or 250 or permission. Study of advanced techniques of food preparation. Introduction to and interpretation of classic and foreign cuisines. Emphasis on individualized experiences, skill development and evaluation of procedures and results.		
404	MIDDLE CHILDHOOD & ADOLESCENCE	<i>3 credits</i>
Prerequisites: 201, 265 or permission of instructor. The influences of middle childhood and adolescent behavior on the family and the influences of the family environment on middle childhood and adolescent development.		
406	FAMILY FINANCIAL MANAGEMENT	<i>3 credits</i>
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.		
407	FCB OCCUP EMPLOYMNT EXPERIENCE	<i>4 credits</i>
Provides student with knowledge of current business and industrial practices at level minimally commensurate with employment expectations of graduates of vocational job training programs in Family and Consumer Sciences.		
412	INSTITUTIONAL MANAGEMENT	<i>3 credits</i>
Organization and management in administration of food service systems; problems in administration of food service systems; problems in control of labor, time and cost. Field experience in food production.		
413	FOOD SYSTEMS MANAGEMENT II	<i>3 credits</i>
Prerequisite: 310. Advanced concepts in management of dietetic service systems relating to achievement of nutritional care goals.		
414	FOOD SYSTEMS MGMT II-CLINICAL	<i>3 credits</i>
Prerequisite: 315; corequisite: 413. CP students only. Application of advanced food systems management concepts in community dietetic food service facilities; preparation for entry-level staff positions as administrative dietitians; clinical experience for 24 hours per week for 10 weeks of semester.		
418	HISTORY OF INTERIOR DESIGN I	<i>4 credits</i>
The study of furnishings, interiors, and architecture from antiquity through the eighteenth century, with emphasis on the social-cultural influences shaping their development.		
419	HISTORY OF INTERIOR DESIGN II	<i>4 credits</i>
The study of nineteenth- and twentieth-century furnishings, interiors, and architecture, with emphasis on the social-cultural influences shaping their development.		

421	SP: FAMILY & CONSUMER SCIENCES	<i>1-3 credits</i>
Additional study or apprentice experience in specialized field or preparation; group and individual experimentation.		
422	TEXTILES FOR INTERIORS	<i>3 credits</i>
Prerequisite: 225. Evaluation of physical, aesthetic, comfort, care and durability properties of textile products and testing procedures to determine suitability for interiors.		
424	NUTRITION IN LIFE CYCLE	<i>3 credits</i>
Prerequisite: 316 or 426, or permission of instructor. Study of the physiological basis for nutritional requirements; interrelating factors which affect growth, development, maturation and nutritional status from conception through the elderly years.		
425	TEXTILES FOR APPAREL	<i>3 credits</i>
Prerequisite: 225, 226. Evaluation of physical, aesthetic, comfort, care, and durability properties of textile products and testing procedures to determine suitability for desired end uses.		
426	HUMAN NUTRITION	<i>3 credits</i>
Prerequisites: 133, 3100:202, 203, 3150: 112, 113 or instructor's permission. Corequisite: 443. Application of principles nutrition, metabolism and assessment. Analyses and interpretation of current literature. Open to dietetics majors only.		
427	GLOBAL ISSU TEXTILES & APPAREL	<i>3 credits</i>
Prerequisite: 139. Examines the global structure and scope of the textile and apparel industries emphasizing an economic perspective.		
428	NUTRITION IN MEDICAL SCI II	<i>5 credits</i>
Prerequisite: 328. Continuation of 328. Emphasizing nutritional implications of more complex metabolic and pathological conditions as well as nutrition support strategies.		
429	NUTRITION IN MED SCI II-CLINIC	<i>3 credits</i>
Prerequisites: 329, CP students only; corequisite: 428. Clinical experience in hospitals; application of principles of nutritional care learned in 428.		
430	COMPTR ASSTD FOOD SERVICE MGMT	<i>3 credits</i>
Use of computer programs in application of management concepts for food service systems.		
431	PROF PRESENTATN SKILLS IN FCS	<i>3 credits</i>
Prerequisites: 141 or 250. 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.		
433	SENIOR DESIGN STUDIO I	<i>3 credits</i>
Prerequisites: 334,335,336,337,422. A comprehensive study of residential design with emphasis on conceptual, analytical and graphic skills.		
434	SENIOR DESIGN STUDIO III	<i>3 credits</i>
Prerequisites: 334,335,336,337,422. Advanced space planning and problem solving experiences for application in nonresidential design.		
435	DECORATIVE ELEMNTS INTER DESIGN	<i>1 credits</i>
Prerequisites: 334,335,337,418,419,422. The selection and application of decorative elements in the built environment.		
436	TEXTILE CONSERVATION	<i>3 credits</i>
Prerequisites: 123, 225. Principles and practices of textile conservation with emphasis on procedures appropriate for collectors and small historical agencies.		
437	HISTORIC COSTUME	<i>3 credits</i>
Study of costume and textiles from antiquity through the 18th century, with emphasis on social/cultural influences.		
438	HISTORY OF FASHION	<i>3 credits</i>
Study of western fashions, textiles, and designers with emphasis on social-cultural influences.		
439	FASHION ANALYSIS	<i>3 credits</i>
Prerequisites: 125, 139, senior status. In-depth study of resources and processes for the analysis and forecasting of fashion trends. Emphasis on current designers and environmental forces that influence fashion.		
440	FAMILY CRISIS	<i>3 credits</i>
Study of family stress and crisis including internal and external variables and their influence on degree of disorganization, coping and recovery. Includes theory, research and application dimensions.		
441	FAM RELATNSHIP MID & LATER YRS	<i>3 credits</i>
Exploration of family and individual development of communication and education during the middle and later years of life. Emphasis on issues related to intimacy, economics, social policies, psychological and biological changes.		
442	HUMAN SEXUALITY	<i>3 credits</i>
Prerequisite: 201 or permission of instructor. Introduction to problems and values. Emphasis is on the role of values in intimate relationships, the diverse dimensions of sexual responsibility.		
443	NUTRITION ASSESSMENT	<i>3 credits</i>
Prerequisites: 7400:133, 3100:202, 203, 3150:112,113; Corequisites: 7400:426 or instructor permission. Application of principles of nutrition and assessment. Analysis and interpretation of current literature. Open to dietetics majors only.		
444	NUTR MED SCI LT CARE -CLINICAL	<i>2 credits</i>

Prerequisite: CP students only, 7400:328 and 7400:329. Clinical experiences in long term care facilities for application of principles of nutritional care learned in 7400:328.

446	CULTURE, ETHNICITY & FAMILY	<i>3 credits</i>
Prerequisites: 201 or 265, and senior status. Study of the role of culture and ethnicity in adaptation of the family system to environment. Online section available.		
447	SR SEM: CRIT ISSUES-FCS DEV	<i>1 credits</i>
Prerequisites: FCS major & senior standing. Consideration of family and consumer sciences as a profession and its impact on the quality of life of individuals, families and their environments. Analysis of challenges facing the profession and all home economists.		
448	BEFORE & AFTER SCHL CHILD CARE	<i>2 credits</i>
Study of the development, implementation and evaluation of school-age child-care programs for before and after school and vacation periods.		
449	FLAT PATTERN DESIGN	<i>3 credits</i>
Prerequisite: 123. Theory and experience in clothing design using flat pattern techniques.		
450	FAMILIES, INDIVIDL & ENVIRONMT	<i>3 credits</i>
Prerequisite: FCS major, senior standing or completion of 90 credits or permission of instructor. Integrative exploration of issues affecting the well-being of individuals, families, and communities in the multiple environments in which they function.		
451	CHILD IN THE HOSPITAL	<i>4 credits</i>
Prerequisite: 265, comparable course or permission of instructor. Seminar dealing with special needs and problems of hospitalized/ill child and family. Literature related to effects, separation, illness and stress. Examination of strategies for coping.		
452	CHILD, ILLNESS AND LOSS	<i>3 credits</i>
Prerequisite: senior level standing. This course examines the phenomena of illness, loss and bereavement in modern society with a special emphasis on children and families.		
453	FACILITATING SUPPORT GROUPS	<i>3 credits</i>
Prerequisite: senior level standing. Theories, strategies and skills needed to facilitate support groups for children and for adults are studied using a variety of approaches including participation in a support group.		
455	PRACT: EXPERNC CHILD-LIFE PROG	<i>3 credits</i>
Prerequisite: 451. Field experience in a child-life program and classroom activities including critical analysis of a currently functioning program and program administration.		
458	SENIOR DESIGN STUDIO II	<i>3 credits</i>
Prerequisites: 334,335,336,337,422. A comprehensive study of the nonresidential design with emphasis on conceptual, analytical and graphic skills.		
459	SENIOR DESIGN STUDIO IV	<i>3 credits</i>
Prerequisites: 334,335,336,337,422. Advanced space planning and problem solving experiences for application in residential and nonresidential design.		
460	ORG & SUPRV CHILD CARE CENTERS	<i>3 credits</i>
Theory, principles and procedures involved in establishing and operating centers for infants, toddlers, preschool and school-age children.		
461	CASE MGMT CHILDRN & FAMILIES I	<i>3 credits</i>
Provides an overview of Case Management basics in a multi-systems collaborative context. Includes roles, values, principles, state and service systems, and service coordination.		
462	CASE MGMT CHILDRN & FAMILIES II	<i>3 credits</i>
Prerequisite: 461/561. 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.		
463	PRACT: CROS-SYS CSE MGT:CHD&FA	<i>3 credits</i>
Prerequisites: 461/561, 462/562, and six hours of electives. Provides on-site opportunities to apply skills in cross-systems collaborative Case Management with children and families. Includes review of strategies, ethics, and survival skills, and supervision.		
470	FOOD INDUS: ANALYS & FLD STDY	<i>3 credits</i>
Prerequisite: 250 or permission. Role of technology in extending the food supply. Chemical, physical and biological effects of processing and storage, on-site tours of processing plants.		
474	CULTURAL DIMENSIONS OF FOOD	<i>3 credits</i>
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.		
476	DEVELOPMENTS IN FOOD SCIENCE	<i>3 credits</i>
Prerequisite: 7400:250. Advanced study of the chemistry and physics of food components affecting characteristics of food. Critical evaluation of current basic and applied research emphasized.		
478	SENIOR PORTFOLIO REVIEW	<i>1 credits</i>
Prerequisites: permission of instructor. The development of the interior design portfolio.		
479	THE NCIDQ EXAMINATION	<i>1 credits</i>
Prerequisites: permission of Program Director. The course is designed to help candidates prepare for the National Council for Interior Design Qualification Examination.		

480	COMMUNITY NUTRITION I	<i>3 credits</i>
Prerequisites: 316 or 426. Corequisite: 481 for CP students only. Major food and nutrition related problems in the community. Emphasis on community assessment, program implementation and evaluation, and rationales for nutrition services.		
481	COMMUNITY NUTRITION I-CLINICAL	<i>1 credits</i>
Prerequisite: CP students only; 428. Corequisite: 480. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care.		
482	COMMUNITY NUTRITION II	<i>3 credits</i>
Prerequisite: 480. Corequisite: 483 for CP students only. Activities engaged in by community nutritionist. Emphasis on controversies, cultural differences, educational approaches, grantsmanship, marketing, and working with the media.		
483	COMMUNITY NUTRITION II-CLINIC	<i>1 credits</i>
Prerequisite: CP students only; 481. Corequisite: 482. A second field placement in an area agency offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care.		
484	HOSPITAL SETTINGS, CHILD & FAM	<i>3 credits</i>
Prerequisite: 265, comparable course or permission of instructor. Focuses on hospital as a major social institution; introduces procedures and functions of the hospital; roles played by various hospital personnel plus cursory knowledge of medical terminology, common childhood diseases, illnesses and injuries.		
485	SEM: FAMILY & CONSUMER SCIENCE	<i>1-3 credits</i>
Prerequisite: permission of instructor. Exploration and evaluation of current developments in selected areas.		
486	STAFF RELIEF: DIETETICS	<i>2 credits</i>
Prerequisites: 414, CP senior only. Opportunity to function as an entry-level dietitian in area of administrative, therapeutic or community dietetics. The graduating senior CUP student spends three 40-hour weeks in a mutually agreeable agency primarily under direction of staff dietitians or coordinators.		
487	SPORTS NUTRITION	<i>3 credits</i>
Prerequisites: 133; 3100:202,203; 3150:112,113 or 203 or 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.		
488	PRACT: DIETETICS	<i>1-3 credits</i>
Prerequisite: approval of advisor/instructor. Practical experience in application of the principles of nutrition.		
489	PROFESSNL PREPARATN- DIETETICS	<i>1 credits</i>
Historical aspects of dietetics and where the profession is going. Specialty areas of dietetic practice are explored. Students prepare the application for dietetic internship.		
490	W: FAMILY & CONSUMER SCIENCES	<i>1-3 credits</i>
Prerequisite: at least junior standing. Investigation on current issue or topic in selected areas of home economics and family ecology. May be on off-campus study tour or an on-campus full-time group meeting.		
491	CAREER-TECH FCS INSTR STRATEGS	<i>3 credits</i>
Prerequisites: 241, 5100:200, 5100:220. Organization of Career-Technical Family and Consumer Sciences programs in schools grades 4-12. Emphasis on strategies, compliance with state career-technical directives, student organizations, program planning, workplace replication and classroom observations.		
493	NUTRITION FOR ATHLETES	<i>3 credits</i>
Study of metabolism before, during, and after exercise. Factors affecting nutrient needs and peak performance of different athletic populations are emphasized.		
494	INTERN: FAMILY & CONSUMER SCI	<i>1-6 credits</i>
Prerequisite: permission of the instructor. In depth field experience in business, industry, or community agencies relating to the student's area of specialization.		
495	INTERN: GUID EXPER CH-LIFE PRG	<i>8 credits</i>
Prerequisite: 455. Field experience in a child-life program at an approved pediatric facility under the supervision of Child Life Specialists.		
496	PARENT EDUCATION	<i>3 credits</i>
Prerequisite: 265, comparable course or permission of instructor. Practical application that reviews and analyzes parent education methods with major emphasis on the evaluation of parent education programs. Online section available.		
497	INTERN: FAMILY & CONSUMER SCI	<i>2-6 credits</i>
Prerequisite: permission of instructor. In-depth field experience in business, industry or community agencies related to student's area of specialization.		
498	STUDENT TEACHING SEMINAR	<i>1 credits</i>
Corequisite: 5300:495. Seminar for students currently enrolled in Family and Consumer Sciences student teaching. Emphasis on block and lesson plan development, licensure, portfolio development, Praxis III, professional development, and student teaching reflections.		
499	SR HONORS PROJ: FAM & CONS SCI	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and approval of honors preceptor. Individual study supervised by adviser. Student and preceptor develop goals, objectives and methodology.		
500	NUTRITION COMMUN & EDUC SKILLS	<i>4 credits</i>

Prerequisite: permission of instructor. Theory and development of communication and education skills essential to dietetics practice; interpersonal communication; interviewing; nutrition counselling, education techniques, media and current technology.

501	AMERICAN FAMILIES IN POVERTY	<i>3 credits</i>
Prerequisite: Permission of instructor. Overview of the issues, trends, and social policies affecting American families living in poverty. Online section available.		
502	ADVANCED FIBER ARTS	<i>3 credits</i>
Prerequisite: Permission of the instructor. An advanced course that builds on the skills learned 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 product development.		
503	ADVANCED FOOD PREPARATION	<i>3 credits</i>
Prerequisite: permission. Study of advanced techniques of food preparation. Introduction to and interpretation of classical and foreign cuisines. Emphasis on individualized experience, skill development and evaluation of procedures and results.		
504	MIDDLE CHILDHOOD & ADOLESCENCE	<i>3 credits</i>
Prerequisite: permission of instructor. The influences of middle childhood and adolescent behavior on the family and the influences of the family environment on middle childhood and adolescent development.		
506	FAMILY FINANCIAL MANAGEMENT	<i>3 credits</i>
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.		
507	FCS OCCUP EMPLOYMNT EXPERIENCE	<i>4 credits</i>
Provides student with knowledge of current business and industrial practices at level minimally commensurate with employment expectations of graduates of vocational job training programs in Family and Consumer Sciences.		
513	FOOD SYSTEMS MANAGMENT II	<i>3 credits</i>
Prerequisites: Acceptance into the graduate program or permission of the instructor. Advanced concepts in management of dietetic service systems relating to achievement of nutritional care goals.		
514	FOOD SYSTEMS MGMT II CLINICAL	<i>3 credits</i>
Prerequisite: Admission to CP program. Corequisite: 513. This clinical increases experience 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.		
518	HISTORY OF INTERIOR DESIGN I	<i>4 credits</i>
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	<i>4 credits</i>
The study of nineteenth and twentieth-century furnishings and interiors, with emphasis on the social-cultural influences shaping their development.		
522	TEXTILES FOR INTERIORS	<i>3 credits</i>
Prerequisite: Permission from 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.		
524	NUTRITION IN LIFE CYCLE	<i>3 credits</i>
Prerequisite: permission of the instructor. Study of the physiological basis for nutritional requirements; interrelating factors which affect growth, development, maturation and nutritional status from conception through the elderly years.		
525	TEXTILES FOR APPAREL	<i>3 credits</i>
Prerequisite: Permission. Evaluation of physical, aesthetic, comfort, care and durability properties of textile products and testing procedures to determine suitability for desired end uses.		
526	HUMAN NUTRITION	<i>3 credits</i>
Prerequisites: Acceptance into the graduate program or permission from the instructor. Corequisites: 7400:543. Application of principles of nutrition, metabolism and assessment. Analysis and interpretation of current literature.		
527	GLOBAL ISS IN TEXTLS & APPAREL	<i>3 credits</i>
Prerequisite: permission of the instructor. Examines the global structure and scope of the textile and apparel industries emphasizing an economic perspective.		
528	NUTRITION IN MEDICAL SCI II	<i>5 credits</i>
Prerequisites: 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 MED SCI II-CLINIC	<i>3 credits</i>
Prerequisite: Admission to CP Program. Corequisite: 7400:528. Clinical experience in hospitals; application of principles of nutritional care.		
531	PROF PRESENTATN SKILLS IN FCS	<i>3 credits</i>
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	<i>3 credits</i>

Prerequisite: permission of instructor. Principles and practices of textile conservation with emphasis on procedures appropriate for collectors and small historical agencies.

537	HISTORIC COSTUME	<i>3 credits</i>
Study of western costume and textiles from antiquity to 1830, with emphasis on social-cultural influences.		
538	HISTORY OF FASHION	<i>3 credits</i>
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	<i>3 credits</i>
Study of family stress and crisis including internal and external variables and their influence on degree of disorganization, coping and recovery. Includes theory, research and application dimensions.		
541	FAM RELATNSHIP MID & LATER YRS	<i>3 credits</i>
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 trends in gerontology.		
542	HUMAN SEXUALITY	<i>3 credits</i>
Prerequisite: permission of instructor. Introduction to problems and values. Emphasis is on the role of values in intimate relationships, the diverse dimensions of sexual responsibility.		
543	NUTRITION ASSESSMENT	<i>3 credits</i>
Corequisites: 7400:526 or instructor permission. Application of principles of nutrition and assessment. Analysis and interpretation of current literature. Open to dietetics majors only.		
544	NUTR MED SCI LT CARE-CLINICAL	<i>2 credits</i>
Prerequisites: CP Graduate students only, 7400:328, 329. Clinical experiences in long term care facilities for application of principles of nutritional care.		
546	CULTURE, ETHNICITY & FAMILY	<i>3 credits</i>
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 & AFTER SCHL CHILD CARE	<i>2 credits</i>
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	<i>3 credits</i>
Prerequisite: permission of instructor. Theory and experience in clothing design using flat pattern techniques.		
551	CHILD IN THE HOSPITAL	<i>4 credits</i>
Prerequisite: permission of the instructor. Seminar dealing with social needs and problems of hospitalized/ill child and family. Literature related to effects, separation, illness and stress. Examination of strategies for coping.		
552	CHILD, ILLNESS AND LOSS	<i>3 credits</i>
This course examines the phenomena of illness, loss and bereavement in modern society with a special emphasis on children and families.		
553	FACILITATING SUPPORT GROUPS	<i>3 credits</i>
Theories, strategies and skills needed to facilitate support groups for children and for adults are studied using a variety of approaches including participation in a support group.		
555	PRACT: EXPERNC CHILD-LIFE PROG	<i>3 credits</i>
Prerequisite: 561 or permission of the instructor. Field experience in a child life program and classroom activities including critical analysis of a currently functioning program and program administration.		
560	ORG & SPRVSN CHILD CARE CNTRS	<i>3 credits</i>
Theory, principles and procedures involved in establishing and operating centers for infants, toddlers, preschool and school-age children.		
561	CASE MGMT CHILDRN & FAMILIES I	<i>3 credits</i>
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 MGMT CHILDRN & FAMILIES II	<i>3 credits</i>
Prerequisites: 561 or permission of instructor. 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.		
570	FOOD INDUST: ANALYS & FLD STDY	<i>3 credits</i>
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	<i>3 credits</i>
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	<i>3 credits</i>
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	<i>3 credits</i>

Prerequisite: permission of instructor. Corequisite: 581. Socio-cultural aspects of community assessment, program implementation and evaluation, and rationales for nutrition services.

581	COMMUNITY NUTRITION I-CLINICAL	<i>1 credits</i>
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	<i>3 credits</i>
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 evaluation), and educating the dietitians' "various publics" about nutrition.		
583	COMMUNITY NUTRITION II-CLINICAL	<i>1 credits</i>
Prerequisite: (CP students only) 581. Corequisite: 582. Field placement in area agencies offering nutrition services. Study of the agency's goals, organization, and philosophy of nutritional care. Credit/noncredit.		
584	HOSPITAL SETTINGS, CHILD & FAM	<i>3 credits</i>
Prerequisite: permission of the instructor. Focuses on hospital as a major social institution; introduces procedures and functions of the hospital; roles played by various hospital personnel plus cursory knowledge of medical terminology, common childhood diseases, illnesses and injuries.		
585	SEM: FAMILY & CONSUMER SCIENCE	<i>1-3 credits</i>
Prerequisite: permission of instructor. Exploration and evaluation of current developments in selected areas.		
587	SPORTS NUTRITION	<i>3 credits</i>
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	PRACT: DIETETICS	<i>1-3 credits</i>
Prerequisite: approval of advisor/instructor. Practical experience in application of the principals of nutrition.		
589	PROFESSNL PREPARATN DIETETICS	<i>1 credits</i>
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 going. Specialty areas of dietetic practice are explored. Students prepare the application for dietetic internship.		
590	W: FAMILY & CONSUMER SCIENCES	<i>1-3 credits</i>
Investigation of current issues or topic in selected areas of family and consumer sciences. May be an off-campus study tour or an on-campus full-time group meeting.		
591	CAREER-TECH FCS INSTR STRATEGS	<i>3 credits</i>
Prerequisites: senior standing or permission. Organization of Career-Technical 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.		
593	NUTRITION FOR ATHLETES	<i>3 credits</i>
Study of metabolism before, during, and after exercise. Factors affecting nutrient needs and peak performance of different athletic populations are emphasized.		
594	PRACT: PARENT & FAMILY EDUC	<i>3 credits</i>
Prerequisites: 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.		
595	CHILD LIFE INTERNSHIP	<i>5 credits</i>
Prerequisite: 555 and permission of advisor. Field experience in a child life program at an approved pediatric facility under the supervision of Certified Child Life Specialists.		
596	PARENT EDUCATION	<i>3 credits</i>
Prerequisite: permission of the instructor. Practical application that reviews and analyzes parent education methods with major emphasis on the evaluation of parent education programs. Online section available.		
598	STUDENT TEACHING SEMINAR	<i>1 credits</i>
Corequisite: 5500:695. Seminar for students currently enrolled in Family and Consumer Sciences student teaching. Emphasis on block and lesson plan development, licensure, portfolio development, Praxis III, professional development, and student teaching reflections.		
602	FAMILY- LIFE-SPAN PERSPECTIVE	<i>3 credits</i>
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	ORIENT GRAD STDS:FAM & CON SCI	<i>1 credits</i>
Introduction to the concepts and processes necessary for graduate study in the interdisciplinary field of family and consumer sciences.		
605	DEVELOPMT PARENT-CHLD INTERACT	<i>3 credits</i>
Prerequisite: permission of the instructor. Study of reciprocal interactions between parent and child from birth to adulthood. Consideration of cross-culture studies, historical and societal influences and various family characteristics and structures. Online course.		
607	FAMILY DYNAMICS	<i>3 credits</i>
Development of techniques in home economics 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	<i>3 credits</i>

Prerequisite: permission of the 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.

624	ADVANCED HUMAN NUTRITION I	<i>3 credits</i>
Prerequisites: undergraduate or graduate-level courses in nutrition and biochemistry. In-depth study of human nutrition emphasizing metabolism physiological functions, and interrelationships of carbohydrate, protein and lipids and the determinants of human energy requirements.		
625	ADVANCED HUMAN NUTRITION II	<i>3 credits</i>
Prerequisite: 624 or equivalent in-depth study of human nutrition with and emphasis in the utilization, physiological functions and interrelationships of vitamins and minerals.		
631	PROBLEMS IN DESIGN	<i>1-3 credits</i>
(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.		
634	MATERIAL CULTURE STUDIES	<i>3 credits</i>
Methods of studying clothing, textiles, and interiors from a cultural and historical perspective.		
639	THEORIES OF FASHION	<i>3 credits</i>
In-depth analysis of the theories underlying fashion and evaluation of current research related to the study of fashion.		
652	PROFESS PRESENT IN FAM&CON SCI	<i>3 credits</i>
Developing effective home economics professional presentations. Emphasis on visuals, display, demonstrations, public relations materials, user manuals, conference management, portfolio development, and learning styles.		
665	DEVLPMNT INFANCY & ERLY CHLDHD	<i>3 credits</i>
Analysis of research and theoretical frameworks regarding infant and child development from conception through age five. Implications for guidance and education.		
677	SOC PSYCH DRESS & NEAR ENVIRON	<i>3 credits</i>
Study of dress and the near environment as they relate to human behavior at the micro and macro level.		
680	HISTRCL&CNCPTL BASES FAM/CONSC	<i>3 credits</i>
History of the field of family and consumer sciences with emphasis on the leaders and the conceptual basis of the field.		
685	RESEARCH METH: FAM/CON SCI	<i>3 credits</i>
A study of family and consumer sciences research methods emphasizing concept and theory development, policy application and ethical considerations.		
688	PRACT: FAMILY & CONSUMER SCI	<i>3 credits</i>
Prerequisite: permission of advisor/instructor. A minimum of 150 hours of supervised experience in an approved community setting to acquire skills related to area of specialization.		
690	THESIS RESEARCH/READING	<i>3 credits</i>
Prerequisite: permission of thesis advisor. Supervised reading and research related to approved thesis topic. May be repeated once.		
694	MASTERS PROJECT	<i>5 credits</i>
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.		
695	INTERN: ADV PROG IN CHILD LIFE	<i>5 credits</i>
Prerequisite: 595. Field experience in a specialized area in a child life program in an approved pediatric facility under the supervision of a certified child life specialist.		
696	I.I.: FAMILY & CONSUMER SCI	<i>1-3 credits</i>
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.		
697	I.I.: FAMILY DEVELOPMENT	<i>1-3 credits</i>
Prerequisite: permission of graduate advisor only. individual pursuit and analysis in specific area of student's interest and design under direction of faculty advisor.		
698	I.I.: CHILD DEVELOPMENT	<i>1-3 credits</i>
Prerequisite: permission of graduate advisor only. Individual pursuit and analysis in specific area of student's interest and design under direction of faculty advisor.		
699	MASTERS THESIS	<i>5 credits</i>
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 - School of (7500)

100	FUNDAMENTALS OF MUSIC	<i>2 credits</i>
Introduction of basic notation and development of functional music reading and keyboard skills. Conducted in electronic keyboard laboratory with computer-assisted instruction available. For non-music majors only, with little or no previous musical training.		
101	INTRO TO MUSIC THEORY	<i>2 credits</i>
Prerequisite: Undergraduate Theory Placement Examination. Designed for prospective music major to correct deficiencies in theory background as determined through department placement testing. Includes classroom instruction and computer-assisted instruction in basic notation, scales, meter, key signatures, ear training and basic familiarity with the keyboard. Credit not applicable toward music degree.		
102	INTRO TO MUSIC EDUCATION	<i>2 credits</i>
Prerequisites: 121, 154. Overview of the music teaching profession and its processes. Screening of degree candidates is built into the course with clinical field experience.		
103	TRENDS IN JAZZ	<i>2 credits</i>
An overview of the first 100 years of jazz music with emphasis on major figures and styles central to the development of jazz. This course is specifically designed for the non-music major.		
104	CLASS PIANO I	<i>2 credits</i>
Prerequisite: 101 or permission of instructor. Designed for student with no previous keyboard experience to learn rudimentary keyboard skills such as playing scales, chords, arpeggios and melodic patterns as well as simple music.		
105	CLASS PIANO II	<i>2 credits</i>
Prerequisite: 104 or permission of instructor. Continuation of work begun in 104.		
107	CLASS VOICE I	<i>2 credits</i>
Prerequisite: 101 or permission of instructor. Minimum memorization and solo singing requirement: seven songs. Voice literature emphasis; folk songs, ballads, spirituals, sacred songs and easy art songs in English.		
108	CLASS VOICE II	<i>2 credits</i>
Prerequisite: 107. Minimum memorization and solo singing requirement: eight songs. Vocal literature emphasis: old Italian and English songs, art songs in English or foreign language if student is conversant with the language.		
110	CLASS GUITAR	<i>1 credits</i>
Introduction to the guitar, its repertoire and techniques. Basic classical techniques and music reading, strums, finger-picking, accompaniment patterns, blues styles will be covered.		
121	THEORY & MUSICIANSHIP I	<i>4 credits</i>
Sequential, Prerequisite: Theory Placement Examination (65%) or Introduction to Theory (70%). Analysis, aural/oral skills; Diatonic pitch materials, three clefs; simple-compound meters, rhythmic divisions and subdivisions.		
122	THEORY & MUSICIANSHIP II	<i>4 credits</i>
Sequential, Prerequisite: 7500: 121 (70%). Theory, analysis, aural/oral skills: Seventh chords, secondary function, four-part dictation; asymmetric meters, borrowed subdivision.		
141	EAR TRAINING/SIGHT READING I	<i>1 credits</i>
Prerequisite: Placement in Theory I. Corequisite: 151. Major and minor keys; intervals, triads and inversions; diatonic progressions; three clefs; simple and compound meters; subdivision through sixteenth notes.		
142	EAR TRAINING/SIGHT READING II	<i>1 credits</i>
Prerequisites: 141 and 151. Corequisite: 152. Seventh chords; melodic chromaticism; secondary function; four-part dictation; asymmetric meters; borrowed subdivision.		
151	THEORY I	<i>3 credits</i>
Sequential, Prerequisite: Theory Placement Examination (with a score of 65% or higher) or the grade of C- or higher in 7500:101. Study/creative use of elements of music; investigation of music of major composers of classic/romantic eras; introduction to earlier musical practices and contemporary music.		
152	THEORY II	<i>3 credits</i>
Sequential, Prerequisite: The grade of C- (70%) or higher in 7500: 151. Study/creative use of elements of music; investigation of music of major composers of classic/romantic eras; introduction to earlier musical practices and contemporary music.		
154	MUSIC LITERATURE I	<i>2 credits</i>
Sequential. Familiarization with large body of musical material from all branches of music writing; vocal, instrumental, symphonic and choral music literature. Special attention given to style, form and structural procedures of principal composers.		
155	MUSIC LITERATURE II	<i>2 credits</i>

Sequential. Familiarization with large body of musical material from all branches of music writing; vocal, instrumental, symphonic and choral music literature. Special attention given to style, form and structural procedures of principal composers.

157	STUDENT RECITAL	<i>0 credits</i>
Required of all music majors until minimum requirement is met. Forum for student and faculty members providing lectures, recitals and opportunity for practice of various skills necessary for successful music performance.		
201	EXPLORING MUSIC: BACH TO ROCK	<i>3 credits</i>
Prerequisite: 3400:210 or 3400:221. This course provides non-music majors with the skills to evaluate a wide range of music.		
210	JAZZ IMPROVISATION I	<i>2 credits</i>
Prerequisites: 262 and permission of instructor. Study and application of principles of jazz improvisation as they relate the chord-scale structures, motif development and style.		
211	JAZZ IMPROVISATION II	<i>2 credits</i>
Prerequisite: 210. Advanced study in principles of jazz composition.		
212	MUSIC IND: SURV PRACS & OPPORTUN	<i>2 credits</i>
A study of current practices affecting the professional musician and a survey of career opportunities relating to the music industry.		
221	THEORY & MUSICIANSHIP III	<i>4 credits</i>
Sequential, Prerequisite: 122 (70%). Theory, analysis, and aural/oral skills: Chromatic harmony, dictation of mixed and irregular meters, syncopation, dotted rhythms, and ties.		
222	THEORY & MUSICIANSHIP IV	<i>4 credits</i>
Sequential, Prerequisite: 221 (70%). Theory, analysis, and aural/oral skills: Advanced chromaticism and rhythm, extended tonality, form, serial and non-serial atonality.		
241	EAR TRAINING/SIGHT READING III	<i>1 credits</i>
Prerequisites: 142 and 152. Corequisite: 251. Modulation; chromatic harmony; mixed meters.		
242	EAR TRAINING/SIGHT READING IV	<i>1 credits</i>
Prerequisites: 241 and 251. Corequisite: 252. Twentieth-century materials: modes; whole-tone and octatonic scales; secundal and quartal/quintal harmony; classical, jazz, and non-western examples; polyrhythm; total and atonal contexts.		
251	THEORY III	<i>3 credits</i>
Sequential, Prerequisite: The grade of C- (70%) or higher in 7500:152. Renaissance vocal counterpoint; Baroque instrumental counterpoint; form and analysis of music of all eras.		
252	THEORY IV	<i>3 credits</i>
Sequential, Prerequisite: The grade of C- (70%) or higher in 7500:251. Renaissance vocal counterpoint; Baroque instrumental counterpoint; form and analysis of music of all eras.		
254	STRING METHODS I	<i>1 credits</i>
Prerequisites: 102, 155, 222, 262, 276, 277. Fundamentals of technique, tone production, methods, and materials pertaining to teaching violin, viola, cello and string bass in the public schools.		
255	STRING METHODS II	<i>1 credits</i>
Prerequisites: 102, 155, 222, 254, 262, 276, 277. Continuation of the fundamentals of technique, tone production, methods, and materials pertaining to teaching violin, viola, cello and string bass in the public schools.		
259	FRETBOARD HARMONY	<i>2 credits</i>
Prerequisite: 261 or permission of instructor. Essentials of basic theory and harmony as applied to the guitar fretboard: accompaniment, improvisation, transposition, modulation, figures bass, sight reading.		
261	KEYBOARD HARMONY I	<i>2 credits</i>
Sequential. Prerequisites: 105 or equivalency and 122. Essentials of basic theory and harmony practically applied at keyboard; accompaniment, improvisation, transposition, modulation and sight-reading.		
262	KEYBOARD HARMONY II	<i>2 credits</i>
Sequential. Prerequisites: 105 or equivalency and 122. Essentials of basic theory and harmony practically applied at keyboard; accompaniment, improvisation, transposition, modulation and sight-reading.		
265	DICTION FOR SINGERS I	<i>2 credits</i>
Sequential. Prerequisite: permission. Study of diction of the four most used languages (Italian, German, French and English) in vocal performance and international phonetic alphabet. Designed for student who expects to function as vocal performers and/or choral and studio voice teachers.		
266	DICTION FOR SINGERS II	<i>2 credits</i>
Sequential. Prerequisite: permission. Study of diction of the four most used languages (Italian, German, French and English) in vocal performance and international phonetic alphabet. Designed for student who expects to function as vocal performers and/or choral and studio voice teachers.		
268	GRP VOCAL TECH-CHORAL MUSIC ED	<i>2 credits</i>
Prerequisites: 7510:120 or 121, 7520:124. Corequisite: 265. Foundational concepts of group vocal techniques. Designed for choral educators to learn physiology of the voice, basics of vocal production, and applications for the Pre-K-12 choral classroom.		
271	PIANO PEDAGOGY & LITERATURE I	<i>2 credits</i>

Prerequisite: permission of instructor. Examination of musical content and pedagogical orientation of beginning piano material to include appropriate teaching works, methods and ensemble pieces from a variety of historical periods.

272	PIANO PEDAGOGY & LITERATURE II	<i>2 credits</i>
Prerequisite: 7520:125 or permission of the instructor. A survey of piano literature at all levels of difficulty, with practical emphasis on its use for teaching.		
276	TRUMPET & FRENCH HORN METHODS	<i>1 credits</i>
Prerequisite: 102. A comprehensive approach to the performance and pedagogy of the trumpet and French horn for the instrumental music education major in preparation for teaching music.		
277	CLARINET & SAXOPHONE METHODS	<i>1 credits</i>
Prerequisite: 276. A comprehensive approach to the performance and pedagogy of the clarinet and saxophone for the instrumental music education major in preparation for teaching music.		
289	MUSIC EDUCATION DEPARTMNT JURY	<i>0 credits</i>
Prerequisites: minimum 2.5 accum, C or higher in all freshman/sophomore music education coursework, and minimum 200 jury level. Sophomore exam for music education majors.		
298	TECHNOLOGIES OF MUSIC EDUC	<i>2 credits</i>
Introductory hands-on experiences with a wide range of technology applications and strategies to integrate technology into the music curriculum.		
305	MARCHING BAND: ORGANIZ & TECH	<i>1-2 credits</i>
Prerequisite: 289, two semesters 7510:126. A discussion of the marching band. Students learn to write complete half-time show, administer marching band program. Required for instrumental music education majors.		
307	TECHN JAZZ ENSMBL PERFOR & DIR	<i>1-2 credits</i>
Prerequisite: 102, 155, 222, 262, 276, 277, 305; permission of instructor. Basic experiences relating to conducting, rehearsal techniques, improvisation, performance, repertoire and other matters related to organization and direction of stage bands. Required for instrumental majors.		
308	HISTORY & LITERATURE OF JAZZ	<i>3 credits</i>
Prerequisite: permission of instructor. Study of origins of jazz music, its development and influence on today's culture. Investigates evolution of musical instruments as they pertain to jazz music, the artists who perform on them, and their music through live and recorded listening experiences.		
309	JAZZ KEYBOARD TECHNIQUES	<i>2 credits</i>
Prerequisite: 262. Study of and familiarization with basic jazz keyboard techniques as they relate to contemporary jazz harmony and theory.		
310	JAZZ IMPROVISATION III	<i>2 credits</i>
Prerequisite: 211. Advanced study in the principles of jazz improvisation.		
311	JAZZ IMPROVISATION IV	<i>2 credits</i>
Prerequisite: 310. Advanced study in the principles of jazz improvisation.		
315	EQUITY & EXCELLENCE-MUSIC ED	<i>3 credits</i>
Prerequisite: 289. Inquiry-based seminars and service learning field experiences for the music education major to develop competence implementing equity and excellence in a culturally pluralistic society.		
325	RESEARCH IN MUSIC	<i>2 credits</i>
Prerequisites: 155, 222, 262. Techniques of basic research methods; examination of selected music materials; field trips to specialized collections.		
339	TEACHING GENERAL MUSIC I	<i>2 credits</i>
Prerequisites: 222, 262, 289. Methods and materials for teaching general music in pre-K to 12th grade classrooms.		
340	TEACHING GENERAL MUSIC II	<i>2 credits</i>
Prerequisites: 289, 339. Advanced methods and materials for teaching general music with emphasis on Orff, Kodaly and Dalcroze methodologies.		
341	JR HIGH/MID SCH CHORAL METHODS	<i>2 credits</i>
Prerequisites: 289, 340. Methods and materials for teaching choral music at the JH/MS level. Develops competencies in literature selection, rehearsal techniques and assessment of the adolescent voice.		
344	SEC CHORAL MUSIC METH/MATERLS	<i>2 credits</i>
Prerequisites: 351, 361. Methods, techniques, and materials for teaching secondary choral music. Develops competencies in literature, selection, rehearsal techniques, and programming methodology.		
345	LOW BRASS METHODS	<i>1 credits</i>
Prerequisites: 222, 262, 277, 289. A comprehensive approach to the pedagogy and performance of the low brass for the instrumental music education major in preparation for teaching music.		
346	FLUTE & DOUBLE REED METHODS	<i>1 credits</i>
Prerequisites: 345, 340, 351. A comprehensive approach to the pedagogy and performance of the flute and double reeds for the instrumental music education major in preparation for teaching music.		
351	MUSIC HISTORY I	<i>3 credits</i>
Sequential. Prerequisites: 122, 155. Development of music from ancient to modern times; scores, recordings and live performances as illustrative material.		
352	MUSIC HISTORY II	<i>3 credits</i>

Sequential. Prerequisites: 122, 155. Development of music from ancient to modern times; scores, recordings and live performances as illustrative material.

353	ELECTRONIC MUSIC	<i>3 credits</i>
Theory of electronically generated sound and practice of electronic music composition. Emphasis is on understanding digital and analog synthesizers in a MIDI recording studio.		
361	CONDUCTING	<i>2 credits</i>
Prerequisites: All Majors?155, 222, 262; Vocal?289, 351, or permission; Instrumental ? 254, 346, 352, 454 or permission. Study and practice of conducting techniques; patterns, fermatas, tempo and dynamic change, attacks and releases, score reading, aural skills. One hour lab required.		
363	INTERMED CONDUCTING: CHORAL	<i>2 credits</i>
Prerequisite: 361 or instructor permission. Introduction to choral conducting with emphasis on manual techniques, vocal skills, aural skills, and gaining conducting experience.		
366	SONG LITERATURE I	<i>2 credits</i>
Prerequisite: 222 or permission. Systematic study of French and German song literature presented chronologically. Includes study of stylistic compositional characteristics and repertoire of major composers of song literature.		
367	SONG LITERATURE II	<i>2 credits</i>
Prerequisite: 222 or permission. Systematic study of American, British and Italian song literature presented chronologically. Includes study of stylistic compositional characteristics and repertoire of major composers of song literature.		
368	GUITAR STYLES	<i>2 credits</i>
Prerequisite: 200 performance level or permission of instructor. Techniques involved in performing musical styles other than those in classical guitar. Included are plectrum styles such as bluegrass, country and rock, as well as flamenco, folk, popular and jazz.		
371	ANALYTICAL TECHNIQUES	<i>2 credits</i>
Prerequisite: 222. Techniques for analysis of musical score from all eras of Western music history, with major emphasis on works of Baroque, Classical and Romantic periods.		
372	POST-TONAL ANALYTIC TECHNIQUES	<i>2 credits</i>
Prerequisite: 222. Techniques for the analysis of musical scores from the 20th and 21st Centuries. Required of a composition major.		
407	JAZZ ARRANGING & SCORING	<i>2 credits</i>
Prerequisite: 454 and 309. Study of jazz instrumentation from small groups to large ensembles.		
415	TCH & LIT: BRASS INSTRUMENTS	<i>2 credits</i>
Prerequisite: permission of instructor. Research in current trends and issues in brass teaching techniques and appropriate literature.		
416	TCHG & LIT: WOODWIND INSTR	<i>2 credits</i>
Prerequisite: permission of instructor. Research in current trends and issues in woodwind teaching techniques and appropriate literature.		
432	TCHG & LIT: PERCUSSION INSTRUM	<i>2 credits</i>
To train undergraduate and graduate percussion students in techniques of percussion education. Emphasis on research, literature, performance, and techniques from elementary through secondary levels.		
442	INSTRUMENTAL METHODS	<i>2 credits</i>
Prerequisites 346, 352, 454, 254. Procedures for teaching instrumental music at all levels. Special emphasis will be placed on classroom management, recruitment, assessment, literature selection, scheduling, and rehearsal organization. Clinical and field experience.		
443	INSTRUMENTAL PRACTICUM	<i>2 credits</i>
Prerequisite 442. Procedures for teaching instrumental music at all levels. Special emphasis will be placed on classroom management, recruitment, assessment, literature selection, scheduling, and rehearsal organization. Clinical and field experience.		
451	INTRODUCTION TO MUSICOLOGY	<i>2 credits</i>
Prerequisite: 352. Comparative musicology; acoustics; psychology and physiology of music; aesthetics; theory of music theory; historical musicology.		
453	MUSIC SOFTWARE SURVEY/USE	<i>2 credits</i>
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 programmer.		
454	ORCHESTRATION	<i>2 credits</i>
Prerequisite: 222. Theory of instrumentation ranging from small ensembles to full band and orchestras.		
455	ADV CONDUCTING: INSTRUMENTAL	<i>2 credits</i>
Prerequisite: 361, 442 or permission. Baton techniques and problems relating to practice, reading and preparation of scores; organization of ensembles; programming; conducting large instrumental ensembles. One hour lab required.		
456	ADVANCED CONDUCTING: CHORAL	<i>2 credits</i>
Prerequisite: 363. Conducting techniques to the choral ensemble, including leadership, error detection, tonal development, stylistic accuracy and analysis. One hour lab required.		
457	SENIOR RECITAL	<i>0 credits</i>

Permission of applied instructor is required for this course, which is taken only during the semester of the Senior Recital.

458	PERCUSSION METHODS	<i>1 credits</i>
Prerequisites: 346, 352, acceptance into Music Education Program. A comprehensive approach to the pedagogy and performance of the percussion instruments for the instrumental education major in preparation for teaching music.		
463	REPertoire & PED: STRING INSTR	<i>3 credits</i>
Prerequisite: permission of instructor. Study in depth of the four bowed string instruments, their teaching and close relationship. Despite obvious difference in physical application of cello and bass from violin and viola, methods of bowing, sound production and coloring are closely related. Application of the instruments to solo, chamber and orchestral playing.		
465	VOCAL PEDAGOGY	<i>2 credits</i>
Prerequisite: 300 or above with permission of instructor. In depth study of subjects dealing with teaching voice: physiology of the vocal instrument, principles governing vocal production and application of vocal pedagogy.		
467	GUITAR PEDAGOGY	<i>2 credits</i>
Prerequisite: permission of instructor. A systematic analysis of prevailing schools of guitar pedagogy. Sound production physiology, method books and special problems in teaching addressed.		
468	GUITAR ARRANGING	<i>2 credits</i>
Prerequisite: permission of instructor. After comparative analysis of selected examples, students make original solo guitar arrangements of works written for other solo instruments and ensembles.		
469	HISTORY & LIT: GUITAR & LUTE	<i>2 credits</i>
Prerequisite: permission of instructor. Study of plucked, fretted, string instruments from the 14th Century to the present: construction, notation, literature and performance practices. Modern editions and recordings evaluated.		
471	COUNTERPOINT	<i>2 credits</i>
Prerequisite: permission of instructor. Designed to give student of theory-composition necessary knowledge and skills for understanding contrapuntal practices and procedures; emphasis on 20th-Century techniques.		
472	ADVANCED ORCHESTRATION	<i>2 credits</i>
Prerequisite: 454. Study of techniques of orchestral style as found in major works from classical orchestra of Haydn and Mozart through modern orchestra of Stravinsky, Bartok, Berg and Schoenberg.		
490	W: MUSIC	<i>1-3 credits</i>
Prerequisite: permission of instructor. Investigation of topics not offered in regular curriculum. Graduate student must fulfill additional requirements.		
492	STUDENT TEACHING COLLOQUIUM	<i>1 credits</i>
Prerequisite: restricted to students enrolled in Student Teaching in Music. For music education majors; certification, contracts, benefits, job market prospects and student teaching experience sharing.		
497	INDP STUDY: MUSIC	<i>1-2 credits</i>
(May be repeated for a total of four credits) Prerequisites: senior standing and permission of department head. Music major only. Independent study under supervision of specially selected faculty members in subject area bearing on student's own goals.		
498	SENIOR HONORS PROJECT: MUSIC	<i>1-3 credits</i>
(May be repeated for a total of six credits) Individually designed project demonstrating scholarship, analysis, advanced musicianship, research and/or creativity according to student interest. Restricted to University honors music student.		
525	MUSIC TCHG METH FOR GRAD STDNT	<i>2 credits</i>
Basic pedagogic 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	<i>2 credits</i>
Prerequisite: Undergraduate music theory equivalent to four semesters. Review of basic music a theory concepts. Coverage includes the chromatic harmony vocabulary of the 18th, 19th, and 20th centuries.		
527	GRADUATE MUSIC HISTORY REVIEW	<i>2 credits</i>
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.		
532	TCHG & LIT: PERCUSSION INSTRUM	<i>2 credits</i>
To train undergraduate and graduate percussion students in techniques of percussion education. Emphasis on research, literature, performance, and techniques from elementary through secondary levels.		
551	INTRODUCTION TO MUSICOLOGY	<i>2 credits</i>
Prerequisite: 352. Comparative musicology; acoustics; psychology and physiology of music; aesthetics; theory of music theory; historical musicology.		
553	MUSIC SOFTWARE SURVEY/USE	<i>2 credits</i>
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 programmer.		
555	ADV CONDUCTING: INSTRUMENTAL	<i>2 credits</i>
Prerequisites: 361 and 442 or permission. Baton techniques and problems relating to practice, reading and preparation of scores; organization of ensembles; programming; conducting large instrumental ensembles. One hour lab required.		

556	ADVANCED CONDUCTING: CHORAL	<i>2 credits</i>
Prerequisite: 361 or equivalent. Conduction techniques to the choral ensemble, including leadership, error detection, tonal development, stylistic accuracy and analysis. One hour lab required.		
563	REPertoire & PED: STRING INSTR	<i>3 credits</i>
Prerequisite: permission of instructor. Study in depth of the four bowed string instruments, their teaching and close relationship. Despite obvious difference in physical application of cello and bass from violin and viola, methods of bowing, sound production and coloring are closely related. Application of the instruments to solo, chamber and orchestral playing.		
567	GUITAR PEDAGOGY	<i>2 credits</i>
Prerequisite: permission of instructor. A systematic analysis of prevailing schools of guitar pedagogy. sound production psychology, method books and special problems in teaching addressed.		
568	GUITAR ARRANGING	<i>2 credits</i>
Prerequisite: permission of instructor. After comparative analyses of selected examples, student make original solo guitar arrangements of works written for other solo instruments ensembles.		
569	HISTORY & LIT: GUITAR & LUTE	<i>2 credits</i>
Prerequisite: permission of instructor. Study of plucked, fretted, string instruments from the 14th Century to the present; construction, notation, literature and performance practices. Modern editions and recordings evaluated.		
570	STD CHORAL LIT I: MEDIEVL/REN	<i>2 credits</i>
A survey of choral repertoire in terms of general structure, character, voicing, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.		
571	STUDIES CHORAL LIT II: BAROQUE	<i>2 credits</i>
A study of the repertoire in terms of general structure, character, voicing, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.		
572	STD CHOR LIT III: CLASC/ROMANT	<i>2 credits</i>
A study of the repertoire in terms of general structure, character, voicing, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.		
573	STD CHOR LIT IV: 20TH CENTURY	<i>2 credits</i>
A study of the repertoire in terms of general structure, character, voicing, notation, pitch, ornamentation, improvisation, and interpretation of dynamics, rhythm, articulation, and tempo.		
574	INTEGRATIVE CONDUCT WORKSHOP	<i>2 credits</i>
A study of how to prepare and execute effective rehearsal which respond to the needs of the singers while maintaining stylistic integrity in executing the music.		
590	W: MUSIC	<i>1-3 credits</i>
Prerequisite: permission of instructor. Investigation of topics not offered in regular curriculum. Graduate student must fulfill additional requirements.		
601	CHORAL LITERATURE	<i>2 credits</i>
Prerequisite: permission of instructor. Study in depth of style, structure, technical demands, manner of setting text, and special performance problems found in masterworks by great choral composers of nine centuries.		
604	DEVELOPMENT OF OPERA	<i>2 credits</i>
Prerequisite: permission of instructor. Growth and development of opera from 1600 to present. Includes detailed examination of stylistic and structural changes as well as performance practices.		
609	PEDAGOGY: JAZZ IMPROVISATION	<i>3 credits</i>
A detailed study of the methods and materials as they relate to the teaching of jazz improvisation.		
611	FOUNDNS & PRINC OF MUSIC EDUC	<i>3 credits</i>
A study of basic historical, philosophical, sociological, and psychological concepts in the context of music education.		
612	PRACTICES & TRENDS MUSIC EDUC	<i>3 credits</i>
A study of the history of practices and trends in American music education.		
613	INST PROGRM/MUSIC FOR MICROCOM	<i>3 credits</i>
Prerequisite: 553. Introduction to programming languages for the microcomputer including BASIC, Pascal and Assembler. Programming will be directed towards music educational concepts.		
614	MEASRMNT & EVALUATION IN MUSIC	<i>3 credits</i>
A study of measurement and evaluation techniques and their application in music education.		
615	MUSICAL STYLES & ANALYSIS I	<i>2 credits</i>
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from period of Gregorian chant through music of Palest Gesualdo and others of late Renaissance.		
616	MUSICAL STYLES & ANALYSIS II	<i>2 credits</i>
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from Monteverdi through early Beethoven.		
617	MUSICAL STYLES & ANALYSIS III	<i>2 credits</i>
Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music from period of late Beethoven through Mahler and Strauss.		
618	MUSICAL STYLES & ANALYSIS IV	<i>2 credits</i>

Prerequisite: permission of instructor. Detailed study of compositional techniques and stylistic traits observed in Western music in 20th Century.

621	MUSIC HST SURV: MID AGES & REN	<i>2 credits</i>
Prerequisite: permission of instructor. Historical and stylistic analysis of all aspects of music of Middle Ages and Renaissance. Research and writing in areas of special interest.		
622	MUSIC HISTORY SURVEY: BAROQUE	<i>2 credits</i>
Prerequisite: permission of instructor. Historical and stylistic analysis of Baroque music; study in depth of specific examples, from recordings, scores and live performances; continuation and synthesis of approaches normal to study of music history; selected readings related to each student's particular fields of interest; project papers.		
623	MUS HST SURV: CLASSIC & ROMANT	<i>2 credits</i>
Prerequisite: permission of instructor. Historical and stylistic analysis of classic and romantic music; study in depth of specific examples, through recordings, scores and live performances; discontinuation and synthesis of approacher normal to study of music history; selected readings related to each student's particular fields of interest; project papers.		
624	MUS HST SURV: MUSIC SINCE 1900	<i>2 credits</i>
Prerequisite: permission of instructor. Historical and stylistic analysis of music since 1900; study in depth of specific examples through recordings and live performances, continuation and synthesis of approaches normal to study of music history; selected readings and project papers.		
625	GRADUATE BIBLIOGRAPHY & RSCH	<i>2 credits</i>
Prerequisite: undergraduate music degree of equivalent. Examination of all types of published music materials; research methods for thesis preparation and professional publishing; field trips to music libraries, computerized music research.		
627	COMPUTER STUDIO DESIGN	<i>2 credits</i>
The design and maintenance of a computer lab. Emphasis on hardware and software setup to maximize function and minimize maintenance.		
630	TCHNG & LIT: BRASS INSTRUMENTS	<i>2 credits</i>
Prerequisite: permission of instructor. Research in current trends and issues in brass teaching techniques and appropriate literature.		
631	TCHG & LIT: WOODWIND INSTRUMNTS	<i>2 credits</i>
Prerequisite: permission of instructor. To delineate and clarify contemporary techniques of woodwind pedagogy and to develop a comprehensive understanding of woodwind literature.		
633	TCHG & LIT: PIANO & HARPSICHRD	<i>2 credits</i>
Prerequisite: permission of instructor. The examination of piano and harpsichord literature in historically chronological order with special attention to its pedagogical value and stylistic differences.		
634	TCHNG & LIT: STRING INSTRUMNTS	<i>2 credits</i>
Prerequisite: permission of instructor. Research in current trends and issues in string teaching techniques and appropriate literature.		
640	ADVANCED ACCOMPANYING I	<i>1 credits</i>
Prerequisite: Graduate standing in keyboard performance and/or accompanying or the permission of the instructor. An in-depth study of principles of accompanying, sight reading, standard repertoire, and transposition.		
641	ADVANCED ACCOMPANYING II	<i>1 credits</i>
Prerequisite: Graduate standing in keyboard performance and/or accompanying or the permission of the instructor. An in-depth study of principles of accompanying, sight reading, standard repertoire, and transposition.		
642	ADVANCED ACCOMPANYING III	<i>1 credits</i>
Prerequisite: Graduate standing in keyboard performance and/or accompanying or the permission of the instructor. An in-depth study of principles of accompanying, sight reading, standard repertoire, and transposition.		
643	ADVANCED ACCOMPANYING IV	<i>1 credits</i>
Prerequisite: Graduate standing in keyboard performance and/or accompanying or the permission of the instructor. An in-depth study of principles of accompanying, sight reading, standard repertoire, and transposition.		
647	MASTERS CHAMBER RECITAL	<i>1 credits</i>
Prerequisite: permission of instructor. Composition student will present a recital of chamber music compositions (at least one-half hour in length) written while in residence at the University. Student will actively organize and coordinate the recital and will also participate either as performer or conductor.		
653	ELECTRONIC MUSIC	<i>3 credits</i>
The theory and practice of electronic music composition. Developing a practical understanding of sound synthesis and MIDI in a digital/analog multi-track recording studio.		
657	STUDENT RECITAL	<i>0 credits</i>
Required of all music majors. Forum for student and faculty providing lectures, recitals, and opportunity to practice skills for successful music performance.		
665	VOCAL PEDAGOGY	<i>2 credits</i>
Prerequisite: permission of instructor. In-depth study of subjects dealing with teaching of voice: physiology of vocal instrument, principles governing vocal production and application of vocal pedagogy.		
666	ADVANCED SONG LITERATURE I	<i>2 credits</i>

Prerequisite: permission of instructor. Systematic study of song literature presented chronologically according to national schools of composition. Stylistic compositional characteristics and representative works of all major composers of solo song literature.

667 **ADVANCED SONG LITERATURE II** *2 credits*

Prerequisite: permission of instructor. Systematic study of American, British and Italian song literature presented chronologically. Includes study of stylistic compositional characteristics and repertoire of major composers of song literature.

675 **SEM: MUSIC EDUCATION** *1-3 credits*

(May be repeated for a total of 6 credits) Intensive examination of special topics in the field of music education.

697 **ADV PROB: MUSIC** *1-3 credits*

(May be repeated for a total of eight credits) Prerequisite: permission of graduate advisor. Studies or research projects related to problems in music.

698 **GRADUATE RECITAL** *2 credits*

Prerequisite: permission of graduate advisor. Recital prepared and presented as a requirement for any appropriate degree option. If recital document is to be written in conjunction with the recital, add 699 for the additional credit. Once passed, may not be repeated for credit.

699 **MASTERS THESIS/PROJECT** *4-6 credits*

Prerequisite: permission of graduate advisor. Research related to the completion of the master's thesis, project, or recital document written in conjunction with the graduate recital, depending on the student's degree option.



Music Organizations(7510)

101	UNIV SYMPH: YOUTH ORCHESTRA	<i>1 credits</i>
This ensemble is designed for the post-secondary student who wishes to participate in a select group performing orchestral literature. By audition only.		
102	AKRON SYMPH: CHORUS	<i>1 credits</i>
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.		
103	UNIV SYMPH: ORCHESTRA	<i>1 credits</i>
Membership by audition. Organization devoted to study of orchestral literature. Full-length concerts as well as special University appearances. Major conducted ensemble.		
104	SYMPHONIC BAND	<i>1 credits</i>
Membership by audition. The University Symphonic Band is the most select band at the University and performs the most demanding and challenging music available. Major conducted ensemble.		
105	VOCAL CHORAL ENSEMBLE	<i>1 credits</i>
Membership open to those enrolled in applied voice study. Coaching and rehearsal of solo and ensemble literature for voices from operatic, oratorio and lieder repertoires.		
106	BRASS ENSEMBLE	<i>1 credits</i>
Membership by audition. Study and performance of literature for brass ensemble from all periods of music history. Frequent public concerts. For advanced brass players.		
107	STRING ENSEMBLE	<i>1 credits</i>
Membership by audition. In-depth study of performance of chamber music literature with special emphasis on string quartet and piano trio.		
108	OPERA/LYRIC THEATER WORKSHOP	<i>1 credits</i>
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.		
109	PERCUSSION ENSEMBLE	<i>1 credits</i>
Membership by audition. Study and performance of literature for various percussion groups; develops skill in ensemble performance.		
110	WOODWIND ENSEMBLE	<i>1 credits</i>
Membership by audition. Study, reading, and performance of major orchestral and serenade repertoire for wind instruments.		
114	KEYBOARD ENSEMBLE	<i>1 credits</i>
In-depth study of ensemble playing. Eight semesters required for Keyboard majors, six semesters for Keyboard Mus. Ed. majors, and each semester for keyboard scholarship recipients.		
115	JAZZ ENSEMBLE	<i>1 credits</i>
Membership by audition. Provides experience in jazz ensemble performance. Student is assumed to have knowledge of rudiments of music and some experience in jazz performance.		
116	GUITAR ENSEMBLE	<i>1 credits</i>
Membership by audition. Provides experience in conducted ensemble performance for guitarists. Major conducted ensemble.		
118	SMALL ENSEMBLE-MIXED	<i>1 credits</i>
Chamber Ensemble, Baroque Ensemble and Contemporary Music Ensemble. Each is a group of diverse instruments which rehearses and performs a selected body of music.		
120	CONCERT CHOIR	<i>1 credits</i>
Membership by audition. Highly select mixed choir. Performs classical literature from all periods. Campus, regional, and tour performances. "Major conducted ensemble" for vocal majors.		
121	UNIVERSITY SINGERS	<i>1 credits</i>
Membership by audition. Mixed ensemble devoted to performance of a wide variety of choral literature from classical to popular. "Major conducted ensemble" for vocal majors.		
125	CONCERT BAND	<i>1 credits</i>
Membership by audition. This ensemble performs the finest literature available for concert bands today. Major conducted ensemble.		
126	MARCHING BAND	<i>1 credits</i>

Enrollment is open to all members of the University student body. This organization is noted for its high energy performances at University football games.

127	BLUE & GOLD BRASS	<i>1 credits</i>
Membership by audition. The official band for Akron home men's basketball games.		
128	UNIVERSITY BAND	<i>1 credits</i>
The University Band is open to all members of the University community and performs excellent standard band literature. Major conducted ensemble.		
129	BLUE & GOLD BRASS II	<i>1 credits</i>
Membership by audition. The official band for Akron home ladies basketball games.		
130	SUMMER CONCERT BAND	<i>1 credits</i>
University of Akron Summer Concert Band is open to all wind and percussion musicians, and performs the finest in band literature.		
421	GUITAR CHAMBER MUSIC	<i>1 credits</i>
Prerequisite: Open to all upper class instrumentalists and vocalists. Guitarists must have taken Guitar Ensemble, 7510:116. Study, coaching, and performance of major works for guitar with other instruments or voice. Major conducted ensemble for guitar majors.		
431	SUMMER DRUM CORPS EXPERIENCE	<i>1 credits</i>
Prerequisite: permission of instructor. Summer Drum Corps Experience provides one credit for participation in a Junior Level - Division I, II, or III Drum and Bugle Corps as part of the Drum Corps International Summer Music Games.		
521	GUITAR CHAMBER MUSIC	<i>1 credits</i>
Prerequisite: Open to all upper class instrumentalists and vocalists. Guitarists must have taken Guitar Ensemble, 7510:116. Study, coaching, and performance of major works for guitar with other instruments or voice. Major conducted ensemble for guitar majors.		
602	AKRON SYMPH: CHORUS	<i>1 credits</i>
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.		
603	UNIV SYMPH: ORCHESTRA	<i>1 credits</i>
Membership by audition. Organization devoted to study of orchestral literature. Full-length concerts as well as special University appearances. Major conducted ensemble.		
604	SYMPHONIC BAND	<i>1 credits</i>
Membership by audition. The University Symphonic Band is the most select band at the University and performs the most demanding and challenging music available.		
605	VOCAL CHAMBER ENSEMBLE	<i>1 credits</i>
Membership open to those enrolled in applied voice study. Coaching and rehearsal of solo and ensemble literature for voices from operatic, oratorio and lieder repertoires.		
606	BRASS ENSEMBLE	<i>1 credits</i>
Membership by audition. Study and performance of literature for brass ensemble from all periods of music history. Frequent public concerts. For advanced brass players.		
607	STRING ENSEMBLE	<i>1 credits</i>
Membership by auditing. In-depth study and performance of chamber music literature with special emphasis on string quartet and piano trio.		
608	OPERA/LYRIC THEATER WORKSHOP	<i>1 credits</i>
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.		
609	PERCUSSION ENSEMBLE	<i>1 credits</i>
Membership by auditing. Study and performance of literature for various percussion groups; develops skill in ensemble performance.		
610	WOODWIND ENSEMBLE	<i>1 credits</i>
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.		
614	KEYBOARD ENSEMBLE	<i>1 credits</i>
In-depth study of ensemble playing. Required for keyboard assistantship recipients.		
615	JAZZ ENSEMBLE	<i>1 credits</i>
Membership by audition. Provides experience in jazz ensemble performance. A student is assumed to have knowledge of rudiments of music and some experience in jazz ensemble performance.		
616	GUITAR ENSEMBLE	<i>1 credits</i>
See department for course description.		
618	SMALL ENSEMBLE-MIXED	<i>1 credits</i>
Chamber Ensemble, Baroque Ensemble and Contemporary Music Ensemble. Each is a group of diverse instruments which rehearses and performs a selected body of music.		
620	CONCERT CHOIR	<i>1 credits</i>

Membership by audition. Highly select mixed choir. Performs classical literature from all periods. Campus, regional, and tour performances. "Major conducted ensemble" for vocal majors.

621	UNIVERSITY SINGERS	<i>1 credits</i>
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Membership by audition. Mixed ensemble devoted to performance of a wide variety of choral literature from classical to popular. "Major conducted ensemble" for vocal majors.

624	OPERA CHORUS	<i>1 credits</i>
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Open to students and members of University community by audition. Rehearsal and production of opera and musical theatre literature with staging, costumes, and scenery.

625	CONCERT BAND	<i>1 credits</i>
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Membership by Audition. Performs the finest in concert band literature available for concert bands today.

626	MARCHING BAND	<i>1 credits</i>
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This organization is noted for its high energy performances a University football games. Enrollment is open to all members of the University student body.

627	BLUE & GOLD BRASS	<i>1 credits</i>
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The official band for Akron home basketball games. Membership is by audition.

628	UNIVERSITY BAND	<i>1 credits</i>
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The University Band is open to all members of the University community and performs excellent standard band literature. All music majors are required to complete a placement audition each fall semester. Major conducted ensemble.

629	BLUE & GOLD BRASS II	<i>1 credits</i>
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The official band for Akron home ladies basketball games. Membership is by audition.

630	SUMMER CONCERT BAND	<i>1 credits</i>
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University of Akron Summer Concert Band is open to all wind and percussion musicians, and performs the finest in band literature.



Applied Music (7520)

021	PERCUSSION	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.		
022	CLASSICAL GUITAR	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.		
023	HARP	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.		
024	VOICE	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.		
025	PIANO	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.		
026	ORGAN	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.		
027	VIOLIN	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.		
028	VIOLA	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.		
029	CELLO	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. Prerequisite: Permission of applied instructor. For students whose performance skills are not sufficient for placement at the 100 level or for elective credit in non-music programs. No credit toward any major in music. A fee is charged in addition to regular tuition.		
030	STRING BASS	<i>2-4 credits</i>

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

140 **SAXOPHONE** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

141 **HARPSICHORD** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

142 **COMPOSITION** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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. (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.

161 **JAZZ PERCUSSION** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

162 **JAZZ GUITAR** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

163 **JAZZ ELECTRIC BASS** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

164 **JAZZ PIANO** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

165 **JAZZ TRUMPET** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

235	TUBA	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
236	FLUTE OR PICCOLO	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
237	OBOE OR ENGLISH HORN	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
238	CLARINET OR BASS CLARINET	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
239	BASSOON OR CONTRABASSOON	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
240	SAXOPHONE	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
241	HARPSICHORD	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
242	COMPOSITION	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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. (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.		
261	JAZZ PERCUSSION	<i>2-4 credits</i>

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

340 **SAXOPHONE** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

341 **HARPSICHORD** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

342 **COMPOSITION** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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. (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.

361 **JAZZ PERCUSSION** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

362 **JAZZ GUITAR** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

363 **JAZZ ELECTRIC BASS** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

364 **JAZZ PIANO** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

365 **JAZZ TRUMPET** *2-4 credits*

Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

435	TUBA	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
436	FLUTE OR PICCOLO	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
437	OBOE OR ENGLISH HORN	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
438	CLARINET OR BASS CLARINET	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
439	BASSOON OR CONTRABASSOON	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
440	SAXOPHONE	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
441	HARPSICHORD	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
442	COMPOSITION	<i>2-4 credits</i>
Prerequisite: Placement audition in the School of Music. Individual instruction in vocal or instrumental performance. Two credits represent one half-hour lesson per week; four credits represent an hour lesson. Enrollment may be repeated each semester for credit. A fee is charged in addition to regular tuition. The following courses are intended for a student majoring in one of the programs in the School of Music. Course levels correspond approximately to class standing (100 for freshman, 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. (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.		
461	JAZZ PERCUSSION	<i>2-4 credits</i>

The following courses (521 - 569) are intended for a student majoring in one of the programs in the Department of Music. Course levels correspond approximately to class standing (100 for freshman, 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.

533	TROMBONE	<i>2-4 credits</i>
The following courses (521 - 569) are intended for a student majoring in one of the programs in the Department of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
534	BARITONE	<i>2-4 credits</i>
The following courses (521 - 569) are intended for a student majoring in one of the programs in the Department of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
535	TUBA	<i>2-4 credits</i>
The following courses (521 - 569) are intended for a student majoring in one of the programs in the Department of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
536	FLUTE OR PICCOLO	<i>2-4 credits</i>
The following courses (521 - 569) are intended for a student majoring in one of the programs in the Department of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
537	OBOE OR ENGLISH HORN	<i>2-4 credits</i>
The following courses (521 - 569) are intended for a student majoring in one of the programs in the Department of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
538	CLARINET OR BASS CLARINET	<i>2-4 credits</i>
The following courses (521 - 569) are intended for a student majoring in one of the programs in the Department of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
539	BASSOON OR CONTRABASSOON	<i>2-4 credits</i>
The following courses (521 - 569) are intended for a student majoring in one of the programs in the Department of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
540	SAXOPHONE	<i>2-4 credits</i>
The following courses (521 - 569) are intended for a student majoring in one of the programs in the Department of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
541	HARPSICHORD	<i>2-4 credits</i>
The following courses (521 - 569) are intended for a student majoring in one of the programs in the Department of Music. Course levels correspond approximately to class standing (100 for freshman, 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.		
542	COMPOSITION	<i>2-4 credits</i>
542 Private Lessons in Music Composition. (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	PERCUSSION	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
622	CLASSICAL GUITAR	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
623	HARP	<i>2-4 credits</i>

621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
624	VOICE	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
625	PIANO	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
626	ORGAN	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
627	VIOLIN	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
628	VIOLA	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
629	CELLO	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
630	STRING BASS	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
631	TRUMPET OR CORNET	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
632	FRENCH HORN	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
633	TROMBONE	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
634	BARITONE	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
635	TUBA	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
636	FLUTE OR PICCOLO	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
637	OBOE OR ENGLISH HORN	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
638	CLARINET OR BASS CLARINET	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
639	BASSOON OR CONTRABASSOON	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
640	SAXOPHONE	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
641	HARPSICHORD	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
642	APPLIED COMPOSITION	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
661	JAZZ PERCUSSION	<i>2-4 credits</i>
621-661 Graduate Study in Applied Music. (May be repeated) Prerequisites: undergraduate degree in music, graduate standing and/or permission of instructor determined through audition.		
662	JAZZ GUITAR	<i>2-4 credits</i>

(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 approved by composition faculty.

663	JAZZ ELECTRIC BASS	<i>2-4 credits</i>
See department for course description.		
664	JAZZ PIANO	<i>2-4 credits</i>
See department for course description.		
665	JAZZ TRUMPET	<i>2-4 credits</i>
See department for course description.		
666	JAZZ TROMBONE	<i>2-4 credits</i>
See department for course description.		
667	JAZZ SAXOPHONE	<i>2-4 credits</i>
See department for course description.		
668	JAZZ COMPOSITION	<i>2-4 credits</i>
See department for course description.		
669	JAZZ VOCAL STYLES	<i>2-4 credits</i>
See department for course description.		



Communication - School of (7600)

102	SURVEY OF MASS COMMUNICATION	<i>3 credits</i>
Considers entire field of contemporary American mass communication. Presents and explains functions of agencies through which news, views and entertainment reach the general public.		
105	INTRODUCTN TO PUBLIC SPEAKING	<i>3 credits</i>
Introduction to principles and practice of speaking by reading examples of speeches, studying techniques and methods employed and applying them in a variety of speaking situations.		
106	EFFECTIVE ORAL COMMUNICATION	<i>3 credits</i>
Principles of communication in speaker-audience, group and informal settings, and application of the principles in speeches, group discussions and other oral and written assignments.		
115	SURVEY OF COMMUNICATION THEORY	<i>3 credits</i>
Presents models of major forms of speech communication and discusses elements of models, their interaction and their function in the human communication system.		
226	INTERVIEWING	<i>3 credits</i>
Study and practical application of selected interviewing concepts associated with job interviewing, journalistic interviewing, and life review interviewing.		
227	NON-VERBAL COMMUNICATION	<i>3 credits</i>
Focused study of the principal aspects of nonverbal communication in public, group and interpersonal settings.		
228	ZTV	<i>1 credits</i>
Participation in the operations of the University television station. *Total repeats not to exceed eight credits. (Note: Students being paid salaries from Student Activity Funds are not eligible for credit.)		
230	WZIP-FM	<i>1 credits</i>
Participation in the operations of the University radio station. *Total repeats not to exceed eight credits. (Note: Students being paid salaries from Student Activity Funds are not eligible for credit.)		
231	FORENSICS	<i>1 credits</i>
Participation in the operations of the University forensics team. *Total repeats not to exceed eight credits. (Note: Students being paid salaries from Student Activity Funds are not eligible for credit.)		
232	BUCHTELITE	<i>1 credits</i>
Participation in the operations of the University newspaper. *Total repeats not to exceed eight credits. (Note: Students being paid salaries from Student Activity Funds are not eligible for credit.)		
233	TEL-BUCH	<i>1 credits</i>
Participation in the operations of the University year book. *Total repeats not to exceed eight credits. (Note: Students being paid salaries from Student Activity Funds are not eligible for credit.)		
235	INTERPERSONAL COMMUNICATION	<i>3 credits</i>
Theory and practice in interpersonal communication concepts and principles. Special topics in communication apprehension, assertive communication, communication dyads and triads, and transactional communication.		
245	ARGUMENTATION	<i>3 credits</i>
Study of process of developing, presenting and defending inferences and arguments in oral communication setting. Includes study and practice of evidence, reasoning, case construction, refutation and rebuttal.		
252	PERSUASION	<i>3 credits</i>
Emphasis on understanding persuasion theory and practice. Includes information analysis of motivational appeals and introduction to propaganda analysis.		
270	VOICE TRAINING FOR MEDIA	<i>3 credits</i>
Effective techniques and development of skills for voicework in radio and television.		
280	MEDIA PRODUCTION TECHNIQUES	<i>3 credits</i>
A basic introduction to both theory and practice of Single Camera production and Digital Editing.		
282	RADIO PRODUCTION	<i>3 credits</i>
Study of radio production techniques and the functional operation of AM and FM radio stations. Includes practical production experience in studio.		
283	STUDIO PRODUCTION	<i>3 credits</i>
Prerequisite: 280. Function, structure and influence of television as communication medium with practical experience in studio.		
284	LEGAL ISSUES IN MEDIA	<i>3 credits</i>

Concentration on government regulations and legal requirements in production of broadcasting, film, and print media. Particular emphasis on copyright.

287	RADIO & TV WRITING	<i>3 credits</i>
Prerequisite: 3300:111, 112 (with a grade of C or better) or permission. Practical application of broadcast writing principles and techniques used in commercials, PSAs, promotions, as well as scripts for comedy, drama, documentaries, business and education.		
300	NEWSWRITING	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, ability to type; 3300:111,112 (with a grade of C or better) or permission. Writing and editing news stories; with emphasis on deadline writing in a lab situation.		
301	ADVANCED NEWSWRITING	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, 300. Advanced course in writing and editing news, features and analysis for print media. Behavioral approach to communication of information and ideas.		
302	BROADCAST NEWSWRITING	<i>3 credits</i>
Prerequisites: Admitted to a four year degree granting college except Summit, 300, 280. The course is designed to teach students how to write, prepare, and deliver broadcast news copy for radio and television.		
303	PUBLIC RELATIONS WRITING	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, ability to type and 300. Introduction of writing skills required by public relations practitioners emphasizing different approaches for specific publics and specific media.		
304	EDITING	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, 300. Copyreading, headline writing, proofreading, makeup, type and typography, printing machines and processes, newspaper methods and systems.		
308	FEATURE WRITING	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, 300. Short newspaper and magazine articles, preparation of articles for publication, human interest situations, extensive writing with class discussion.		
309	PUBLIC RELATIONS PUBLICATION	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. Preparation of publications used as communication tools in public relations, advertising and organizations. Emphasis upon design, layout and technology.		
325	INTERCULTURAL COMMUNICATION	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. Study of effect on oral communication process of existence of cultural barriers. Includes study of verbal and nonverbal communication in transracial, informal international and diplomatic communicative settings.		
344	GROUP DECISION MAKING	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. Study of communication and decision making in small groups. Practice in techniques of group decision-making. Introduction to theory of group communication.		
345	BUSINESS & PROFESSIONAL SPEAKING	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit; 7600:105 or 106. Practical improvement in speaking skills used in business settings.		
346	ADVANCED PUBLIC SPEAKING	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit; 7600:105 or 106. Theory and practice of public speaking; audience analysis; advanced methods for organizing persuasive speeches; techniques of research, style, and delivery; professional speech writing; extensive speaking practice.		
355	FREEDOM OF SPEECH	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. Discussion and analysis of the Constitution's free speech guarantee; contemporary issues in freedom of communication; role of the media in free speech issues.		
368	BASIC AUDIO & VIDEO EDITING	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, 280. A basic practical introduction to audio and video editing and the Avid Editing system in the MediaNet environment.		
372	SINGLE CAMERA PRODUCTION	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, 280; prerequisite or co-requisite: 368. It covers both theory and practice of digital video and helps develop professional skills in lighting, usage of lenses, visual composition, and sound recording for Single Camera applications.		
375	WEB PRODUCTION	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. Study of technological change and innovation in media with particular emphasis on multi-media design and production.		
378	T: MEDIA HISTORY/GENRE	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. In-depth study of topics in media history and genre. Repeatable with a change in topic (9 credits maximum).		
384	COMMUNICATION RESEARCH	<i>3 credits</i>
Prerequisites: Admitted to a four year degree granting college except Summit, 102, 115 (with a grade of C or better); completion of General Education Math Requirement. Fundamental concepts of communication research methods, and the analysis, application, and interpretation of data in communication and media operations.		

388	HISTORY OF BROADCASTING	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, 102. Growth of broadcasting in America; historical evolution of radio, television, and cable industries; contributions of inventors, entrepreneurs and talent.		
396	PROGRAM & AUDIENCE ANALYSIS	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, 102, prerequisite or co-requisite: 384. Analysis of broadcast audiences in program acquisition and scheduling. Examination of programming processes, philosophies, scheduling and promotions.		
400	HISTORY OF JOURNALISM: AMERICA	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. A review and analysis of the historical evolution of journalism in America, focusing primarily on newspapers, magazines, radio, television.		
403	PUBLIC RELATIONS STRATEGIES	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. Selected communication theories used to analyze and implement effective public relations programs with emphasis placed upon research, planning, promotional messages and evaluation of program.		
404	PUBLIC RELATIONS CASES	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. Prerequisite or corequisite: 7600:403. Continuation of 403. Application of principles of public relations profession in an actual organizational setting.		
405	MEDIA COPYWRITING	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, 309. Selected communication theories and research techniques used to plan, write and analyze commercial messages. Emphasis will be placed on selection of audience, medium, appeal, writing style and evaluation of efforts.		
406	CONTEMPORARY PUBLIC RELATIONS	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. Study and practical application of communication concepts, theories and skills relevant to public relations programs in businesses and nonprofit organizations		
408	WOMEN, MINORITIES & NEWS	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, 300. Study of images in U.S. news, along with the power women and minorities have as decision-makers in the news industry.		
410	JOURNALISM MANAGEMENT	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. This course is designed to educate students in the management of journalistic operations, including the magazine and newspaper industries.		
416	NEW MEDIA WRITING	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, 300. This class will look at how today's professionals practice on-line publishing. Students will work on writing and reporting skills needed in this new media.		
417	NEW MEDIA PRODUCTION	<i>3 credits</i>
Prerequisites: Admitted to a four year degree granting college except Summit; 416 or permission. Covers practical application of software to create on-line multimedia documents and explores design ideas for New Media Journalism content.		
420	MAGAZINE WRITING	<i>3 credits</i>
Prerequisites: Admitted to a four year degree granting college except Summit, 300, 308. An advanced writing course designed to develop the specialized researching, reporting, and writing skills needed in consumer and specialized business magazines today.		
425	COMMERCIAL ELECTRONIC PUBLISHING	<i>3 credits</i>
Prerequisites: Admitted to a four year degree granting college except Summit, 300. Explore basic principles of magazine publishing in its broad definition, layout, type and typography, print production of magazines.		
435	COMMUNICATION IN ORGANIZATIONS	<i>3 credits</i>
Prerequisites: Admitted to a four year degree granting college except Summit, 345 or permission. Overview of theories and approaches for understanding communication flow and practices in organizations, including interdepartmental, networks, superior-subordinate, formal and informal communication.		
436	ANALYZING ORGANIZATIONAL COMMUNICATION	<i>3 credits</i>
Prerequisites: Admitted to a four year degree granting college except Summit; 344, 384 and 435, or permission. Methodology for in-depth analysis and application of communication in organizations; team building; conflict management, communication flow. Individual and group projects; simulations.		
437	TRAINING METHODS-COMMUNICATION	<i>3 credits</i>
Prerequisites: Admitted to a four year degree granting college except Summit; 345 or permission. Principles and concepts in the design and delivery of communication training programs; integration of theory and methodology; presentation skills; matching methods and learner needs.		
438	HEALTH COMMUNICATION	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. The course presents an overview of health communication theory and research issues in interpersonal, small group, organizational, public relations, and mass media contexts.		
439	INDEPENDENT STUDY: COMMUNICATION	<i>1-12 credits</i>
(May be repeated for a total of 12 credits) Prerequisites: Admitted to a four year degree granting college except Summit, permission of faculty. Directed independent readings, research, projects and productions. Written proposal must be submitted before permission is granted. Appropriate documentation of work required.		

446	WOMEN, MINORITIES & MEDIA	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. 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.		
450	ST: COMMUNICATION	<i>3 credits</i>
(May be repeated for a total of nine credits) Prerequisite: Admitted to a four year degree granting college except Summit. Special interest topics in mass communication, journalism, or communication, supplementing courses listed in University Bulletin. See department for current listing of offerings.		
454	THEORY OF GROUP PROCESSES	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. Group communication theory and conference leadership as applied to individual projects and seminar reports.		
457	PUBLIC SPEAKING IN AMERICA	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. 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.		
459	LEADERSHIP & COMMUNICATION	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. Theories of leadership and communication across public, organizational, small group, interpersonal, and political contexts. Assessments tools provided. Guest speakers.		
462	ADVANCED MEDIA WRITING	<i>3 credits</i>
Prerequisites: Admitted to a four year degree granting college except Summit; 280, 300, 387 or equivalent. Practical applications of script writing principles and techniques, focusing on the skills and discipline required to finish an entire script.		
468	ADVANCED AUDIO & VIDEO EDITING	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, 280, 368, 372. A study of film and video editing. It provides practical experience and exposure to the various creative approaches and techniques of film / video editing.		
470	ANALYSIS OF PUBLIC DISCOURSE	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. Identifies principal textual and contextual elements of public discourse and presents various theories and models to be applied in studying rhetorical acts.		
471	THEORIES OF RHETORIC	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. Study of key figures in history of rhetorical theory, stressing interrelationships among theories of rhetoric, intellectual climates and social climates.		
475	POLITICAL COMMUNICATION	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. Students explore the relationship between politicians, citizens, and media. Topics include media coverage, campaign technologies, advertising, debates, engagement, rhetoric, and attitudes. Theories and methodologies discussed		
480	COMMUNICATION INTERNSHIP	<i>1-8 credits</i>
(May be repeated for a total of eight credits) Prerequisites: Admitted to a four year degree granting college except Summit, 24 credits in departmental courses, 2.5 overall GPA, and permission. Provides student with supervised experience and on-the-job training. Written permission must be obtained from the School prior to the term for which credit is to be received.		
481	FILM AS ART: INTR TO FILM FORM	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit. 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.		
485	HONORS PROJ: COMMUNICATION	<i>2-6 credits</i>
Prerequisites: Admitted to a four year degree granting college except Summit, approval of honors preceptor. Independent study project leading to completion of honors research, creative or service project.		
486	BROADCAST SALES & MGMT	<i>3 credits</i>
Prerequisite: Admitted to a four year degree granting college except Summit, 7384. Prerequisite or Co-requisite: 396. Using simulation and case history techniques, this course examines the sales and decision-making processes of a broadcast station.		
490	W: COMMUNICATION	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisite: Admitted to a four year degree granting college except Summit. Group study or group projects investigating a particular phase of media not covered by other courses in curriculum.		
493	PRODUCTION PRACTICUM	<i>3 credits</i>
Prerequisites: Admitted to a four year degree granting college except Summit, permission. Practical application of writing, directing, management, recording, and editing skills in problems in electronic media production.		
500	HISTORY OF JOURNALISM IN AMERICA	<i>3 credits</i>
A review and analysis of the historical evolution of journalism in America, focusing primarily on newspapers, magazines, radio, television.		
506	CONTEMPORARY PUBLIC RELATIONS	<i>3 credits</i>

Study and practical application of communication concepts, theories and skills relevant to public relations programs in businesses and nonprofit organizations.

508	WOMEN, MINORITIES & NEWS	<i>3 credits</i>
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	<i>3 credits</i>
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	<i>3 credits</i>
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	<i>3 credits</i>
An advanced writing class designed to develop the specialized reporting, researching, and writing skills needed in consumer and specialized business magazines today.		
525	COMMERCIAL ELECTRONIC PUBLISHING	<i>3 credits</i>
This advanced class allows an in depth investigation of the business and production principles of electronic publishing of magazines.		
535	COMMUNICATION IN ORGANIZATIONS	<i>3 credits</i>
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	<i>3 credits</i>
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-COMMUNICATION	<i>3 credits</i>
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	<i>3 credits</i>
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 & MEDIA	<i>3 credits</i>
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	<i>3 credits</i>
Group communication theory and conference leadership as applied to individual projects and seminar reports.		
557	PUBLIC SPEAKING IN AMERICA	<i>3 credits</i>
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 & COMMUNICATION	<i>3 credits</i>
Theories of leadership and communication across public, organizational, small group, interpersonal, and political contexts. Assessments tools provided. Guest speakers.		
562	ADVANCED MEDIA WRITING	<i>3 credits</i>
Practical applications of script writing principles and techniques, focusing on the skills and discipline required to finish an entire script.		
568	ADVANCED AUDIO & VIDEO EDITING	<i>3 credits</i>
Prerequisite: Permission of instructor. A study of film and video editing. It provides practical experience and exposure to the various creative approaches and techniques of film / video editing.		
571	THEORIES OF RHETORIC	<i>3 credits</i>
Study of key figures in history of rhetorical theory, stressing interrelationships among theories of rhetoric, intellectual climates and social climates.		
575	POLITICAL COMMUNICATION	<i>3 credits</i>
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: INTRO TO FILM FORM	<i>3 credits</i>
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	W: COMMUNICATION	<i>1-3 credits</i>
(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	INTRO GRAD STUDY-COMMUNICATION	<i>3 credits</i>
Introduction to the ideas and scholarship that constitute the various research interests in the department.		
602	QUALITATIVE METHODS-COMMUNICATION	<i>3 credits</i>

Prerequisite: 600. The course covers paradigms underlying qualitative inquiry, major methods of inquiry, and techniques utilized in the communication discipline. The course fosters students' ability to conduct qualitative research through gathering and analyzing data.

603	QUANTITATIVE MTHD-COMMUNICATN	<i>3 credits</i>
An introduction to elementary concepts of empirical and quantitative research and their application in studies of mass media research topics.		
606	COMMUNIC PROBS IN BASIC SPEECH	<i>1 credits</i>
Designed to train a graduate student in methods and materials of introductory speech course. Required of all teaching graduate assistants.		
608	COMMUNICATION PEDAGOGY	<i>3 credits</i>
Familiarizes students with aspects of teaching communication and media courses at the college level.		
624	SURVEY OF COMMUNICATION THEORY	<i>3 credits</i>
Study of dimensions of field of communication: information analysis, social interaction and semantic analysis.		
625	THEORIES OF MASS COMMUNICATION	<i>3 credits</i>
Prerequisite: 7600:600 or permission of instructor. A review of theories of mass media and studies exploring the effect of media.		
645	INTERCULTURAL COMMUNICATN THRY	<i>3 credits</i>
Analysis of the impact on the communication process of cultural difference between communicators; examination of existing literature in intercultural communication.		
670	COMMUNICATION CRITICISM	<i>3 credits</i>
Introduces the basic elements, approaches and types of critical discourse as it is relevant to communication and mass media studies.		
680	GRADUATE COMM INTERNSHIP	<i>1-6 credits</i>
(May be repeated for a total of six credits.) Prerequisites: must have attained the category of full admission and be in good standing in the School's graduate program; must receive permission and approval of internship placement and research proposal. Provides communication graduate students with opportunity to obtain experience and to apply knowledge of academic concepts in a supervised work setting in the communication field.		
691	ADVANCED COMMUNICATION STUDIES	<i>3 credits</i>
(May be repeated for a total of six credits.) Special topics in communication in areas of particular faculty expertise. Consult department for particular topic each semester.		
697	GRAD RES: COMMUNICATION	<i>1-6 credits</i>
(May be repeated for a total of six credits.) Prerequisites: 7800:600 and approval of project prospectus one term prior to undertaking the project. Performance of research on problems found in mass media-communication.		
698	MASTERS PROJECT/PRODUCTION	<i>1-6 credits</i>
(May be repeated for a total of six credits.) Prerequisite: Permission of the school director.		
699	MASTERS THESIS	<i>1-6 credits</i>
(May be repeated for a total of six credits.) Prerequisite: Permission of the school director.		



Theatre (7800)

100	EXPERIENCING THEATRE	<i>3 credits</i>
Experience the theatre as a live, dynamic art form through an exposure to and participation in University productions.		
103	THEATRE ORIENTATION	<i>0 credits</i>
Orientation to the information and strategies necessary to aid new theatre students in their understanding of the field of theatre.		
108	INTRO: VISUAL ARTS OF THEATRE	<i>3 credits</i>
Introduction to the design theory of scenic, costume, lighting and imagery of the theatre. The course includes the application of these principles to multimedia.		
145	MOVEMENT TRAINING	<i>3 credits</i>
Specialized physical training for the actor.		
151	VOICE & DICTION	<i>3 credits</i>
Speech improvement as it specifically applies to the stage. This course is concerned with the proper techniques and principles of vocal production in their practical application to stage performance.		
170	INTRO TO ACTING FOR NON-MAJORS	<i>3 credits</i>
Introduction to Acting for Non-majors is a course designed for the beginning student to develop an understanding of basic acting techniques.		
172	ACTING I	<i>3 credits</i>
Introductory fundamentals of acting through the investigation of the body as an instrument for the stage, improvisation and basic scene study.		
262	STAGE MAKEUP	<i>3 credits</i>
Theory and practice in the application of stage makeup from juvenile to character. Lecture/Lab.		
263	SCENE PAINTING	<i>3 credits</i>
The development of skills and knowledge of stage scenic painting required for the theatre designer and technician. Laboratory required.		
264	PLAYSCRIPT & PERFORM ANALYSIS	<i>3 credits</i>
An introduction to various methods of how to read and analyze a playscript for theatre production, utilizing theories and tools from Aristotle to today.		
265	BASIC STAGECRAFT	<i>3 credits</i>
Basic stagecraft including equipment, construction and handling of two-dimensional scenery and theatrical hardware. Laboratory required.		
274	DIGITAL TECHNOLOGY FOR THEATRE	<i>3 credits</i>
Hands-on exploration of theories and methods used in electronic development of promotional and creative materials. Activities include still and motion image capture, editing and distribution.		
300	THEATRE ORG & PROD MGMT	<i>3 credits</i>
Study of successful methods of theatre organization and production stage management of professional and non-professional performing arts operations.		
301	INTRO TO THEATRE THROUGH FILM	<i>3 credits</i>
Prerequisite: 3400:210 or 3400:221. A study of the Theatre with emphasis on its cultural and social influences on our society. Does not meet the Humanities requirement for Theatre majors.		
306	STAGE COSTUME DESIGN	<i>3 credits</i>
Prerequisites: 108, 264. Introduction to basic costume construction techniques, organization and maintenance of wardrobe for theatrical performance. Lab required.		
335	HIST OF THTR & DRAMA LIT I	<i>3 credits</i>
Prerequisite: 100. The history and theory of dramatic literature and theatre practices from the Greeks through the Restoration, including select non-western theatre traditions.		
336	SCENIC DESIGN	<i>3 credits</i>
Prerequisites: 108, 264. The theory of scene design and imagery of the theatre. The course may include the application of these principles to other media.		
345	THE AUDITION PROCESS	<i>3 credits</i>
Course presents skills, knowledge and experiences in the audition process.		
351	ADVANCED VOICE & MOVEMENT	<i>3 credits</i>

Prerequisites: 145, 151. Advanced training in movement techniques and vocal work, integrating the performer's physical and vocal instrument.

355	STAGE LIGHTING DESIGN	<i>3 credits</i>
Prerequisites: 100, 265. The art and technique of stage lighting design: light plotting, color theory, and optical effects.		
370	DIRECTING I	<i>3 credits</i>
Prerequisites: 100, 172, 264. Emphasizes fundamentals of play directing, including responsibilities of director, stage nomenclature, play selection, analysis, and rehearsal techniques.		
373	ACTING II	<i>3 credits</i>
Prerequisite: 172. Continuation of 172. Further emphasis on the psychology of the actor and development of performing techniques through scene study.		
374	ACTING III	<i>3 credits</i>
Prerequisite: 373. Further in-depth actor training with emphasis on the language and interpretation of classic plays including Shakespeare.		
403	ST: THEATRE ARTS	<i>1-4 credits</i>
(May be repeated as different subject areas are covered, but no more than 10 credits may be applied toward B.A. degree) Prerequisite: permission. Traditional and nontraditional topics in theatre arts, supplementing courses listed in the General Bulletin.		
421	MUSICAL THEATRE PRODUCTION	<i>3 credits</i>
Designed to make the theatre student aware of the total creative process involved in mounting a stage musical.		
435	HIST OF THTR & DRAMA LIT II	<i>3 credits</i>
Prerequisite: 335. The history and theory of dramatic literature and theatre practices from the eighteenth century through the present, including select non-western theatre traditions.		
436	STYLES OF SCENIC DESIGN	<i>3 credits</i>
Prerequisite: 336. Theatrical styles and periods in scenic design and scenography.		
455	CREATING PERFORMANCE	<i>3 credits</i>
(May be repeated for a total of six credits.) This course introduces devising processes, improvisation, ensemble work, and physical theatre techniques appropriate to the preparation of practical performance projects from sources other than a conventional play.		
461	DIRECTING II	<i>3 credits</i>
Prerequisite: 370. Emphasizes fundamentals of play directing, including responsibilities of director, stage nomenclature, play selection, analysis, and rehearsal techniques.		
467	CONTEMPORARY THEATRE STYLES	<i>3 credits</i>
A detailed examination of representative plays of the contemporary theatre with an emphasis on plays of the 1980s and 1990s.		
471	SENIOR SEMINAR	<i>1 credits</i>
Prerequisites: 7800:274, upper class standing, and permission from the theatre advisor. A forum to develop professional skills to make the transition to a theatre career: artistic, academic, business and professional.		
472	METHODS-TCHG ELEM THEATRE ARTS	<i>3 credits</i>
Prerequisites: 100 and 172. This course provides skills, knowledge and experiences essential to teaching effective and creative theatre arts in elementary school through current theories, methods and materials.		
473	METHODS -TCHG SEC THEATRE ARTS	<i>3 credits</i>
Prerequisite: 100 and 172. This course presents skills, knowledge and experiences essential to teaching innovative and creative theatre arts in the secondary school through current theories, methods and materials.		
475	ACTING FOR THE MUSICAL THEATRE	<i>3 credits</i>
Prerequisites: 172 or permission of instructor. A scene study course in analyzing and performing roles in American musicals. Accompanist provided.		
480	INDP STUDY: THEATRE	<i>1-3 credits</i>
Practice, study, and/or research in selected elements of theatre arts and production including preparation and presentation of creative and technological projects..		
490	W: THEATRE ARTS	<i>1-3 credits</i>
(May be repeated for a total of 6 credits) Prerequisite: advanced standing or permission. Group study or group projects investigating particular phases of theatre arts not covered by other courses in curriculum.		
495	HONORS RESEARCH PROJ: THEATRE	<i>1-3 credits</i>
Prerequisites: Approval of department preceptor. Creative project or research supervised by theatre preceptor.		
555	CREATING PERFORMANCE	<i>3 credits</i>
(May be repeated for a total of six credits.) This course introduces devising processes, improvisation, ensemble work, and physical theatre techniques appropriate to the preparation of practical performance projects from sources other than a conventional play.		
567	CONTEMPORARY THEATRE STYLES	<i>3 credits</i>
A detailed examination of representative plays of the contemporary theater.		
572	METHD OF TCH ELEM THEATRE ARTS	<i>3 credits</i>
Prerequisites: graduate status. Course provides skills, knowledge and experiences essential to teaching effective and creative theatre arts in elementary school through current theories, methods and materials.		

573	METHODS -CHG SEC THEATRE ARTS	<i>3 credits</i>
Prerequisite: graduate status. This course presents skills, knowledge and experiences essential to teaching innovative and creative theatre arts in the secondary school through current theories, methods and materials.		
575	ACTING FOR THE MUSICAL THEATRE	<i>3 credits</i>
Prerequisite: permission. A scene study course in analyzing and performing roles in American musicals. Accompanist provided.		
590	W: THEATRE ARTS	<i>1-3 credits</i>
(May be repeated for a total of 6 credits) Prerequisite: advanced standing or permission. Group study or group projects investigating particular phases of theatre arts not covered by other courses in curriculum.		
600	RESEARCH & WRITING TECHNIQUES	<i>3 credits</i>
Exploration of the basic research tools and methods appropriate to the discipline, including utilization of the computer. Guidelines for writing thesis.		
603	ST: THEATRE ARTS & DANCE	<i>1-4 credits</i>
(May be repeated as different subject areas are covered, but no more than 12 credits may be applied toward M. A. degree) Traditional and experimental courses in theater, supplementing those listed in the General Bulletin.		
641	PROBLEMS IN DIRECTING	<i>3 credits</i>
Advanced directing course with special emphasis on staging of complex plays from all periods of dramatic literature.		
645	SEM: DRAMATIC LITERATURE	<i>3 credits</i>
Representative Western stage play (non-American) are examined in theatrical, historical, and critical/theoretical contexts.		
646	GRADUATE ACTING: TECHNIQUES	<i>3 credits</i>
Advanced study of basic acting techniques, especially Stanislavski, through analysis and performance. Voice/Movement Lab required.		
648	GRADUATE ACTING: PROBLEMS	<i>3 credits</i>
Study of problems confronting the advanced actor in various modern styles of performance Voice/Movement Lab required.		
658	HISTORY OF THEATRE	<i>3 credits</i>
Theater history from the Greeks to the present with emphasis on physical theater, conventions, and theater architecture of each period.		
659	STAGE LIGHTING DESIGN & TECH	<i>3 credits</i>
Study of the art and technique of stage lighting design, including drafting of lighting plots, function of lighting instruments and of intensity control.		
660	ADVANCED TECHNICAL THEATRE	<i>3 credits</i>
Processes including multiple set productions, revolves and their rigging, techniques in simple hydraulics, pneumatics and load capacities, and properties and techniques in multi-media.		
662	SEM: SCENE DESIGN	<i>3 credits</i>
Prerequisite: 106 or undergraduate scene design course or permission of instructor. Study of problems in scene design: portfolio projects, research of noted designers, studies of theater spaces, and new scenographic materials.		
690	GRAD RES: READINGS	<i>1-3 credits</i>
(May be repeated for a total of nine credits) Prerequisite: permission. Individual research or independent readings under supervision of member of theater graduate faculty.		
698	INTERN: THEATER	<i>3-6 credits</i>
Prerequisite: permission. Faculty supervised work experience in which student participates in an arts management, performance or technical situation with a selected cultural organization.		
699	MASTERS THESIS	<i>1-6 credits</i>
Prerequisite: permission of graduate coordinator of theater arts program. Research related to the completion of the master's thesis.		



Theatre Organizations (7810)

100	PROD LAB-DESIGN/TECHNOLOGY	<i>1 credits</i>
Prerequisite: permission of instructor. (May be repeated for a total of 12 credits) Provides student with practical experience in technical aspects of theatre. *Required of all theatre majors. Majors are required to enroll in at least one credit production lab every semester they are in residence.		
110	PERFORMANCE LAB	<i>1 credits</i>
(May be repeated for a total of 12 credits) Prerequisites: permission of instructor. Provides student with practical performance experience theatre productions. *Required of all theatre majors.		
200	PROD LAB-DESIGN/TECHNOLOGY	<i>1 credits</i>
Prerequisite: permission of instructor. (May be repeated for a total of 12 credits) Provides student with practical experience in technical aspects of theatre. *Required of all theatre majors. Majors are required to enroll in at least one credit production lab every semester they are in residence.		
210	PERFORMANCE LABORATORY	<i>1 credits</i>
(May be repeated for a total of 12 credits) Prerequisites: permission of instructor. Provides student with practical performance experience in theatre productions. *Required of all theatre majors.		
300	PROD LAB-DESIGN/TECHNOLOGY	<i>1 credits</i>
Prerequisite: permission of instructor. (May be repeated for a total of 12 credits) Provides student with practical experience in technical aspects of theatre. *Required of all theatre majors. Majors are required to enroll in at least one credit production lab every semester they are in residence.		
310	PERFORMANCE LABORATORY	<i>1 credits</i>
(May be repeated for a total of 12 credits) Prerequisites: permission of instructor. Provides student with practical performance experience in theatre productions. *Required of all theatre majors.		
400	PROD LAB-DESIGN/TECHNOLOGY	<i>1 credits</i>
Prerequisite: permission of instructor. (May be repeated for a total of 12 credits) Provides student with practical experience in technical aspects of theatre. *Required of all theatre majors. Majors are required to enroll in at least one credit production lab every semester they are in residence.		
410	PERFORMANCE LABORATORY	<i>1 credits</i>
(May be repeated for a total of 12 credits) Prerequisite: permission of instructor. Provides student with practical performance experience in theatre productions. *Required of all theatre majors.		
601	PROD PRAC: DESIGN/TECHNOLOGY	<i>1-2 credits</i>
(May be repeated for a total of four credits) Prerequisite: permission of instructor. Practice in selected production design/technology operations, applications and techniques as they apply to production projects and major departmental productions.		
605	PERFORMANCE PRACTICUM	<i>1-2 credits</i>
(May be repeated for a total of 12 credits) Prerequisite: permission of project advisor. Recognition of work undertaken by the student when performing a role in a theater production. Credit assigned and work supervised by faculty project supervisor.		



Arts Administration(7850)

600	RESEARCH & WRITING TECHNIQUES	<i>3 credits</i>
Exploration of the basic research tools and methods appropriate to the discipline, including utilization of the computer. Guidelines for writing thesis.		
603	ST: ARTS ADMINISTRATION	<i>1-4 credits</i>
(May be repeated as different subject areas are covered, but no more than 12 credits may be applied toward M. A. degree) Traditional and experimental courses in arts administration, supplementing those listed in the General Bulletin.		
605	COLLOQUIUM ON THE ARTS	<i>3 credits</i>
A brief exploration of the major visual and performing art forms and organizations examined in relationship to the business management of arts. Team-taught.		
665	AUDIENCE DEVELOPMENT	<i>3 credits</i>
Developing audiences for the Arts through Arts marketing techniques, including season and single ticket campaigns, promotional strategies, media/public relations, market research, and telemarketing.		
666	PRINC OF ARTS ADMINISTRATION	<i>3 credits</i>
Principles and practices in non-profit arts management, including organizational structure, function of boards, personnel and volunteer management, and public policy for the arts.		
682	FUNDRSNG & GRANTSMANSHIP- ARTS	<i>3 credits</i>
Techniques and execution of a development campaign for individuals, corporations, foundations, federal and state grants, and endowment, including research and proposal writing.		
691	ARTS ADMIN PRACTICES&POLICIES	<i>3 credits</i>
Financial management of the arts, facilities management, presenting performances, touring, and unique management problems in non-profit theatre companies, dance companies, orchestras, and museums.		
692	LEGAL ASPECTS OF ARTS ADMINTRS	<i>3 credits</i>
Legal responsibilities and liabilities of an arts organization, contracts, copyright law, insurance, taxation, artists's rights, personnel law, and labor law.		
698	INTERNSHIP	<i>3-6 credits</i>
Prerequisite: permission. Faculty supervised work experience in which student participates in an arts management, performance or technical situation with a selected cultural organization.		
699	MASTER'S THESIS	<i>1-6 credits</i>
Prerequisite: permission of graduate coordinator of arts administration program. Research related to the completion of the master's thesis.		



Dance (7900)

103	ORIENTATION FOR DANCE	<i>0 credits</i>
Orientation to the dance program and field. Must be taken by all dance majors in their first semester of study. Dance Orientation is a degree requirement and is offered on a credit/noncredit basis.		
115	DANCE AS AN ART FORM	<i>2 credits</i>
Survey of dance for novice observer: aesthetics, philosophies, methods of training. Lecture and discussion of readings, viewing of film, videotape and live performances.		
119	MODERN I	<i>2 credits</i>
(May be repeated for a total of four credits) Exploring the basic principles of modern dance with an emphasis on body alignment and muscular awareness.		
120	MODERN II	<i>2 credits</i>
Prerequisite: permission or grade of B or better for one semester in 7900:119. (May be repeated for a total of four credits) Continuation of 119. Increasing movement vocabulary, muscular strength and coordination of modern dance.		
124	BALLET I	<i>2 credits</i>
(May be repeated for a total of four credits) Emphasis on body placement, muscular awareness.		
125	BALLET II	<i>2 credits</i>
Prerequisite: permission or grade of B or better for one semester of 7900:124. (May be repeated for a total of four credits) Continuation of 124. Basic exercises of classical ballet.		
130	JAZZ DANCE I	<i>2 credits</i>
(May be repeated for a total of four credits.) Basic jazz dance technique and jazz dance origins.		
144	TAP DANCE I	<i>2 credits</i>
(May be repeated for a total of four credits.) Basic tap dance technique and terminology.		
145	TAP DANCE II	<i>2 credits</i>
(May be repeated for a total of four credits.) Prerequisite: permission or a grade of B or better for one semester in 7900:144 Tap I. Refinement of tap technique and stylistic range of tap dance.		
150	BALLROOM DANCE I	<i>1 credits</i>
(May be repeated for a total of four credits.) Introduction to the basic patterns and techniques of major ballroom dances.		
200	VIEWING DANCE	<i>3 credits</i>
Prerequisite: 3400:210 or 3400:221. To explore dance as an art form through experiential activities, dance literature, film and live performance for non-dance majors.		
219	MODERN III	<i>2 credits</i>
(May be repeated for a total of 4 credits.) Prerequisite: permission or a grade of B or better for one semester in 7900:120 Modern II. Continuation of 120. Introduction to current modern dance styles and technique.		
220	MODERN IV	<i>2 credits</i>
(May be repeated for a total of 4 credits.) Prerequisite: permission or a grade of B or better for one semester in 7900:219 Modern III. Continuation of 219. Application of basic modern dance theory of current modern dance styles and techniques.		
224	BALLET III	<i>3 credits</i>
(May be repeated for a total of 6 credits.) Prerequisite: permission or a grade of B or better for one semester in 7900:125 Ballet II. Continuation of 125. Emphasis on barre and developing strength.		
225	BALLET IV	<i>3 credits</i>
Prerequisite: Permission or grade of B or better for one semester in 7900:224. Continuation of 224. Emphasis on the increase of strength and flexibility. (May be repeated for a total of twelve credits)		
230	JAZZ DANCE II	<i>2 credits</i>
(May be repeated for a total of 4 credits.) Prerequisite: permission or a grade of B or better in 7900:130 Jazz I. Continuation of basic jazz technique and stylistic range of jazz dance.		
403	ST: DANCE	<i>1-4 credits</i>
(May be repeated as different subject areas are covered, but no more than 10 credits may be applied toward B.A. degree) Traditional and non-traditional topics in dance, supplementing courses listed in General Bulletin.		



Dance Organizations (7910)

101	CLASSICAL BALLET ENSEMBLE	<i>1 credits</i>
By audition only. Participation in rehearsal and preparation for public performance of classical ballet repertoire. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.		
102	CHARACTER BALLET ENSEMBLE	<i>1 credits</i>
By audition only. Participation in rehearsal and preparation for public performance of character ballet repertoire. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.		
103	CONTEMPORARY DANCE ENSEMBLE	<i>1 credits</i>
By audition only. Participation in rehearsal and preparation for public performance of contemporary dance repertoire. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.		
104	JAZZ DANCE ENSEMBLE	<i>1 credits</i>
By audition only. Participation in rehearsal and preparation for public performance of jazz dance repertoire. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.		
105	MUSICAL COMEDY ENSEMBLE	<i>1 credits</i>
By audition only. Participation in rehearsal and preparation for public performance of dance production numbers in a musical comedy. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.		
106	OPERA DANCE ENSEMBLE	<i>1 credits</i>
By audition only. Participation in rehearsal and preparation for public performance of dance sequences in an opera. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.		
107	EXPERIMENTAL DANCE ENSEMBLE	<i>1 credits</i>
By audition only. Participation in rehearsal and preparation for public performance of avant-garde dances. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.		
108	CHOREOGRAPHERS WORKSHOP	<i>1 credits</i>
By audition only. Participation in rehearsal and preparation for public performance of student dances. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.		
109	ETHNIC DANCE ENSEMBLE	<i>1 credits</i>
By audition only. Participation in rehearsal and preparation for public performance of ethnic dance repertoire. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.		
110	PERIOD DANCE ENSEMBLE	<i>1 credits</i>
By audition only. Participation in rehearsal and preparation for public performance of dances from specific historical periods such as the Renaissance or Baroque eras. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.		
111	TOURING ENSEMBLE	<i>1 credits</i>
By audition only. Participation in rehearsal and preparation for public performance of any dances prepared for touring purposes. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.		
112	DANCE PRODUCTION ENSEMBLE	<i>1 credits</i>
By permission only. Participation in technical assistance, preparation and performance of student dance productions: theory and laboratory. **Course may be repeated for credit. Total credit for graduation may not exceed 12 credits. All courses are by audition only.		
113	DANCE ORGANIZATIONS: WORKSHOP	<i>1 credits</i>
By permission only. Participation in a dance workshop as volunteer, participant and/or presenter that forwards and augments the student's dance education and networking skills.		
200	BFA AUDITION	<i>0 credits</i>
Prerequisite: 7910:201 or permission. Passing the BFA Audition is a requisite for becoming a BFA dance major. It is also a degree requirement. It may not be taken more than twice. Offered on a credit/noncredit basis.		
201	FRESHMAN JURY & INTERVIEW	<i>0 credits</i>
The passing of the Freshman Jury and interview is a requisite for becoming a BA dance major. It is also a degree requirement. Students may take the Freshman Jury and Interview the following semester if failed the first time. It may not be taken more than twice. Offered on a credit/non credit basis.		



Dance Somatics (7915)

101	DANCE SOMATICS: YOGA	<i>1 credits</i>
Prerequisite: 7900:120 or 125, or 219 or 220 or 224 or 225 or 7920:122 or 222 or 228 or 229 or 322 or 328 or 329 or 422. Exploration of alternative movement disciplines aimed at increasing body-mind awareness and dancer health. Must be taken by dance majors in first two years of study.		
102	DANCE SOMATICS: PILATES	<i>1 credits</i>
Prerequisite: 7900:120 or 125, or 219 or 220 or 224 or 225 or 7920:122 or 222 or 228 or 229 or 322 or 328 or 329 or 422. Exploration of alternative movement disciplines aimed at increasing body-mind awareness and dancer health. Must be taken by dance majors in first two years of study.		
103	DANCE SOMATICS: ALEXANDER TECH	<i>1 credits</i>
Prerequisite: 7900:120 or 125, or 219 or 220 or 224 or 225 or 7920:122 or 222 or 228 or 229 or 322 or 328 or 329 or 422. Exploration of alternative movement disciplines aimed at increasing body-mind awareness and dancer health. Must be taken by dance majors in first two years of study.		
104	DANCE SOMATICS: GYROKINESIS	<i>1 credits</i>
Prerequisite: 7900:120 or 125, or 219 or 220 or 224 or 225 or 7920:122 or 222 or 228 or 229 or 322 or 328 or 329 or 422. Exploration of alternative movement disciplines aimed at increasing body-mind awareness and dancer health. Must be taken by dance majors in first two years of study.		
111	T: WORLD DANCE	<i>1 credits</i>
May be repeated for a total of six credits. Prerequisite: 7900:120 or 7900:125, or higher levels of ballet or modern dance technique. Exploration of various dance genres from world and historical traditions.		
403	ST: DANCE SOMATIC	<i>1-3 credits</i>
(Repeatable with a change in topic for a total of six credits) Prerequisite: 7900:120 or 7900:125, or higher levels of ballet or modern dance technique. Projects or classes in Somatic Dance not covered by present course offerings.		



Dance Performance (7920)

116	PHYSICAL ANALYSIS FOR DANCE I	<i>2 credits</i>
Prerequisites: 3100:200, 201; 7400:133. Required for all dance majors. Recommended to be taken in the first two years. Lecture/laboratory. Skeletal and muscular analysis for dance technique.		
117	PHYSICAL ANALYSIS FOR DANCE II	<i>2 credits</i>
Prerequisite: 116. Support systems, conditioning injury prevention, rehabilitation, nutrition for dancers.		
122	BALLET V	<i>4 credits</i>
(May be repeated for a total of 16 credits) Prerequisite: permission or a grade of B+ or better for one semester in 7900:225. Theory, vocabulary, structure, placement. Concurrent enrollment in pointe class recommended.		
141	POINTE I	<i>2 credits</i>
(May be repeated for a total of eight credits) Prerequisite: permission or 122 or above. Corequisite: 122 or above. Reinforcement of selection principles for pointe shoes, proper holding of foot muscularly and control of heel while ascending and descending from pointe.		
222	BALLET VI	<i>4 credits</i>
(May be repeated for a total of 16 credits) Prerequisite: permission or a grade of B+ or better for one semester in 7920:122. Continuation of 122, expanding theory on vocabulary, structure, placement. Concurrent enrollment in pointe class recommended.		
228	MODERN V	<i>3 credits</i>
(May be repeated for a total of 6 credits.) Prerequisite: Permission or a grade of B or better for one semester in 7900:220 Modern IV. The intermediate study of modern dance styles and technique through the application of more complex movement theories, rhythmic patterns, and improvisational studies.		
229	MODERN VI	<i>3 credits</i>
(May be repeated for a total of 6 credits.) Prerequisite: permission or a grade of B or better for one semester in 7920:228 Modern V. Introduction to intermediate theory of current modern dance styles and techniques.		
241	POINTE II	<i>2 credits</i>
(May be repeated for a total of 12 credits) Prerequisite: permission or a grade of B or better for one semester in 7920:141. Corequisite: 7920:222 or above. Continuation of 141. Continued development of strength, coordination and endurance of holding foot muscularly. Further development and emphasis on principles of weight transfer.		
246	TAP DANCE III	<i>2 credits</i>
(May be repeated for a total of 4 credits.) Prerequisite: permission or a grade of B or better for one semester in 7900:145 Tap II. Advancement of tap dance technique through the use of complex combinations, syncopation, routines, and styles.		
274	DIGITAL TECHNOLOGY FOR DANCE	<i>3 credits</i>
Hands-on exploration of theories and methods used in electronic development of promotional and creative materials. Activities include still and motion image capture, editing, and distribution.		
316	CHOREOGRAPHY I	<i>2 credits</i>
Prerequisite: Permission or 7900:220 Modern IV or above. Theoretical and practical introduction to principles of choreography: space, time, energy.		
317	CHOREOGRAPHY II	<i>2 credits</i>
Prerequisite: 316 or permission. Continuation of 316. Emphasis on musical choices and finding movement specific to the individual choreographer.		
320	MOVEMENT FUNDAMENTALS	<i>2 credits</i>
Beginning study of Labanotation method of recording movement, and Laban's theories of effort, space, and shape.		
321	RHYTHMIC ANALYSIS - DANCE	<i>2 credits</i>
Prerequisites: 32 credits and 7900:120 or 7900:125, or higher levels of ballet or modern dance technique, or permission. Lecture and application of basic rhythmic structures used in dance and dance instruction.		
322	BALLET VII	<i>4 credits</i>
(May be repeated for a total of 24 credits.) Prerequisite: permission or a grade of B+ or better for one semester in 7920:222 Ballet VI. Continuation of 222. Emphasis on technique, style, line. Concurrent enrollment in pointe class is recommended.		
328	MODERN VII	<i>3 credits</i>
(May be repeated for a total of 12 credits.) Prerequisite: permission or a grade of B or better in 7920:229 Modern VI. Refinement and stylization of modern techniques for performance of modern dance.		
329	MODERN VIII	<i>3 credits</i>

(May be repeated for a total of 12 credits.) Prerequisite: permission or a grade of B or better in 7920:328 Modern VII. Application of advanced modern dance techniques and styles.

333	PARTNERING	<i>2 credits</i>
Prerequisite: 7920:122 or 222 or 322 or 422 and 7920:228 or 299 or 328 or 329 or permission. An exploration of the fundamentals of dance partnering: weight sharing, centering, safety via contact improvisation.		
334	PAS DE DEUX I	<i>2 credits</i>
(May be repeated for a total of eight credits) Prerequisites: permission; concurrent enrollment in a pointe class recommended. Provides student with the beginning understanding and practice of pas de deux.		
347	TAP DANCE IV	<i>2 credits</i>
(May be repeated for a total of 8 credits.) Prerequisite: Permission or a grade of B or better for one semester in 7920:246 Tap III. Advanced tap combinations, styles, routines.		
351	JAZZ DANCE III	<i>2 credits</i>
(May be repeated for a total of 4 credits.) Prerequisite: permission or a grade of B or better for one semester in 7900:230 Jazz II. Intermediate jazz dance technique and the jazz eras.		
361	LEARNING THEORY FOR DANCE	<i>2 credits</i>
Prerequisites: 7900:115, 224 (or higher levels of ballet technique); 3750:100 or 5100:220; or permission of instructor. Theories of learning and their use in teaching dance.		
362	INST STRATEGIES FOR DANCE	<i>2 credits</i>
Prerequisite: 361. Practical work and development of teaching skills in dance for public and private settings.		
403	ST: DANCE	<i>1-4 credits</i>
(May be repeated. No more than 10 credits may be applied toward the B.F.A. or B.A.) Prerequisite: Permission. Traditional and nontraditional topics in dance.		
416	CHOREOGRAPHY III	<i>2 credits</i>
Prerequisite: 317 or permission. Continuation of 317. Emphasis on form and choreographic analysis.		
417	CHOREOGRAPHY IV	<i>2 credits</i>
Prerequisite: 416 or permission. Continuation of 416. Expanding into group choreography and longer works.		
422	BALLET VIII	<i>4 credits</i>
(May be repeated for a total of 32 credits.) Prerequisite: permission or a grade of B+ or better for one semester in 7920:322 Ballet VII. Continuation of 322. Advanced level of technique. Concurrent enrollment in pointe class recommended.		
432	HISTORY OF BALLET	<i>2 credits</i>
Prerequisite: 7900:115 or 7900:200 or permission. Development of ballet beginning with its origins in French Courts through the Romantic and Diaghilev Eras to current times.		
433	DANCE HISTORY: 20TH CENTURY	<i>2 credits</i>
Prerequisite: 7900:115 or 7900:200 or permission. Development of modern dance as an art form and the further evolution of ballet and concert dance.		
445	DANCE PHILOSOPHY & CRITICISM	<i>3 credits</i>
Prerequisites: 3400:210 or 221, 3600:101, 7900:115 and 7920:432 or 433. Review of historical dance philosophies, performance, attributes, choreographic and theatrical elements of dance and criticism.		
451	JAZZ DANCE IV	<i>2 credits</i>
(May be repeated for a total of eight credits.) Prerequisite: permission or a grade of B or better for one semester in 7920:351 Jazz III. Advanced jazz dance technique and styles for the professional dancer.		
461	SEM & FLD EXP: DANCE EDUC	<i>2 credits</i>
Prerequisite: 362. Supervised observation and teaching experience in dance education in the field. Concurrent enrollment in 7910:108 Choreographers' Workshop.		
462	PROFSSNL ISSUES IN DANCE EDUC	<i>2 credits</i>
Prerequisite: 461. An examination of current issues and goals in dance education. Concurrent enrollment in 7910:108 Choreographers' Workshop.		
471	SENIOR SEMINAR	<i>1 credits</i>
Prerequisite: 274; senior standing or permission. A forum to develop professional skills to make the transition to a dance career: artistic, academic, or business.		
490	W: DANCE	<i>1-3 credits</i>
(May be repeated for a total of eight credits) Prerequisite: Permission. Group study/projects investigating a particular field of dance not covered by other courses.		
497	INDP STUDY: DANCE	<i>1-3 credits</i>
(May be repeated for a total of four credits) Prerequisite: Permission and prearrangement with instructor. Individual creative project, research or readings in dance with faculty advisor.		
498	HONORS RESEARCH PROJECT: DANCE	<i>1-3 credits</i>
Prerequisite: Approval of department preceptor. Creative project or research supervised by dance preceptor.		
590	W: DANCE	<i>1-3 credits</i>
(May be repeated for a total of eight credits) Prerequisite: Permission. Group study/projects investigating a particular field of dance not covered by other courses.		



The University of Akron
Undergraduate Bulletin

College of Engineering

- [General Engineering \(4100\)](#)
- [Chemical Engineering \(4200\)](#)
- [Corrosion Engineering \(4250\)](#)
- [Civil Engineering \(4300\)](#)
- [Electrical Engineering \(4400\)](#)
- [Computer Engineering \(4450\)](#)
- [Mechanical Engineering \(4600\)](#)
- [Mechanical Polymer Engineering \(4700\)](#)
- [Biomedical Engineering \(4800\)](#)
- [Aerospace Systems Engineering \(4900\)](#)



General Engineering (4100)

101	TOOLS FOR ENGINEERING	<i>3 credits</i>
Corequisite: 3450:221. Introduction to engineering. Free hand, engineering, and CAD drawing. Introduction to computer programming, computer applications including word processing, spreadsheets, data base. Introduction to engineering economics. Required for Chemical, Civil, and Electrical Engineering majors.		
110	WOMEN IN ENGR SEM & PEER GROUP	<i>1 credits</i>
Beginning women students may elect this one-credit course that provides an overview of the career opportunities for women in engineering. The course utilizes dynamic speakers to reinforce the student's educational and career choices. Small groups meet weekly, led by an upper-class engineering student. This interactive peer environment fosters personal development for first-year students.		
120	MINORITY ENGR SEM & PEER GROUP	<i>1 credits</i>
Provides overview of disciplines/opportunities in engineering through dynamic speakers, tours, and group discussions. Reinforces educational/career choices and provides role models of successful minority engineers.		
180	ENGINEERING DESIGN	<i>1 credits</i>
See department for course description.		
200	FRESHMAN INTERNSHIP	<i>0 credits</i>
Elective for cooperative education student who has completed freshman year. Mandatory for students in the Aerospace Systems Engineering Program, with possibility of waiver if transferring into Program after first year or if student needed to begin mathematics sequence with Precalculus Mathematics in freshman year. Practice in industry and comprehensive written reports of this experience.		
201	ENERGY & ENVIRONMENT	<i>2 credits</i>
Interactions between energy production, consumption and environment. Case studies. Not for engineering, chemistry or physics major.		
202	ATMOSPHERIC POLLUTION	<i>2 credits</i>
Causes of atmospheric pollution and technical economic and social problems. Technical solutions. Case studies. Not for engineering, chemistry or physics majors.		
203	ENVIRONMENTL SCI & ENGINEERING	<i>3 credits</i>
Science and engineering fundamentals required to understand environmental issues and alternative solutions. Not for engineering, chemistry, or physics majors.		
300	COOPERATIVE EDUCATION WORK PER	<i>0 credits</i>
Elective for cooperative education student who has completed sophomore year. Practice in industry and comprehensive written reports of this experience.		
301	COOPERATIVE EDUCATION WORK PER	<i>0 credits</i>
Required for cooperative education student only. Practice in industry and comprehensive written reports of this experience. Offered spring semester of third year.		
302	COOPERATIVE EDUCATION WORK PER	<i>0 credits</i>
Required for cooperative education student only. Practice in industry and comprehensive written reports of this experience. Offered fall semester of fourth year.		
400	ENGINEERING MGMT & LEADERSHIP	<i>3 credits</i>
This is a case and discussion oriented course that examines the role of the engineering manager as a leader, problem solver, strategic planner, and a well rounded business minded individual.		
403	COOPERATIVE EDUCATION WORK PER	<i>0 credits</i>
Required for cooperative education student only. Practice in industry and comprehensive written reports of this experience. Offered summer after fourth year.		
600	CURRICULAR PRACTICAL TRAINING	<i>3-9 credits</i>
Prerequisite: Student must have completed at least one academic year in the program. Exposure to engineering research practice in industry or federal labs. Credits equivalent to preliminary research, master research, or master project. Engineering dean approval.		
697	ENGINEERING MANAGEMENT REPORT	<i>2 credits</i>
Prerequisite: permission of advisor. A relevant problem in engineering management is studied in depth. Final report must be approved by advisor and advisory committee.		



Chemical Engineering (4200)

101	TOOLS FOR CHEMICAL ENGINEERING	<i>2 credits</i>
Corequisites: 110 and 3450:149. Introduction to Chemical Engineering. Basic concepts of engineering practice. Introduction to professional level software including process simulation, control design, spreadsheets, mathematical computation, and process flow graphics.		
110	PROJECT MGMT & TEAMWORK I	<i>1 credits</i>
Teams freshmen through senior Chemical Engineering undergraduates on a design team working on a realistic chemical engineering problem. Develops teamwork, communications, presentation, project management and information technology skills.		
121	CHEMICAL ENGINEERING COMPUTA	<i>2 credits</i>
Prerequisites: 101 or permission. Computer programming language, flowcharting, introductory simulation and introductory numerical analysis.		
194	CHEMICAL ENGINEERING DESIGN I	<i>1 credits</i>
Prerequisites: 4200:101 and permission. Individual or group project under faculty supervision. Introduction to chemical engineering processes and modern design technology. Written report is required.		
200	MATERIAL & ENERGY BALANCES	<i>4 credits</i>
Prerequisites: 121, 3450:221 and 3150:151. Introduction to material, energy balance calculations applied to solution of chemical problems.		
210	PROJECT MGMT & TEAMWORK II	<i>1 credits</i>
Prerequisite: 110. Teams freshmen through senior Chemical Engineering undergraduates on a design team working on a realistic chemical engineering problem. Develops teamwork, communications, presentation, project management and information technology skills.		
225	EQUILIBRIUM THERMODYNAMICS	<i>4 credits</i>
Prerequisites: 200 and 3450:223. Second law of thermodynamics, entropy, applications, comprehensive treatment of pure and mixed fluids. Phase and chemical equilibria, flow processes, power production and refrigeration processes covered.		
294	CHEMICAL ENGINEERING DESIGN II	<i>1-2 credits</i>
Prerequisites: 121, 200 and permission. Supervised individual or group design project. Analysis of multi-unit process using simulation and/or experimental techniques. Written report and oral presentation required.		
305	MATERIALS SCIENCE	<i>2 credits</i>
Prerequisites: 3150:153 and 3650:292 and junior standing. Structure, processing and properties of metals, ceramics and polymers. Special topics, such as composites, corrosion and wear.		
310	PROJECT MGMT & TEAMWORK III	<i>1 credits</i>
Prerequisite: 210. Teams freshmen through senior Chemical Engineering undergraduates on a design team working on a realistic chemical engineering problem. Develops teamwork, communications, presentation, project management and information technology skills.		
321	TRANSPORT PHENOMENA	<i>3 credits</i>
Prerequisites: 200 and 3450:335. Constitutive equations for momentum, energy and mass transfer. Development of microscopic and macroscopic momentum, energy and mass transfer equations for binary systems. Analogy and dimensionless analysis. Problems and applications in unit operations of chemical engineering.		
330	CHEMICAL REACTION ENGINEERING	<i>3 credits</i>
Prerequisite: 225 and 3450:335. Nonequilibrium processes including chemical reaction mechanisms, rate equations and ideal reactor design applied to homogeneous and heterogeneous systems.		
341	PROCESS ECONOMICS	<i>2 credits</i>
Prerequisite: 200. Theory and application of engineering economy to multi-unit processes. Cost estimation, time value of money, profit analysis, decision making and introduction to project management.		
351	FLUID & THERMAL OPERATIONS	<i>3 credits</i>
Prerequisite: 321. Applications of fluid mechanics including piping, pumping, compression, metering, agitation and separations. Applications of heat transfer by conduction, convection and radiation to design of process equipment.		
353	MASS TRANSFER OPERATIONS	<i>3 credits</i>
Prerequisites: 225 and C- or above in 200. Theory and design of staged operations including distillation, extraction, absorption. Theory and design of continuous mass transfer devices.		
360	CHEMICAL ENGINEERING LAB	<i>3 credits</i>
Prerequisites: 353; corequisites: 330, 351. Comprehensive experiments in combined heat and mass transfer, thermodynamics, and reaction kinetics. Data collection and analysis. Comprehensive reports in various formats.		

394	CHEMICAL ENGINEERING DSGN III	<i>1-3 credits</i>
Prerequisites: 351 and permission. Supervised individual or group design project. Develop, evaluate and design feasible solutions to an open-ended problem pertinent to chemical engineering. Written report and oral presentation required.		
408	POLYMER ENGINEERING	<i>3 credits</i>
Prerequisite: permission or senior standing. Commercial polymerization, materials selection and property modification, polymer processing, applied rheology and classification of polymer industry.		
410	PROJECT MGMT & TEAMWORK IV	<i>1 credits</i>
Prerequisite: 310. Teams freshmen through senior Chemical Engineering undergraduates on a design team working on a realistic chemical engineering problem. Develops teamwork, communications, presentation, project management and information technology skills.		
421	FUND OF MULTIPHSE TRNSPT PHENO	<i>3 credits</i>
Prerequisite: 4200:321 or equivalent, and instructor permission. Major topics to be covered: Intrapphase and interphase transport phenomena, Transport phenomena in multiphase fluids, Transport in Porous Media, Transport in Gas/liquid pipe flows, Computational Fluid Dynamics of multiphase systems, and Case studies.		
435	PROCESS ANALYSIS & CONTROL	<i>3 credits</i>
Prerequisites: 330, 353. Response of simple and chemical processes and design of appropriate control systems.		
438	ENERGY INTEGRATION	<i>3 credits</i>
Prerequisite: 351. This course uses Pinch Design formalism to present the core energy integration tools for energy and area targeting, and tools for integration of reactors, distillation columns, and heat pumps.		
441	PROCESS DESIGN I	<i>3 credits</i>
Prerequisites: 330, 351, 353 and 341. Application of chemical engineering fundamentals to the design of a multi-unit process. Emphasis on use of process simulators. Advanced equipment design, oral and written communication skills and teamwork.		
442	PROCESS DESIGN II	<i>3 credits</i>
Prerequisite: 441 or permission. Teaches methods of process conceptualization, preliminary optimization. Specific topics include: chemical process design methodology, design heuristics, energy integration, and process safety review.		
450	CHEMICAL PRODUCT DESIGN & DEVL	<i>3 credits</i>
Prerequisite: senior standing or permission. Introduction to the strategies and processes used to design and development new chemical products from the idea stage through manufacturing.		
461	SOLIDS PROCESSING	<i>3 credits</i>
Prerequisites: 321 and 353 or permission. Comprehensive problems in sedimentation, fluidization, drying and other operations involving mechanics of particulate solids in liquid and gas continua.		
462	INDUSTRIAL ENZYME TECHNOLOGY	<i>3 credits</i>
Prerequisites: 330 and 351. Application of chemical engineering to biological processes involving enzymes and their industrial applications. Special emphasis given to the kinetics, control, design, and process economics aspects.		
463	POLLUTION CONTROL	<i>3 credits</i>
Prerequisite: 353 or permission. Air and water pollution sources and problems. Engineering aspects and methodology.		
466	DIGITIZED DATA & SIMULATION	<i>3 credits</i>
Prerequisite: permission. Data acquisition and analysis by digital devices, digital control applications and design.		
470	ELECTROCHEMICAL ENGINEERING	<i>3 credits</i>
Prerequisites: 321, 330. Chemical engineering principles as applied to the study of electrode processes and to the design of electrochemical reactors. Topics include electrochemical thermodynamics, cell polarizations, Faraday's Laws, electrode kinetics, transport processes in electrochemical systems, current distributions, reactor design, experimental methods, commercial processes, and batteries and fuel cells.		
471	FUEL ENGINEERING	<i>3 credits</i>
Prerequisite: 330 or permission of instructor. Topics related to clean liquid and solid fuels technology. Special emphasis given to design, system analysis, environmental impacts, and novel technologies.		
472	SEPARATION PROCES-BIOCHEM ENGR	<i>3 credits</i>
Introduction to the separation and purification techniques pertinent to bioprocesses, with emphasis on engineering considerations for large scale operations.		
473	BIOREACTOR DESIGN	<i>3 credits</i>
Prerequisite: 330 or instructor's consent. Design, analysis, and scale-up of bioreactors for various biological processes.		
488	CHEMICAL PROCESSES DESIGN	<i>3 credits</i>
Prerequisite: Permission of instructor or senior standing. Process design and analysis of emerging chemical technologies. Case studies, such as in-situ processing, alternative fuels, bioremediation, and engineering materials manufacture.		
494	DESIGN PROJECT	<i>3 credits</i>
Prerequisite: Permission or senior standing. Individual design project pertinent to chemical engineering under faculty supervision. Written report and oral presentation required.		
496	T: CHEMICAL ENGINEERING	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisite: permission. Topics selected from new and developing areas of chemical engineering, such as electrochemical engineering, coal and synthetic fuels processing, bioengineering, simultaneous heat and mass transfer phenomena and new separation techniques.		

497	HONORS PROJECT	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisite: special permission. Individual creative project pertinent to chemical engineering culminating in undergraduate thesis, supervised by faculty member of the department.		
499	RES PROJ: CHEMICAL ENGINEERING	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisite: permission. Individual research project pertinent to chemical engineering under faculty supervision. Report required.		
521	FUND OF MULTIPHSE TRNSPT PHENO	<i>3 credits</i>
Prerequisite: 321 or equivalent and permission. Major topics to be covered include intraphase and interphase transport phenomena, transport phenomena in multiphase fluids, transport in porous media, transport in gas/liquid pipe flows, computational fluid dynamics of multiphase systems, and case studies.		
535	PROCESS ANALYSIS & CONTROL	<i>3 credits</i>
Prerequisites: 330, 353. This course is intended for a student holding a BS in a discipline other than engineering. Response of simple and chemical processes and design of appropriate control systems.		
541	PROCESS DESIGN I	<i>3 credits</i>
Prerequisites: 330, 351, 353. Application of chemical engineering fundamentals to the design of a multi-unit process. Emphasis on use of process simulators. Advanced equipment design, oral, written communication skills, teamwork.		
561	SOLIDS PROCESSING	<i>3 credits</i>
Prerequisites: 321 and 353 or permission. Comprehensive problems in sedimentation, fluidization, drying and other operations involving mechanics of particulate solids in liquid and gas continua.		
563	POLLUTION CONTROL	<i>3 credits</i>
Prerequisite: 353 or permission. Air and water pollution sources and problems. Engineering aspects and methodology.		
566	DIGITIZED DATA & SIMULATION	<i>3 credits</i>
Prerequisite: permission. Data acquisition and analysis by digital devices, digital control applications and design.		
570	ELECTROCHEMICAL ENGINEERING	<i>3 credits</i>
Chemical engineering principles as applied to the study of electrode processes and to the design of electrochemical reactors. Topics include electrochemical thermodynamics, cell polarizations, Faraday's Laws, electrode kinetics, transport processes in electrochemical systems, current distributions, reactor design, experimental methods, commercial processes, and batteries and fuel cells.		
572	SEPARATION PROCES-BIOCHEM ENGR	<i>3 credits</i>
Prerequisite: 353. Introduction to the separation and purification techniques pertinent to bioprocesses, with emphasis on the engineering considerations for large-scale operations.		
600	TRANSPORT PHENOMENA	<i>3 credits</i>
Prerequisite: 322 or permission. Systematic presentation of conservation of momentum, energy and mass at microscopic and macroscopic levels in conjunction with illustrative examples and analogies.		
605	CHEMICAL REACTION ENGINEERING	<i>3 credits</i>
Prerequisite: 330 or permission. Kinetics of homogeneous and heterogenous systems. Reactor design for ideal and non-ideal flow systems.		
610	CLASSICAL THERMODYNAMICS	<i>3 credits</i>
Prerequisite: 225. Discussion of laws of thermodynamics and their application. Predication and correlation of thermodynamic data. Phase and reaction equilibria.		
621	SURFACE SCIENCE IN CHEM ENGR	<i>3 credits</i>
Prerequisite: permission of instructor. This course emphasizes the basics of surface science (surface energy, wetting, adhesion); surface characterization techniques (contact angle, ellipsometry, XPS); and surface engineering methods (SAMs, soft-lithography).		
622	BIOCHEMICAL ENGINEERING	<i>3 credits</i>
Application of chemical engineering principles to biological processes which produce desirable compounds or destroy unwanted or hazardous substances.		
625	PHYSICL PROP OF STRUCT BIOPLYM	<i>3 credits</i>
Prerequisite: permission of instructor. Examination of the physical properties of biological tissues from a material science perspective leading to a rational design of biomaterials.		
630	CHEMICAL PROCESS DYNAMICS	<i>3 credits</i>
Prerequisite: 600. Development and solutions of mathematical models for chemical processes including models based on transport phenomena principles, population balance methods and systems analysis.		
631	CHEMICAL ENGINEERING ANALYSIS	<i>3 credits</i>
Prerequisites: 322, 225, 330. Mathematical analysis of problems in transport processes, chemical kinetics and control systems. Solution techniques for these problems and their practical significances are stressed. Heuristic proofs will be given for necessary theory developments.		
632	NONLINEAR DYNAMICS & CHAOS	<i>3 credits</i>
Prerequisite: 3450:235. Description and analysis of the complex behavior exhibited by nonlinear equations. Emphasis is on the numerical methods to quantify chaos.		
633	COLLOIDS-PRINCIPLES & PRACTICE	<i>3 credits</i>
Prerequisite: permission of instructor. Colloid science and applications in chemical and biomaterials engineering: disperse systems, interparticle forces, surface tension, interfacial thermodynamics, colloid applications, biomaterials applications and characterization techniques.		

634	APPLIED SURFACTANT SCIENCE	<i>3 credits</i>
Prerequisite: 610. The basics of surfactant science, the chemical engineering application of surfactants including use in polymerization media, separations, emulsion, microemulsion, and a rheology modifier.		
635	ADVANCED POLYMER ENGINEERING	<i>3 credits</i>
Prerequisite: 322 or 600 or permission. Reactors for polymerization, polymer characterization, polymer processing, polymer rheology.		
640	ADVANCED PLANT DESIGN	<i>3 credits</i>
Prerequisite: permission. Topical treatment of process and equipment design, scale-up, optimization, process syntheses, process economics. Case problems.		
674	RENEWBL RES/ENV BENG CHEM PROD	<i>3 credits</i>
Prerequisite: permission of instructor. Focus is on chemical and biochemical processing technologies for the preparation of fuels, polymeric materials, and specialty chemicals from renewable resources.		
680	HETEROGENOUS CATALYSIS	<i>3 credits</i>
Prerequisite: 330. Kinetics and mechanisms of heterogeneous and homogeneous catalytic reactions; characterization and design of heterogeneous catalysts.		
696	T: CHEMICAL ENGINEERING	<i>1-3 credits</i>
(May be repeated for a total of six credits.) Prerequisite: permission. Topics selected from new and developing areas of chemical engineering, such as electrochemical engineering, coal and synthetic fuels processing, bioengineering, simultaneous heat and mass transfer phenomena and new separation techniques.		
697	CHEMICAL ENGINEERING REPORT	<i>3 credits</i>
Prerequisite: permission of advisor. A relevant problem in chemical engineering is studied. Required course for students electing non-thesis option. Final report must be approved by advisor and advisory committee.		
699	MASTERS THESIS	<i>1-6 credits</i>
(May be repeated to a maximum of six credits.) For properly qualified candidate for master's degree. Supervised original research in specific area of chemical engineering selected on basis of availability of staff and facilities.		
701	ADVANCED TRANSPORT PHENOMENA	<i>3 credits</i>
Prerequisite: 600. Advanced theory of transport phenomena such as applied tensor analysis, constitutive equations, multicomponent reactive transport and multiphase transport. Illustrative practical examples presented.		
702	MULTIPHASE TRANSPORT PHENOMENA	<i>3 credits</i>
Prerequisite: 600. General transport theorem, kinematics, Cauchy's lemmas and the jump boundary conditions are developed followed by the theory 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	<i>3 credits</i>
Prerequisite: 605. Kinetics of heterogeneous systems, steady and unsteady state mathematical modeling of chemical reactors, fluidization and additional topics drawn from current literature.		
711	ADV CHEMICAL ENGR THERMODYNAMCS	<i>3 credits</i>
Prerequisite: 610. Advanced topics in thermodynamics, including phase and reaction equilibria at high pressures, phase equilibrium for multiphase systems, reaction equilibria in multiphase systems, thermodynamics of surfaces, thermodynamics of systems under stress, non-equilibrium thermodynamics and current topics from literature.		
715	MOMENTUM TRANSPORT	<i>3 credits</i>
Prerequisite: 600. Discussion of potential flow, boundary layer formation and turbulent flow phenomena for Newtonian fluids.		
716	NON-NEWTONIAN FLUID MECHANICS	<i>3 credits</i>
Prerequisite: 600. Tensor and curvilinear coordinates. Newtonian viscometrics. Development of non-Newtonian constitutive equations. Special and general flows of various constitutive models.		
720	ENERGY TRANSPORT	<i>3 credits</i>
Prerequisite: 600. Conduction, natural and forced convection, and radiation heat transfer starting with equations of continuity, motion and energy.		
721	TOPICS IN ENERGY TRANSPORT	<i>3 credits</i>
Prerequisite: 720. Advanced analytical and graphical methods for solving complex heat transfer problems found in chemical engineering.		
725	MASS TRANSFER	<i>3 credits</i>
Prerequisite: 600. Theory of mass transfer with applications to absorption, adsorption, distillation and heterogeneous catalysis.		
731	PROCESS CONTROL	<i>3 credits</i>
Prerequisite: 630. Introduction to modern control theory of chemical processes including cascade control, multivariate control and data sampled control.		
736	POLYMER ENGINEERING TOPICS	<i>3 credits</i>
Prerequisite: permission. Selected topics of current interest in polymer engineering, such as modeling of reactors or processes, multiphase materials, multiphase flow, artificial fiber engineering, etc.		
738	CHEM PROCESSNG ADVAN MATERIALS	<i>3 credits</i>
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	<i>3 credits</i>
Prerequisite: 605. Development of catalysis theory and its application to the design of practical catalysts.		
750	ADVANCED POLLUTION CONTROL	<i>3 credits</i>
Prerequisite: 463 or permission. Analysis of current environmental research in analytical instrumentation, air and water, pollution control, hazardous waste treatment, and nuclear waste disposal.		
780	ADVANCED BIOCATALY & BIOTRNSFR	<i>3 credits</i>
Prerequisite: 3150:401/501 or permission of instructor. Focuses include: (a) high performance enzymes via chemical modification, recombinant technology, evolution, extremophiles; (b) applications of enzymes in biosynthesis, bioprocessing, biosensing, and bioremediation.		
791	CHEMICAL ENGINEERING SEMINAR	<i>1 credits</i>
(May be repeated for a maximum of six credits.) Prerequisite: Permission of instructor. Advanced level coverage of specialized chemical engineering topics. Intended for students seeking a Ph.D. in engineering.		
794	ADV SEM RESCH TECHNQS FOR ENGR	<i>3 credits</i>
(May be repeated for a total of six credits.) Prerequisite: permission of department chair. Advanced projects, readings and other studies in various areas of chemical engineering. Intended for student seeking Ph.D. in engineering.		
898	PRELIMINARY RESEARCH	<i>1-15 credits</i>
(May be repeated for a total of 15 credits.) Prerequisite: approval of dissertation director. Preliminary investigations prior to the submission of a dissertation proposal to the Interdisciplinary Doctoral Committee.		
899	DOCTORAL DISSERTATION	<i>1-15 credits</i>
(May be taken more than once.) Prerequisite: acceptance of research proposal by the Interdisciplinary Doctoral Committee and approval of the dissertation director. Original research by the doctoral student.		



Corrosion Engineering (4250)

101	TOOLS FOR CORROSION ENGR	<i>2 credits</i>
Prerequisite: Permission. Corequisite: 3450:149. Introduction to corrosion engineering. Basic concepts of engineering practice. Introduction to professional level software needed for later studies.		
105	MATERIALS SC FOR CORROSION ENG	<i>2 credits</i>
Prerequisite: 101. Corequisite: 3150:153. Structure, processing and properties of metals, ceramics, and polymers.		
194	DESIGN PROJECT 1	<i>1 credits</i>
Prerequisite: Permission. Individual design project in Corrosion Engineering that is supervised by a faculty member.		
200	MAT & ENER BALANCS FR CORR ENG	<i>4 credits</i>
Prerequisites: 101 or equivalent, 3450:221, 3150:151. Introduction to material and energy balance calculations applied to the solution of chemical processing and corrosion engineering problems.		
294	DESIGN PROJECT 2	<i>1-2 credits</i>
Prerequisite: Sophomore Standing. Individual design project in Corrosion Engineering that is supervised by a faculty member.		
300	FUNDAMENTALS OF AQUEOUS CORR	<i>3 credits</i>
Prerequisites: 105, 3150:264, 4200:225, 4300:201. Corequisites: 301, 4300:202, 4400:320. Fundamentals of aqueous corrosion will cover corrosion tendencies, processes and rates at low temperature. An in-depth understanding of the aqueous corrosion mechanisms, materials performance, and the effects of stress will be covered.		
301	AQUEOUS CORROSION LAB 1	<i>1 credits</i>
Prerequisites: 101, 105, 3150:265. Corequisite: 300. Laboratory exercises will reinforce the fundamentals of aqueous corrosion.		
305	AQUEOUS CORROSION PREVENTION	<i>3 credits</i>
Prerequisite: 300. Corequisite: 306. This course presents a functional approach to controlling and preventing aqueous corrosion based upon engineering methodologies to proper materials selection, organic coatings, chemical inhibitors, and electrochemical protection. Applications in specific industries will be covered.		
306	AQUEOUS CORROSION LAB 2	<i>1 credits</i>
Prerequisite: 301. Corequisite: 305. Laboratory exercises will reinforce the fundamentals of aqueous corrosion.		
310	FUNDAMENTALS OF DRY CORROSION	<i>3 credits</i>
Prerequisite: 300. Corequisite: 311. Fundamentals of dry/hot corrosion will cover corrosion tendencies, processes and rates at high temperature. An in-depth understanding of the high temperature corrosion mechanisms, materials performance, and the effects of stress will be covered.		
311	HIGH TEMPERATURE CORROSION LAB	<i>1 credits</i>
Prerequisite: 306. Corequisite: 310. Laboratory exercises will reinforce the fundamentals of high temperature corrosion.		
340	CORROSION PREVENTION (DRY)	<i>3 credits</i>
Prerequisite: 305. Corequisite: 310, 4600:380. This course presents a functional approach to controlling and preventing dry corrosion based upon engineering methodologies to proper materials selection, inorganic coatings, and passivation. Applications in specific industries will be covered.		
394	DESIGN PROJECT 3	<i>1-3 credits</i>
Prerequisite: Junior Standing. Individual design project in Corrosion Engineering that is supervised by a faculty member.		
440	CORROSION MANAGEMENT 1	<i>3 credits</i>
Prerequisite: 340, 4600:380. This course applies the lessons learned in corrosion prevention and laboratory courses to corrosion case studies. Solutions to existing corrosion problems will be developed based on the analysis of test data.		
441	CORROSION MANAGEMENT 2	<i>3 credits</i>
Prerequisite: 440. This course focuses on understanding the financial, political, social and health implications of corrosion, corrosion mitigation, and corrosion prevention. Solutions to existing corrosion problems will be developed based on economic, political, social, and health issues. The course will also cover methodologies for preserving assets and reducing operation costs.		
494	DESIGN PROJECT 4	<i>1-3 credits</i>
Prerequisite: Senior Standing. Individual design project in Corrosion Engineering that is supervised by a faculty member.		
497	HONORS PROJECT	<i>1-3 credits</i>
Prerequisites: Senior standing in Honors College or permission. Individual research or design project in Corrosion Engineering that is supervised by a faculty member. Conducted in accordance with the Honors College requirements.		



Civil Engineering (4300)

101	TOOLS FOR CIVIL ENGINEERING	<i>3 credits</i>
Corequisites: 3450:149. Introduction to Civil Engineering. Basic concepts of engineering practice including communication skills, problem solving skills, professional ethics/goals, and teamwork. Introduction to professional level software including CAD, graphics presentation, spreadsheets, database, and mathematical computation.		
120	INTRO: CIVIL ENGR DESIGN	<i>2 credits</i>
Introduction of basic design concepts in different civil engineering disciplines. Students learn to gain experience through hands-on mini projects by working in a team under supervision.		
201	STATICS	<i>3 credits</i>
Corequisites: 3450:222 and 3650:291. Forces, resultants, couples; equilibrium of force systems; distributed forces; centers of gravity, analysis of simple structures; moments of inertia; kinematics.		
202	INTRO: MECHANICS OF SOLIDS	<i>3 credits</i>
Prerequisite: 201. Axial force, bending moment diagrams, axial stress and deformation; stress-strain diagrams; torsion; flexural stress; flexural shearing stress; compound stresses; indeterminate beams; columns.		
230	SURVEYING	<i>3 credits</i>
Basic tools and computations for surveying: measurement of distance elevation and angles; traverse surveys. Laboratory field practice.		
306	THEORY OF STRUCTURES	<i>3 credits</i>
Prerequisite: 202. Stability and determinacy; statically determinate trusses and frames; approximate frame analysis influence lines; moving loads; virtual work analysis; moment area theorem; theorem of three moments; moment distribution for continuous beams and frames.		
313	SOIL MECHANICS	<i>3 credits</i>
Prerequisite: 202 or permission. Physical properties of soils. Soil water and groundwater flow. Stresses, displacements, volume changes, consolidation within a soil mass. Soil strength. Compaction.		
314	GEOTECHNICAL ENGINEERING	<i>3 credits</i>
Prerequisite: 313. Limiting equilibrium within a soil mass. Design of retaining walls, bulkheads, shallow, deep foundation systems. Slope stability. Laboratory study of soil properties and behavior.		
321	INTRO: ENVIRONMENTAL ENGINEER	<i>3 credits</i>
Prerequisites: 3150:153, 3450:222. Basic principles of ecosystems, microbiology, chemical reactions, and material flow that environmental engineers use to protect our water, air and soil.		
323	WATER SUPPLY & POLLUT CNTRL	<i>3 credits</i>
Prerequisite: 321. Water and wastewater characteristics, criteria, quantities and distribution. Water and wastewater treatment process flowsheets, design and operation. Wastewater and residue disposal.		
341	HYDRAULIC ENGINEERING	<i>4 credits</i>
Prerequisite: 4600:310. This course will focus on presentation and application of fundamental hydraulic principles in both the classroom and laboratory. Examination of flow in pipelines and pipe networks, pumps and pumping stations, hydrology, flow in open channels, groundwater hydraulics, and design of hydraulic structures will be studied. Emphasis will be placed on proper application of principles, data interpretation and analysis, problem solving, and report writing.		
361	TRANSPORTATION ENGINEERING	<i>3 credits</i>
Prerequisite: junior standing. Introductory survey of transportation topics including transportation planning requirements and techniques, introduction to design of highways, airports and railroads and introduction to traffic engineering.		
380	ENGINEERING MATERIALS LAB	<i>3 credits</i>
Prerequisite: 202. Fundamentals and applications of materials science, mechanics of solids and study of laboratory instrumentation and standard techniques in testing of engineering materials.		
390	CIVIL ENGINEERING SEMINAR	<i>1 credits</i>
A civil engineering seminar discussing contemporary issues in civil engineering, our professional and ethical responsibilities, and our impact and interaction with society.		
401	STEEL DESIGN	<i>3 credits</i>
Prerequisite: 306. Tension, compression members; openweb joists; beams; bearing plates; beam-columns; bolted, welded connections.		
403	REINFORCED CONCRETE DESGN	<i>3 credits</i>
Prerequisite: 306. Ultimate strength analysis and design; compression steel; diagonal tension; stirrups; development length; one-way slab; T-beams; two-way slabs; columns; isolated and combined footings.		

404	ADVANCED STRUCTURAL DESIGN	<i>3 credits</i>
Prerequisites: 401, 403. Composite design; plate girders; plastic design; cantilever retaining walls; torsion in R/C members; deflection of R/C members; continuous girder bridge design.		
407	ADVANCED STRUCTURAL ANALYSIS	<i>3 credits</i>
Prerequisite: 306. Energy methods for beams and frames. Stiffness and flexibility formulations for framed structures using classical and matrix methods. Introduction to stability and plastic analysis. Warping-Torsion behavior of beams. Analysis of axisymmetric circular plates and membrane shells.		
414	DESIGN OF EARTH STRUCTURES	<i>3 credits</i>
Prerequisite: 314 or permission. Design of earth structures: dams, highway fills, cofferdams, etc. Embankment construction techniques, quality control, embankment analysis, instrumentation, foundation soil stabilization, seepage analysis and control. Design problem. Graduate students will perform more advanced analysis and design.		
418	SOIL & ROCK EXPLORATION	<i>3 credits</i>
Prerequisite: 314 or permission. Site exploration criteria and planning. Conventional boring, sampling and in situ testing methods. Theory and application of geophysics and geophysical methods including seismic, electrical resistivity, gravity, magnetic and radioactive measurements. Air photo interpretation.		
423	CHEMISTRY FOR ENVIRNMNTL ENGRS	<i>3 credits</i>
Prerequisite: One year of college chemistry. General, physical, organic biochemistry, equilibrium, and colloid chemistry concepts applied to Environmental Engineering. Concepts are used in water and wastewater laboratory.		
424	WATER-WASTEWATER LABORATORY	<i>1 credits</i>
Corequisite: 323 or permission. Analysis of water and wastewater.		
426	ENVIRONMENTAL ENGINEERING DSGN	<i>3 credits</i>
Prerequisite: 323. An introduction to the physical, chemical and biological processes utilized in the treatment of water and wastewater, with design parameters emphasized.		
427	WATER QUALITY MODELING & MGMT	<i>3 credits</i>
Prerequisite: 323. Analysis and simulation of the physical, chemical and biochemical processes affecting stream quality. Development of management strategies based upon the application of water quality modeling techniques to environmental systems.		
428	HAZARDOUS & SOLID WASTES	<i>3 credits</i>
Prerequisite: senior standing or permission of instructor. Hazardous and solid waste quantities, properties and sources are presented. Handling, processing, storage and disposal methods are discussed with non-technical constraints outlined.		
441	HYDRAULIC DESIGN	<i>3 credits</i>
Prerequisite: 341. Collection and critical evaluation of hydraulic data related to actual design problem selected by instructor. Development and analysis of design alternatives. Preparation of reports.		
443	APPLIED HYDRAULICS	<i>3 credits</i>
Prerequisite: 341. Review of design principles: urban hydraulics, stream channel mechanics, sedimentation, coastal engineering.		
445	HYDROLOGY	<i>3 credits</i>
Prerequisite: 341. Surface water hydrology, water cycle, precipitation, evaporation, stream flow. Principles of hydrologic systems and their analysis. Hydrologic simulation, reservoir planning and water supply studies. Analysis of rainfall and floods.		
448	HYDRAULICS LABORATORY	<i>1 credits</i>
Prerequisite: 341. Introduction to laboratory and field devices for hydraulic measurements. Reduction and presentation of hydraulic data. Individual assignments of model studies of hydraulic structures.		
450	URBAN PLANNING	<i>2 credits</i>
Historical developments in urban planning; urban planning techniques and patterns; comprehensive master planning studies; planning regulations; design problems; class projects; class project presentation.		
451	COMPUT MTHDS OF STRCTRL ANALYS	<i>3 credits</i>
Prerequisite: 306. Computer methods of structural analysis. Finite element software and interactive graphics. Stiffness concepts and matrix formulation of beams; modeling of simple and complex structural systems; vibration analysis using microcomputers.		
452	STRUCTURAL VIBRATNS & EARTHQKS	<i>3 credits</i>
Prerequisite: 306. Vibration and dynamic analysis of structural systems with one, two, or more degrees of freedom; beams, frames, buildings and bridges. Numerical methods of analysis. Elastic-plastic systems. Earthquake analysis of design. Earthquake codes.		
453	OPTIMUM STRUCTURAL DESIGN	<i>3 credits</i>
Prerequisite: 306. Basic concepts in structural optimization. Mathematical programming methods including unconstrained minimization, multidimensional minimization and constrained minimization.		
454	ADVANCED MECHANICS OF MATERIAL	<i>3 credits</i>
Prerequisite: 202 or equivalent. Three-dimensional state of stress and strain analysis. Unsym metric bending of straight and curved members with shear deformation. Beams on elastic foundations. Saint Venant's torsional problems. Inelastic analysis of bending and torsional members. Introduction to energy method. Instability behavior of prismatic members.		
463	TRANSPORTATION PLANNING	<i>3 credits</i>

Prerequisite: 361. Theory and techniques for development, analysis and evaluation of transportation system plans. Emphasis on understanding and using tools and professional methods available to solve transportation planning problems, especially in urban areas.

464	HIGHWAY DESIGN	<i>3 credits</i>
Prerequisite: 361. Study of modern design of geometrical and pavement features of highways. Design problem and computer use. Graduate students will produce a more complete design.		
465	PAVEMENT ENGINEERING	<i>3 credits</i>
Prerequisite: 361. Theories of elasticity, of viscoelasticity and of layered systems as applied to pavements. Pavement materials characterization; pavement design, pavement restoration for rigid and flexible pavements.		
466	TRAFFIC ENGINEERING	<i>3 credits</i>
Prerequisite: 361. Vehicle and urban travel characteristics, traffic flow theory, traffic studies, accidents and safety, traffic signs and marking, traffic signal planning, traffic control and transportation administration.		
467	ADVANCED HIGHWAY DESIGN	<i>3 credits</i>
Prerequisites: 464, autoCAD capability, or permission. Computer-aided geometrical design of highways including survey data input, digital terrain modeling, cross-section templates, horizontal and vertical roadway design, earthwork computations, and advanced topics.		
468	HIGHWAY MATERIALS	<i>3 credits</i>
Prerequisites: 361, 380 or permission. Properties of aggregates, manufacture and properties of portland cement concrete, properties of asphaltic materials, design and testing of hot mix asphalt pavement mixes and of surface treatments. Laboratory preparation of specimens and determination of properties. Graduate student requirement: Graduate students will be required to perform an additional eight-hour asphalt laboratory (Absorption recovery of asphalt from solution) and to prepare a paper on a highway materials topic.		
471	CONSTRUCTION ADMINISTRATION	<i>3 credits</i>
Prerequisite: senior standing or permission. Organization for construction, construction contracts, estimating, bidding, bonds and insurance. Construction financial management and supervision of construction, scheduling using critical path method.		
472	CONSTRUCTION ENGINEERING	<i>3 credits</i>
Prerequisite: senior standing or permission. Construction equipment selection and management. Techniques of various engineering construction operations including blasting, tunneling, concrete framework and dewatering.		
473	CONSTRUCTION MATERIALS	<i>2 credits</i>
Prerequisites: 380, 4200:305. Composition, structure and mechanical behavior of structural materials such as concrete, wood, masonry, plastics and composite materials. Discussion of applications and principles of evaluating material properties.		
474	UNDERGROUND CONSTRUCTION	<i>2 credits</i>
Prerequisite: 314. Description of practices and techniques of underground construction. Selection of proper method for individual job. Design of underground openings, support systems and linings.		
480	RELIABILITY-BASED DESIGN	<i>4 credits</i>
Prerequisite: 3470:261 and senior standing. Probability concepts in civil engineering. Risk analysis and reliability based design.		
482	SPEC PRO: CIVIL ENGINEERING	<i>1-3 credits</i>
Prerequisites: senior standing and permission. Directed individual or group research or study in student's field of interest. Topic subject to approval by adviser.		
490	SENIOR DESIGN IN CIVIL ENGINEERING	<i>3 credits</i>
Prerequisites: senior standing. A civil engineering design project that emphasizes interdisciplinary teamwork to solve a substantial, currently relevant problem.		
497	HONORS PROJECT	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisite: senior standing in Honors Program. Individual creative project or design relevant to civil engineering, supervised by faculty member of the department.		
514	DESIGN OF EARTH STRUCTURES	<i>3 credits</i>
Prerequisite: 314 or permission. Design of earth structures; dams, highway fills, cofferdams, etc. Embankment construction techniques, quality control, embankment analysis, instrumentation, foundation soil stabilization, seepage analysis and control. Design problem. Graduate students will perform more advanced analysis and design.		
518	SOIL & ROCK EXPLORATION	<i>3 credits</i>
Prerequisite: 314 or permission. Site exploration criteria and planning. Conventional boring, sampling and in situ testing methods. Theory and application of geophysics and geophysical methods including seismic, electrical resistivity, gravity, magnetic and radioactive measurements. Air photo interpretation.		
523	CHEMISTRY FOR ENVIRONMENTAL ENGRS	<i>3 credits</i>
Prerequisite: One year of college chemistry. General, physical, organic, biochemistry, equilibrium, and colloid chemistry concepts applied to environmental engineering. Concepts are used in water and wastewater laboratory.		
526	ENVIRONMENTAL ENGINEERING DESIGN	<i>3 credits</i>
Prerequisite: 323. An introduction to the physical, chemical and biological processes utilized in the treatment of water and wastewater, with design parameters emphasized.		
527	WATER QUALITY MODELING & MGMT	<i>3 credits</i>

Prerequisite: 323. Analysis and simulation of the physical, chemical and biochemical processes affecting stream quality. Development of management strategies based upon the application of water quality modeling techniques to environmental systems.

528	HAZARDOUS & SOLID WASTES	<i>3 credits</i>
Prerequisite: senior standing or permission of instructor. Hazardous and solid waste quantities, properties and sources are presented. Handling, processing, storage and disposal methods are discussed with non-technical constraints outlined.		
543	APPLIED HYDRAULICS	<i>3 credits</i>
Prerequisite: 341. Review of design principles; urban hydraulics, stream channel mechanics, sedimentation, coastal engineering.		
551	COMPUT MTHDS OF STRCTRL ANALYS	<i>3 credits</i>
Structural analysis using microcomputers; finite element software, interactive graphics; beam stiffness concepts and matrix formulation; simple and complex structural systems modeling; vibration analysis.		
553	OPTIMUM STRUCTURAL DESIGN	<i>3 credits</i>
Prerequisite: 306. Basic concepts in structural optimization. Mathematical programming methods including unconstrained minimization, multidimensional minimization and constrained minimization.		
554	ADVANCED MECHANICS OF MATERIAL	<i>3 credits</i>
Prerequisite: 202 or equivalent. Three-dimensional state of stress and strain analysis. Unsymmetric bending of straight and curved members with shear deformation. Beams on elastic foundations. Saint Venant's torsional problems. Inelastic analysis of bending and torsional members. Introduction to energy method. Instability behavior of prismatic members.		
563	TRANSPORTATION PLANNING	<i>3 credits</i>
Prerequisite: 361. Theory and techniques for development, analysis and evaluation of transportation system plans, Emphasis on understanding and using tools and professional methods available to solve transportation planning problems, especially in urban areas.		
564	HIGHWAY DESIGN	<i>3 credits</i>
Prerequisite: 361. Study of modern design of geometrical and pavement features of highways. Design problem and computer use. Graduate students will produce a more complete design.		
565	PAVEMENT ENGINEERING	<i>3 credits</i>
Prerequisite: 361. Theories of elasticity, of viscoelasticity and of layered systems as applied to pavements. Pavement materials characterization; pavement design, pavement restoration for rigid and flexible pavements.		
566	TRAFFIC ENGINEERING	<i>3 credits</i>
Prerequisite: 361. Vehicle and urban travel characteristics, traffic flow theory, traffic studies, accidents and safety, traffic signs and marking, traffic signal planning, traffic control and transportation administration.		
567	ADVANCED HIGHWAY DESIGN	<i>3 credits</i>
Prerequisite: 564, Autocad, or permission. Computer-aided geometric design of highways including survey data input, digital terrain modeling, cross-section templates, horizontal and vertical roadway design, earthwork computations, and advanced topics.		
568	HIGHWAY MATERIALS	<i>3 credits</i>
Prerequisites: 361, 380 or permission. Properties of aggregates, manufacture and properties of portland cement concrete, properties of asphaltic materials, design and testing of hot mix asphalt pavement mixes and of surface treatments. Laboratory preparation of specimens and determination of properties. Graduate student requirement: Graduate students will be required to perform an additional eight-hour asphalt laboratory (Absorption recovery of asphalt from solution) and to prepare a paper on a highway materials topic.		
574	UNDERGROUND CONSTRUCTION	<i>2 credits</i>
Prerequisite: 314. Description of practices and techniques of underground construction. Selection of proper method for individual job. Design of underground openings, support systems and linings.		
604	DYNAMICS OF STRUCTURES	<i>3 credits</i>
Prerequisite: 306. Approximate, rigorous dynamic analysis of one, two, multiple and infinite degrees of freedom structural systems. Elastoplastic, plastic analysis. Equivalent systems, dynamic hinge concept. Modal analysis. Transfer matrices. Fourier, Laplace transforms.		
605	STRUCTURAL STABILITY	<i>3 credits</i>
Prerequisite: 554 or equivalent. Buckling of bars, beam-columns and frames. Lateral buckling of beams. Double and tangent modulus theories. Energy methods. Compressed rings and curved bars. Torsional buckling. Buckling of plates and shells. Inelastic buckling.		
606	ENERGY METHODS & ELASTICITY	<i>3 credits</i>
Prerequisite: 202. Work and complementary work. Strain energy and complementary strain energy. Virtual work and Castigliano's theorems. Variational methods. Applications. Formulation of boundary value problems in elasticity. Selected topics in energy methods and elasticity.		
607	PRESTRESSED CONCRETE	<i>3 credits</i>
Prerequisite: 404. Basic concepts. Design of double-tee roof girder; shear; development length; column; piles; design of highway bridge girder; pretensioned, post-tensioned; continuous girders; corbels; volume-change forces; connections.		
608	MULTISTORY BUILDING DESIGN	<i>3 credits</i>
Prerequisite: 401. Floor systems; staggered truss system; braced frame design; unbraced frame design; drift indices; monocoque (tube and partial tube) systems; earthquake design; fire protection. Analysis by STRUDL.		

609	FINITE ELEMENT ANALYSIS I	<i>3 credits</i>
Prerequisite: 554 or equivalent. Introductory development of finite element method as applied to various topics from continuum mechanics. Such areas as plane, axisymmetric and 3-D stress analysis; conduction, fluid mechanics; transient problems an geometric and material nonlinearity.		
610	COMPOSIT MATRL IN CIV INFRASTR	<i>3 credits</i>
Prerequisite: 554 or equivalent. Constituent materials; manufacturing processes; panel properties by micro/macromechanics; simplified analysis of composite beams, columns, and applications to highway bridges; composites in concrete and wood structures.		
611	FUNDAMENTALS OF SOIL BEHAVIOR	<i>2 credits</i>
Prerequisite: 314. In-depth examination of structure and fundamental physico-chemical and mechanical properties of engineering soils viewed as particulate matter.		
612	ADVANCED SOIL MECHANICS	<i>3 credits</i>
Prerequisite: 314. Study of mechanics of behavior of soil as continuum. Principles of stress, strain, deformation, shear strength and pore water pressure as applied to mechanical behavior of soil masses.		
613	ADVANCED GEOTECHNICAL TESTING	<i>3 credits</i>
Prerequisites: 518, 612. Theory and practice of static and dynamic in situ and laboratory soil testing. Testing procedures, applicability, limitations. General evaluation of geotechnical parameters for routine and special site conditions. One lecture, two laboratories per week.		
614	FOUNDATION ENGINEERING I	<i>3 credits</i>
Prerequisite: 313 or permission. Foundation bearing capacity and settlement analysis. Design of shallow and deep foundation systems. Pile driving and load test procedures and analysis. Theory and design of earth-retaining structures including retaining walls, tiebacks and bulkheads.		
615	FOUNDATION ENGINEERING II	<i>3 credits</i>
Prerequisite: 614 or permission. Soil-structure interaction theory and applications to under ground structures including conduits, tunnels and shafts. Advanced foundation construction methods and problems including dewatering, soil stabilization, underpinning and cofferdams. Slope stability analysis.		
616	SOIL IMPROVEMENT	<i>3 credits</i>
Prerequisites: 313 and 314. Admixture stabilization, precompression with vertical drains, blasting, vibrocompaction, injection and grouting, thermal methods, electro-osmosis, soil reinforcement, case studies.		
617	NUMERICAL METHODS-GEOTECH ENGR	<i>3 credits</i>
Prerequisites: 313 and 314. Steady-state and transient flow through soils, consolidation, soil-structure interaction, piling, stress-deformation analysis of earth structures.		
618	ROCK MECHANICS	<i>3 credits</i>
Prerequisite: 554 or permission. Mechanical nature of rocks; linear elasticity and application to rock problems; inelastic behavior of rocks, time dependence and effects of pore pressure, experimental characterization of rock properties; failure theory and crack propagation.		
620	SANITARY ENGINEERING PROBLEMS	<i>2 credits</i>
Prerequisite: 323. Application of both laboratory methods and theory to solution of sanitary engineering problems involving water pollution, stream regeneration, special industrial wastes, detergents and others.		
621	ENVIRONMENTAL ENGR PRINCIPLES	<i>4 credits</i>
Corequisite: 523. Provide the basic principles of chemical reaction engineering, microbiology, environmental regulations, and contaminant migration required for the understanding and solving environmental problems.		
622	AQUATIC CHEMISTRY	<i>3 credits</i>
Prerequisites: 3150:151 and 3150:153 or 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/CHEM TREATMNT PROCESS	<i>3 credits</i>
Prerequisite or corequisite: 621. Theory, current research associated with physical/chemical processes, the impact on design-coagulation/flocculation, sedimentation, filtration, absorption processes emphasized.		
624	BIOLOGICAL TREATMENT PROCESSES	<i>3 credits</i>
Prerequisite or corequisite: 621. Theory, current research associated with biological processes, related physical/chemical processes, the impact on design-activated sludge, fixed film processes, gas transfer, sludge stabilization, sludge dewatering processes emphasized.		
625	WATER TREATMENT PLANT DESIGN	<i>3 credits</i>
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-benefits.		
626	WASTEWATER TREATMENT PLANT DSN	<i>3 credits</i>
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.		
627	ENVIRONMENTAL OPERATIONS LAB	<i>2 credits</i>
Prerequisite: 426 or permission of instructor. Conduction of laboratory experiments related to the design and operation of water and wastewater treatment processes. Experimental design, data collection, analysis and report preparation.		
628	ADVANCED CHEMICAL OXIDATN PROC	<i>3 credits</i>

Prerequisites: 3150:151 and 3150:153 or permission. Qualitative and quantitative treatment of variables that govern process chemistry and kinetics in water. Emphasis on ozone, hydrogen peroxide, and ultra-violet light (UV).

631	SOIL REMEDIATION	<i>3 credits</i>
Prerequisite: 621 or permission. Provide a thorough understanding of site characterization, traditional soil remediation technologies, as well as present new and emerging remediation technologies.		
635	AIR POLLUTION CONTROL	<i>3 credits</i>
Prerequisite: 621 or permission. Introduction to air pollution control philosophies, approaches, regulations, and modeling. Also contains an in-depth evaluation/design approach for the control of particular matter, SO _x , and NO _x .		
640	ADVANCED FLUID MECHANICS	<i>3 credits</i>
Prerequisite: 4500:310 or permission. Basic equations, Navier-Stokes equations. Analysis of potential flow, turbulence, hydraulic transients. Solution of typical fluid mechanics problems. Analysis of water hammer in pipe networks by method of characteristics.		
644	OPEN CHANNEL HYDRAULICS	<i>3 credits</i>
Application of basic principles of fluid mechanics to flow in open channels. Criteria for analysis of uniform, gradually varied and rapidly varied flows. Study of movement and transportation of sediments. Design problems utilizing numerical techniques.		
645	APPLIED HYDROLOGY	<i>3 credits</i>
Discussion of water cycle such as precipitation, evaporation, stream flows, floods, infiltration. Methods of analysis and their application to studies of water demand, storage, transportation including mathematical modeling of urban runoff and statistical hydrology.		
646	COASTAL ENGINEERING	<i>3 credits</i>
Characteristics of linear and nonlinear wave theories. Interaction of structures, waves; design analysis of shore, offshore structures. Movement, transportation of sediments in lake shore areas.		
663	ADV TRANSPORTATION ENGR I	<i>3 credits</i>
Prerequisites: 361, 466, or permission. Highway and parking facility design, transportation planning, highway capacity estimates, signal systems and optimization, incident detection and management, freeway ramp metering, and highway traffic safety.		
664	ADV TRANSPORTATION ENGR II	<i>3 credits</i>
Prerequisites: 361, 466 or permission. Highway and parking facility design, transportation planning, highway capacity estimates, signal systems and optimization, incident detection and management, freeway ramp metering, and highway traffic safety.		
665	TRAFFIC DETECTION & DATA ANALYS	<i>3 credits</i>
Prerequisite: 361 or consent of instructor. Theory and application of pressure tubes, loop detectors, and imaging sensing, microwave, infrared, ultrasonic, laser detectors. Parameter estimation, reliability, and data mining and fusion.		
681	ADVANCED ENGINEERING MATERIALS	<i>3 credits</i>
Selected topics on principles governing mechanical behavior of materials with respect to elastic, plastic and creep responses, stress rupture, low and high cycle and thermal fatigue. Failure theories and fracture phenomena in brittle and ductile materials. Crack propagation and life prediction of engineering materials.		
682	ELASTICITY	<i>3 credits</i>
Prerequisite: 202. Plane stress, plane strain. Two-dimensional problems in rectangular, polar coordinates. Strain-energy methods. Stress, strain in three dimensions. Torsion. Bending. Thermal stresses.		
683	PLASTICITY	<i>3 credits</i>
Prerequisite: 682, 4600:622 or equivalent. Mathematical formulation of constitutive equations with focus on their use in structural analysis. Internal variables. Isotropic, kinematic hardening. Nonisothermal plasticity. Finite deformations. Anisotropy.		
684	ADVANCED REINFC D CONCRETE DSGN	<i>3 credits</i>
Prerequisite: 403. Slab systems. Equivalent frame properties. Limit analysis. Yield line theory. Lateral load systems. Shear walls. Footings. Biaxial column action.		
685	ADVANCED STEEL DESIGN	<i>3 credits</i>
Prerequisite: 401. Properties of steel, fasteners, bearing, friction joints, Gusset plates, bolts in tension, end plates, weld joints, cyclic loads, fatigue analysis, types of detail, torsion, stability design.		
686	EXPERIMENTAL MTHD STRUCT MECH	<i>3 credits</i>
Prerequisite: 682. Electrohydraulic closed-loop test systems. Methods for specimen heating. Strain measurement techniques for room and elevated temperatures. Design of computer controlled experiments investigating deformation and failure under complex stress states.		
687	LIMIT ANALYSIS IN STRUCT ENGR	<i>3 credits</i>
Prerequisites: 454/554, 682. Fundamental theorems of limit analysis. The lower-bound and upper-bound solutions. Applications to frames, plates and plane stress and plane strain problems. Design considerations. Mathematical programming and computer implementation.		
694	ADV SEM: CIVIL ENGINEERING	<i>1-3 credits</i>
Prerequisite: permission. Advanced projects, reading, studies, or experimental in various areas of civil engineering.		
697	ENGINEERING REPORT	<i>2 credits</i>
Prerequisite: Permission of advisor. A relevant problem in civil engineering for students electing the non-thesis option. The final engineering report must be approved by the advisor and the advisory committee.		
698	MASTERS RESEARCH	<i>1-6 credits</i>

Prerequisite: Permission of advisor. (May be repeated.) Research on a suitable topic in civil engineering culminating in a master's thesis.

699	MASTERS THESIS	<i>1-6 credits</i>
Prerequisite: permission. Research and thesis on some suitable topic in civil engineering as approved by department. Defense of thesis is by final examination.		
701	EARTHQUAKE ENGINEERING	<i>3 credits</i>
Prerequisite: 604. Earthquake fundamentals. Earthquake response of single-story and multi-story buildings, as well as structural components. Modal analysis for earthquake response. Inelastic response of multistory structures. Earthquake codes. Stochastic approach.		
702	PLATES & SHELLS	<i>3 credits</i>
Prerequisites: 682 and 3450:531. Navier and Levy solutions for rectangular plates. Approximate methods, including finite difference. Forces in middle plate. Large deflections. Differential geometry of a surface. Shells of revolution.		
703	VISCOELAST & VISCOPLAST	<i>3 credits</i>
Prerequisite: 683. Formulation of constitutive relations for time dependent materials. Classical linear viscoelasticity. Internal variable representation of nonlinear, hereditary behavior. Creep and rate dependent plasticity. Continuum thermodynamics. Anisotropy.		
704	FINITE ELEMENT ANALYSIS II	<i>3 credits</i>
Prerequisite: 609 and 702 or permission. Curved, plate, shell brick elements. Quasi-analytical elements. Quadrature formulas. Substructuring for static and dynamic analyses. Solution algorithms for linear and nonlinear static and dynamic analysis. Computer program formulation. Review of large-scale production programs.		
710	ADVANCED COMPOSITE MECHANICS	<i>3 credits</i>
Prerequisite: 610. Analysis of short-fiber composites and statistical behavior, bending, buckling and vibration of laminated plates and shells. Advanced topics involving stress concentration, residue stress, fatigue, fracture toughness, nonlinear and viscoelastic stress-strain formulations, solutions of nonlinear problems.		
712	DYNAMIC PLASTICITY	<i>3 credits</i>
Prerequisite: 683 or 703. Impulsive and transient loading of structural elements (beams, plates, shells, etc.) in which inelastic deformation occurs. Topics include: longitudinal and transverse plastic wave propagation in thin rods, propagation of plastic hinges, rate-dependent viscoplastic waves, transverse impact on beams and plates, high-rate forming, blast loading, plate perforation, shock waves in solids.		
717	SOIL DYNAMICS	<i>3 credits</i>
Prerequisite: 614 or permission. Vibration and wave propagation theory relating to soils, soil structures and foundations. Dynamic behavior of soils. Design of foundations for dynamic loading impact, pulsating and blast loads.		
731	BIOREMEDIATION	<i>3 credits</i>
Prerequisite: 621 or permission. Provide the fundamentals required for understanding and successfully implementing the biodegradation of hazardous compounds coupled with the design and operational techniques of bioremediation systems.		
745	SEEPAGE	<i>2 credits</i>
Discussion of parameters determining permeability of various soils. Analytical, numerical and experimental methods to determine two- or three-dimensional movement of groundwater. Unsteady flows.		
898	PRELIMINARY RESEARCH	<i>1-15 credits</i>
(May be repeated for a total of 15 credits.) Prerequisite: approval of dissertation director. Preliminary investigations prior to the submission of a dissertation proposal to the interdisciplinary Doctoral Committee.		
899	DOCTORAL DISSERTATION	<i>1-15 credits</i>
(May be taken more than once.) Prerequisite: acceptance of research proposal by the Interdisciplinary Doctoral Committee and approval of the dissertation director. Original research by the doctoral student.		



Electrical Engineering (4400)

101	TOOLS FOR ELECTRICAL ENGR	<i>3 credits</i>
Corequisite: 3450:221 or 149. Orientation to degree programs and design practice in electrical and computer engineering. Introduction to computer applications and resources for engineering studies.		
230	CIRCUITS I LABORATORY	<i>1 credits</i>
Corequisite: 231. Computation, computer aided circuit analysis, circuit theorem confirmation, report writing to include data analysis and reduction, introduction to electrical measurements.		
231	CIRCUITS I	<i>3 credits</i>
Corequisite: 4400:230, 3450:223, 3650:292. Fundamentals of circuit analysis including loop and nodal methods, phasor techniques, resonance, polyphase circuits and magnetic coupling.		
301	UG RESEARCH I: ELEC ENGR	<i>1 credits</i>
Prerequisite: completion of 101 or 4450:101, 4450:220, 230, 231, 330, and 332 with a combined average grade of 3.0 or higher, and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report.		
302	UG RESEARCH II: ELEC ENGR	<i>1 credits</i>
Prerequisite: 301 or 4450:301, and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report.		
303	UG RESEARCH III: ELEC ENGR	<i>1 credits</i>
Prerequisite: 302 or 4450:302, and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report to the department, and presentation of work in a research venue outside the department.		
304	UG RESEARCH IV: ELEC ENGR	<i>1 credits</i>
(May be repeated. May not be applied to degree requirements.) Prerequisite: 303 or 4450:303, and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report.		
307	BASIC ELECTRICAL ENGINEERING	<i>4 credits</i>
Prerequisite: 3650:292; corequisite: 3450:335. Covers fundamental aspects of electrical circuits, electronics and electrical machinery. Not open to an electrical or computer engineering major.		
309	DESIGN PROJ SEM: ELECTRICAL ENG	<i>1 credits</i>
Prerequisite: junior standing and permission. Project selection and proposal. Project specifications and alternative design. Professional ethics. Intellectual property. Societal impact issues in engineering design. Senior Design Project II presentations.		
330	CIRCUITS II LABORATORY	<i>1 credits</i>
Corequisite: 332. Computation, computer aided circuit analysis, circuit theorem confirmation, report writing to include data analysis and reduction, intermediate electrical measurements.		
332	CIRCUITS II	<i>3 credits</i>
Prerequisite: 231; corequisite: 330, 3450:335. Network theorems, Fourier methods, transfer functions. Laplace and Fourier transforms and their use in analyzing dynamic operation of circuits.		
340	SIGNALS & SYSTEMS	<i>4 credits</i>
Prerequisites: 4400:332, 4450:208 or 3460:209, 3450:335. Linear systems theory and transform analysis techniques for continuous and discrete systems. Convolutions, Laplace transforms, continuous and discrete Fourier transforms. Difference equations and Z transforms.		
341	INTRO: COMMUNICATION SYSTEMS	<i>3 credits</i>
Prerequisite: 340. Introduces analog and digital communication systems and signal processing. Time-sampling and filtering. Modulation and demodulation techniques. Noise and bandwidth requirements. System design and performance analysis.		
353	ELECTROMAGNETICS I	<i>4 credits</i>
Prerequisite: 231; corequisite: 3450:335 or permission. Vector analysis. Electrostatics: electrostatic field, scalar potential, dielectrics, boundary-value problems. Magnetostatics: magnetic circuits. Maxwell's equations: Faraday's law, time-harmonic fields. Introduction to plane waves.		
354	ELECTROMAGNETICS II	<i>3 credits</i>
Prerequisite: 353. Theory and application of transmission lines: transient and steady-state waves. Plane EM waves: propagation, reflection, and refraction. Waveguides open and closed-boundary guiding structures.		
360	PHYSICAL ELECTRONICS	<i>3 credits</i>
Prerequisite: 4450:220, 4400:332. PN junction, diffusion, tunneling, FET and BJT device physics, equivalent circuits for electronic devices, time and frequency analysis, biasing and logic families.		

361	ELECTRONIC DESIGN	<i>4 credits</i>
Prerequisites: 340, 360. Power amplification, feedback, oscillators, linear integrated circuits, modulation and demodulation circuits.		
371	CONTROL SYSTEMS I	<i>4 credits</i>
Prerequisite: 340. Introduction to servomechanisms and feedback. Modeling and response of feedback control systems. Stability of linear systems. Experiments include analog simulation and basic servomechanism.		
381	ENERGY CONVERSION	<i>4 credits</i>
Prerequisites: 332. Corequisite: 353. Nonelectrical to electrical energy conversions and vice versa: thermal, chemical, solar. Fundamentals of electromechanical energy conversion. Principles of operation of transformers, commutator machines, induction and synchronous machines.		
401	SENIOR DESIGN PROJ I: ELEC ENG	<i>2 credits</i>
Prerequisites: Senior standing; 309; Completion of 341, 354, 361, and 371 with a combined average grade of 2.0 or higher. Design and preparation phase of an engineering project. Requires project presentation, approval of a written proposal, and ordering of required parts.		
402	SENIOR DESGN PROJ II: ELEC ENG	<i>3 credits</i>
Prerequisite: 401. Implementation and evaluation phases of an engineering design project. Requires a project presentation and report.		
434	ACTIVE CIRCUITS	<i>3 credits</i>
Prerequisite: 340. Applications of operational amplifiers including bilinear transfer functions, scaling, cascade design, biquad circuits, lowpass, high pass, bandpass-filters, Butterworth and Chebyshev response, sensitivity, delay filters, frequency transformations, ladder design, simulated element design, leapfrog simulation and switched-capacitors.		
441	DIGITAL COMMUNICATION	<i>3 credits</i>
Prerequisite: 341. Introduction to digital communication theory and systems; coding of analog and digital information; digital modulation techniques. Introduction to information theory.		
445	WIRELESS COMMUNICATIONS	<i>3 credits</i>
Prerequisite: 441. Theory and analysis of wireless communication systems, wireless propagation, multiple access, modulation, demodulation, multipath channel characterization, diversity, cellular and PCS services and standards.		
447	RANDOM SIGNALS	<i>3 credits</i>
Prerequisite: 340. Applications of set theory, discrete and continuous sample spaces; probability, random variables, distribution functions, density functions, stochastic processes, random signals, system function, power spectrum and correlation functions.		
448	OPTICAL COMMUNICATION NETWORKS	<i>3 credits</i>
Prerequisites: 360. Optical waveguides and integrated components. Optical transmitters and receivers. Optical communications network design.		
451	ELECTROMAGNETIC COMPATIBILITY	<i>3 credits</i>
Prerequisite: 360. Introduction to electromagnetics, electromagnetic compatibility, crosstalk and effects on computers, communication lines and systems.		
453	ANTENNA THEORY	<i>3 credits</i>
Prerequisite: 354. Theory of EM radiation. Wire antennas, arrays, receiving antennas, reciprocity. Integral equations for induced currents, self and mutual impedances. Equivalence principle, radiation from aperture antennas.		
455	MICROWAVES	<i>4 credits</i>
Prerequisite: 354. Dynamic fields, Maxwell's equation and wave equations. Field analysis of wave guides, microwave components, techniques and systems.		
461	OPTICAL ELECTR & PHOTO DEVICES	<i>3 credits</i>
Prerequisites: 360. Lightwave engineering, photonic principles and optical electronic device technology.		
469	INTRO: SENSORS & ACTUATORS	<i>3 credits</i>
Prerequisite: senior standing or permission. Introduction to the theory and practice of sensors and actuators; sensing and actuation technologies; performance, and interfacing.		
472	CONTROL SYSTEMS II	<i>4 credits</i>
Prerequisite: 371. Sampled-data control system analysis and design. Discrete-time representation of sampled-data systems. Cascade, feedforward and state-variable compensation techniques. Digital computer implementation.		
481	MODERN POWER SYSTEMS	<i>3 credits</i>
Prerequisite: 381. Introduction to electricity utility load flow, faulty analysis, stability, surge protection and relaying.		
483	POWER ELECTRONICS I	<i>3 credits</i>
Prerequisite: 332. Steady-state analysis and design of power electronic converters: AC/DC converters (rectifiers), DC/DC converters, DC/AC PWM and resonant converters, AC/AC converters and cycloconverters.		
484	PWR ELECTRON LAB & DESIGN PROJ	<i>2 credits</i>
Prerequisite: 483/583 or equivalent. Experiments on different types of power electronic converters: AC/DC, DC/DC, DC/AC, and AC/AC. Design project to include design, simulation, building, and testing of a power electronic circuit.		
485	ELECTRIC MOTOR DRIVES	<i>3 credits</i>
Prerequisite: 381. Application of electric machines, choice of motor for particular drive. Application of power semiconductor circuits in electric machinery.		
486	DYNAMICS OF ELECTRIC MACHINES	<i>3 credits</i>

See department for course description.

487	ELECTROMAGN DSGN OF ELEC MCHNS	<i>3 credits</i>
See department for course description.		
488	CONTROL OF MACHINES	<i>4 credits</i>
See department for course description.		
489	ELECTRIC AND HYBRID VEHICLES	<i>3 credits</i>
Prerequisite: 3450:335 Basic principles of electric and hybrid vehicles. Characteristics of electric machines, internal combustion engines, transmissions, batteries, fuel cells, ultracapacitors. Vehicle control strategies, communication networks, and overall system integration.		
498	ST: ELECTRICAL ENGINEERING	<i>1-3 credits</i>
(May be taken more than once) Prerequisite: permission of department chair. Special topics in electrical engineering.		
541	DIGITAL COMMUNICATION	<i>3 credits</i>
Introduction to digital communication theory and systems; coding of analog and digital information; digital modulation techniques. Introduction to information theory.		
545	WIRELESS COMMUNICATIONS	<i>3 credits</i>
Prerequisite: 541. Theory and analysis of wireless communication systems, wireless propagation, multiple access, modulation, demodulation, multipath channel characterization, diversity, cellular, and PCS services and standards.		
548	OPTICAL COMMUNICATION NETWORKS	<i>3 credits</i>
Optical waveguides and optical integrated components, optical transmitters and receivers, optical communication network design.		
553	ANTENNA THEORY	<i>3 credits</i>
Theory of EM radiation. Wire antennas, arrays, receiving antennas, reciprocity. Integral equations for induced currents, self and mutual impedances. Equivalent principle, radiation from aperture antennas.		
555	MICROWAVES	<i>4 credits</i>
Dynamic fields, Maxwell's equation and wave equations. Field analysis of wave guides, microwave components, techniques and systems.		
561	OPTICAL ELECTR & PHOTO DEVICES	<i>3 credits</i>
Lightwave engineering, photonic principles and optical electronic device technology.		
572	CONTROL SYSTEMS II	<i>4 credits</i>
State variable analysis, design of control systems. Discrete systems, analysis, digital computer control. Experiments include hybrid, AC control system, digital computer control.		
583	POWER ELECTRONICS I	<i>3 credits</i>
Elements of power electronics circuits. Rectifiers, converters, inverters analysis and design.		
584	PWR ELECTRON LAB & DESIGN PROJ	<i>2 credits</i>
Prerequisite: 583 or equivalent. Experiments on different types of power electronic converters: AC/DC, DC/DC, DC/AD, and AC/AC. Design project to include design, simulation, building, and testing of a power electronic circuit.		
585	ELECTRIC MOTOR DRIVES	<i>3 credits</i>
Application of electric machines, choice of motor for particular drive. Application of power semiconductor circuits in electric machinery.		
589	DSGN OF ELEC & HYBRID VEHICLES	<i>3 credits</i>
Prerequisite: Permission by Instructor. Principles of electric and hybrid vehicles. Characteristics of electric machines, engines, transmissions, batteries, fuel cells, ultracapacitors. Vehicle control strategies, communication networks, and overall system integration.		
598	ST: ELECTRICAL ENGINEERING	<i>1-3 credits</i>
(May be taken more than once.) Prerequisite: permission of department chair. Special topics in electrical engineering.		
641	RANDOM SIGNAL ANALYSIS	<i>3 credits</i>
Analysis, interpretation and smoothing of engineering data through application of statistical and probability methods.		
642	IMAGING SYSTEM ENGINEERING	<i>3 credits</i>
Prerequisite: 561. Engineering principles of imaging systems, analysis, design, and evaluation of imaging systems, processing techniques, and applications.		
643	INFORMATION THEORY & CODING	<i>3 credits</i>
Prerequisite: 641 or permission. Sources, channels, entropy, mutual information, source coding theorem and channel coding theorem. Channel coding theorem for waveform channels. Introduction to rate-distortion theory.		
646	DIGITAL SIGNAL PROCESSING	<i>3 credits</i>
Relations between continuous-and discrete-time Fourier expansions. Sampling, aliasing, sampling rate conversion. Operator concepts in signal processing, all-pass systems, FFT, digital filter design.		
647	DIGITAL SP ANAL & SIGNAL MODEL	<i>3 credits</i>
Prerequisites: 646 or permission of instructor. Methods and theory of spectral analysis and signal modeling are investigated in detail. Applications of theory include speech processing, optimal filtering, biomedical systems, digital communications.		
648	OPTICAL NETWORK ARCHITECTURE	<i>3 credits</i>
Prerequisite: 548. Principles of optical network architecture, analysis, design, control, and fault management.		

650	ELECTROMAGNETIC THEORY I	<i>3 credits</i>
Prerequisite: permission of instructor. Electrostatics: uniqueness theorem, boundary-value problems, constructions of Green's functions. Magnetostatics. Electrodynamics: energy and momentum, EM potentials, Stratton-Chu formulation, radiation, dyadic Green's functions.		
651	ELECTROMAGNETIC THEORY II	<i>3 credits</i>
Prerequisite: 650 or permission of the course instructor. Scattering; TEM waves; guided wave theory: transmission lines, closed-boundary guides and cavities, modal orthogonality and completeness, Green's function, excitation and coupling, open-boundary waveguides.		
652	COMPUTER ELECTROMAGNETICS	<i>3 credits</i>
Prerequisite: 650 or permission of the course instructor. Analytic and numerical techniques for electromagnetic fields, conformal mapping, finite difference method, finite element method, and the method of moments.		
655	ADVANCED ANTENNA THEORY&DESIGN	<i>3 credits</i>
Prerequisite: 553 or equivalent. Basic properties and recent advances of microstrip antennas. Analysis and design of reflector antennas. Analysis and synthesis of linear and planar antenna arrays.		
666	SIM OF NANO & MOLECLR SCL SYS	<i>3 credits</i>
The course describes modern simulation techniques for the analysis of nanoscale phenomena: molecular dynamics, fast algorithms for multiatomic and multiparticle systems, ab initio methods in electronic structure calculation.		
673	NONLINEAR CONTROL	<i>3 credits</i>
Corequisite: 674 or instructor permission. Designed to provide students with qualitative insights into nonlinear systems as well as techniques for controlling such systems. Topics include describing functions, Popov and circle criteria, jump resonances, subharmonics, phase plane, conservative systems, Lyapunov theory, bifurcation of attractors, and routes to chaos.		
674	CONTROL SYSTEM THEORY	<i>3 credits</i>
Prerequisite: instructor permission. Advance modern control theory for linear systems. Controlability, observability, minimal realizations of multivariate systems, stability, state variable feedback, estimation, and an introduction to optimal control.		
677	OPTIMAL CONTROL I	<i>3 credits</i>
Prerequisite: 674. Formulation of optimizational problem; application of variational calculus, maximum principle and optimality principle to control problems. Computational techniques in optimization.		
680	DYNM & CONTL PWR ELEC CIRCUITS	<i>3 credits</i>
Prerequisites: 583 or equivalent. Averaged and sampled-data models for rectifiers and DC/DC converters. Small-and large-signal models about the cyclic steady-state. Feedback controls using classical and modern approaches.		
686	DYNAMICS OF ELECTRIC MACHINES	<i>3 credits</i>
Prerequisites: graduate status in Electrical Engineering. Voltage and mechanical differential equations of electric machines, analytical and numerical methods for solution of a system of machine differential equations.		
687	POWER ELECTRONICS II	<i>3 credits</i>
Prerequisite: 583 or equivalent. Effects of the nonidealities of the power circuit components, magnetics, base and gate drives, thyristor commutation circuits, heat transfer and thermal issues. Analysis and design of advanced power circuits.		
688	CONTROL OF ELECTRIC MACHINES	<i>3 credits</i>
Prerequisites: graduate student in Electrical Engineering. Elements of control circuits for electric drives, techniques for torque/speed control of electric machines.		
689	POWER SEMICONDUCTOR DEVICES	<i>3 credits</i>
Prerequisite: graduate status in Electrical Engineering. Structure and physics of power semiconductor devices: diodes, Bipolar junction transistors, MOSFETs, Thyristors, Power MOS-Bipolar devices (IGT,MCT). Emphasis on the issues that characterize these devices from the lower power semiconductor devices.		
693	SP: ELECTRICAL ENGINEERING	<i>1-3 credits</i>
(May be taken more than once) Prerequisite: permission of department chair. For a qualified graduate student. Supervised research or investigation in major field of training or experience. Credits dependent upon nature and extent of project.		
698	MAS RES: ELECTRICAL ENGR	<i>1-6 credits</i>
Prerequisite: Permission of advisor. (May be repeated.) Research on a suitable topic in electrical engineering culminating in a master's thesis.		
699	MASTERS THESIS	<i>1-6 credits</i>
Prerequisite: permission of department chair. Research and thesis on some suitable topic in electrical engineering.		
753	TOPICS IN ELECTROMAGNETICS	<i>3 credits</i>
Prerequisite: 651. Introduction to advanced techniques in fields. Topics include application of Green's function techniques and related boundary value problems.		
772	MODEL REDUC TECH FOR CTRL SYST	<i>3 credits</i>
Prerequisite: 674 or permission of the instructor. Classical, modern, and optimal techniques for computing reduced order models of linear, nonlinear, and infinite dimensional systems. Minimal realizations of multi-variable systems are also considered.		
774	ADVANCED LINEAR CONTROL SYSTMS	<i>3 credits</i>

Prerequisite: 674 and a course in Real Analysis or equivalent. Covers topics related to the design of robust control systems. The synthesis of controllers which yield stable closed-loop systems will be considered. The H_∞-optimality criterion for controller design is included. Special emphasis will be given to the robust stabilization problem and the disturbance attenuation problem.

775	ROBUST CONTROL	<i>3 credits</i>
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Prerequisite: 674. Input-output and state-space characterizations of robust control systems, and design techniques based on the algebraic Riccati equation. Decentralized and reliable control design methodologies.

777	OPTIMAL CONTROL II	<i>3 credits</i>
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Prerequisite: 677. Advanced state-feedback optimal control. Output-feedback issues, including loop transfer recovery, optimal observer design, reduced-order controllers, frequency weighting, and decentralized control.

778	ADAPTIVE CONTROL	<i>3 credits</i>
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Prerequisite: 671 or permission of instructor. This course will provide the advanced graduate student with the techniques required for the control of time-varying nonlinear and stochastic systems. Topics include minimum prediction error control, least squares estimation, certainty equivalence adaptive control. Kalman filtering, minimum variance control, LQG control and stochastic adaptive control.

779	ADV TOPICS IN CONTROL	<i>3 credits</i>
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Prerequisite: 776. Discussions of recent advances in control systems.

794	ADV SEM: ELECTRICAL ENGR	<i>1-3 credits</i>
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(May be taken more than once) Prerequisite: permission of department chair. Advanced level coverage of specialized topics. For student seeking Ph.D. in engineering.

898	PRELIMINARY RESEARCH	<i>1-15 credits</i>
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(May be repeated.) Prerequisite: approval of dissertation director. Preliminary investigations prior to submission of a dissertation proposal to the Interdisciplinary Doctoral Committee.

899	DOCTORAL DISSERTATION	<i>1-15 credits</i>
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(May be repeated.) Prerequisite: acceptance of research proposal by the Interdisciplinary Doctoral Committee and approval of the dissertation director. Original research by the doctoral student.



Computer Engineering (4450)

101	TOOLS FOR COMPUTER ENGINEERING	<i>3 credits</i>
Corequisite: 3450:221 or 3450:149. Orientation to degree programs and design practice in electrical and computer engineering. Introduction to computer applications and resources for engineering studies.		
208	PROGRAMMING FOR ENGINEERS	<i>3 credits</i>
Prerequisite: 4400:101 or permission. Introduction to programming. Environment and tools. C programming language. Machine level data forms and organization.		
220	DIGITAL LOGIC DESIGN	<i>4 credits</i>
Corequisites: 4400:101 or 4450:101. Boolean algebra and simplification of logic functions. Combinational and synchronous sequential circuits. Laboratory projects include design of digital systems with hardware description language and simulation.		
301	UG RESEARCH I: COMP ENGR	<i>1 credits</i>
Prerequisite: completion of 101 or 4400:101, 220, 4400:230, 4400:231, 4400:330, and 4400:332 with a combined average grade of 3.0 or higher, and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report.		
302	UG RESEARCH II: COMP ENGR	<i>1 credits</i>
Prerequisite: 301 or 4400:301, and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report.		
303	UG RESEARCH III: COMP ENGR	<i>1 credits</i>
Prerequisite: 302 or 4400:302, and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report to the department, and presentation of work in a research venue outside the department.		
304	UG RESEARCH IV: COMP ENGR	<i>1 credits</i>
(May be repeated. May not be applied to degree requirements.) Prerequisite: 303 or 4400:303, and permission. Research project, supervised by faculty member of the department; requires oral research presentation and written report.		
309	DESIGN PROJECT SEM - COMP ENGR	<i>1 credits</i>
Prerequisites: Junior standing and permission. Project selection and proposal. Project specifications and alternative design. Professional ethics. Intellectual property. Societal impact issues in engineering design. Senior Design Project II presentations.		
320	COMPUTER SYSTEMS	<i>3 credits</i>
Prerequisite: 3460:209 or 4450:208, 4450:220 or 3450:208. Introduces the design and architecture of modern computer systems. Data and instruction representation. Conventional computer organization. Hardware and software design processes. The hardware/software interface.		
325	OPERATING SYSTEMS CONCEPTS	<i>3 credits</i>
Prerequisites: 320, 3460:210. Processes and threads. Process communication and resource sharing. Deadlock resolution. Memory management. File systems. Introduction to network operating systems.		
367	VLSI DESIGN	<i>3 credits</i>
Prerequisite: 4400:360. Digital logic circuits. Very large scale integration (VLSI) fabrication processes and layout design. Delay and power of digital circuits. Latches and flip-flops in VLSI. Memory design. System-level design issues. Design project.		
401	SENIOR DES PROJ I - COMP ENGR	<i>2 credits</i>
Prerequisites: Senior standing; 309; completion of 367, 420, 427 and 440 with a combined average grade of 2.0 or higher. Design and preparation phase of an engineering project. Requires project presentation, approval of a written proposal, and ordering of required parts.		
402	SENIOR DES PROJ II - COMP ENGR	<i>3 credits</i>
Prerequisite: 401. Implementation and evaluation phases of an engineering design project. Requires a project presentation and report.		
410	EMBEDDED SCIENTIFIC COMPUTING	<i>3 credits</i>
Prerequisites: 208 or 3460:209. Fixed point, floating point representation and coding. Processor/DSP implementations. Assemblers, C language semantics. Adapting scientific library routines for embedded use. Minimizing complexity. Ill-conditioned problems.		
415	SYSTEM SIMULATION	<i>3 credits</i>
Prerequisite: 4400:371 or 4450:440. Computer simulation of dynamic systems. Discrete system stability, linear multistep and Runge-Kutta methods, nonlinear systems, stiff systems, distributed systems and real-time computing.		
420	COMPUTER SYSTEMS DESIGN	<i>3 credits</i>

Prerequisite: 4450:320. Design of advanced processors at the microarchitecture level. Pipelining. Superscalar, vector and VLIW architectures. Instruction-level parallelism. Compiler support. Multiprocessor architectures.

422	EMBEDDED SYSTEMS INTERFACING	<i>3 credits</i>
Prerequisites: 4450:208 or 3460:209. Corequisite: 4400:360. Microcontroller structures and embedded peripherals. Interfaces to physical environments. Software access to peripherals including timers, ADCs and DACs. Synchronous and asynchronous communications. Interrupts. Real-time operating systems.		
427	COMPUTER NETWORKS	<i>3 credits</i>
Prerequisite: 320; 325 or 3460:426. Network architecture and protocol layering. Network design principles, communication protocols, and performance measures. Socket programming, routing, error detection and correction, access control, multimedia networking.		
440	DIGITAL SIGNAL PROCESSING	<i>3 credits</i>
Prerequisite: 4400:340. Signal sampling and reconstruction; data-converter models. Unilateral and bilateral z transforms. Discrete Fourier Transform (DFT); Fast Fourier Transform (FFT). Digital filter structures and design methods.		
462	ANALOG INTEGRATED CIRCUIT DESG	<i>3 credits</i>
Prerequisite: 4400:360. CMOS processes and layout; amplifiers, current mirrors, and comparators; current, voltage, and bandgap references; switched capacitor circuits. Frequency and noise analysis techniques.		
465	PROGRAMMABLE LOGIC	<i>3 credits</i>
Prerequisite: 4450:220, 3460:209 or 4450:208. Digital design with programmable devices. PLD and FPGA architectures. Logic design and technology mapping tools.		
467	VLSI CIRCUITS & SYSTEMS	<i>3 credits</i>
Prerequisite: 367. High performance adders and multipliers for very large scale integration (VLSI) systems. Architectural synthesis. Design for high performance, low power, and testability.		
498	ST: COMPUTER ENGINEERING	<i>1-3 credits</i>
(May be taken more than once) Prerequisite: permission of department chair. Special topics in computer engineering.		
510	EMBEDDED SCIENTIFIC COMPUTING	<i>3 credits</i>
Prerequisite: Permission by Instructor. Organization of scientific and engineering problems for computer solutions. Analysis of error and convergence properties of algorithms.		
515	SYSTEM SIMULATION	<i>3 credits</i>
Computer simulation of dynamic systems. Discrete system stability, linear multistep and Runge-Kutta methods, nonlinear systems, stiff systems, distributed systems and real-time computing.		
520	OBJECT ORIENTED DESIGN	<i>3 credits</i>
Investigation of object-oriented design paradigm and the design implementation with the object-oriented programming language C++.		
521	COMPUTER SYSTEMS DESIGN	<i>3 credits</i>
Design of advanced processors at the microarchitecture level. Pipelining. Superscalar, vector and VLIW architectures. Instruction-level parallelism. Compiler support. Multiprocessor architectures.		
522	EMBEDDED SYSTEMS INTERFACING	<i>3 credits</i>
Prerequisite: Permission by instructor. Microcontroller structures and embedded peripherals. Interfaces to physical environments. Software access to peripherals, timers, ADCs and DACs. Synchronous and asynchronous communications. Interrupts. Real-time operating systems.		
523	PROGRAMMABLE LOGIC	<i>3 credits</i>
Electronic circuitry considerations in logic circuits, methods of sequential, threshold logic analysis, synthesis, development of computer arithmetic elements; memory, storage devices,		
527	COMPUTER NETWORKS	<i>3 credits</i>
Network architecture and protocol layering. Network design principles, communication protocols, and performance measures. Socket programming, routing, error detection and correction, access control, multimedia networking.		
540	DIGITAL SIGNAL PROCESSING	<i>3 credits</i>
Signal sampling and reconstruction; data-converter models. Unilateral and bilateral z transforms. Discrete Fourier Transform (DFT); Fast Fourier Transform (FFT). Digital filter structures and design methods.		
562	ANALOG INTEGRATED CIRCUIT DESG	<i>3 credits</i>
CMOS processes and layout; amplifiers, current mirrors, and comparators; current, voltage, and bandgap references; switched capacitor circuits. Frequency and noise analysis techniques.		
567	VLSI CIRCUITS & SYSTEMS	<i>3 credits</i>
Graduate level introduction to VLSI design. MOSFET structures, design rules, and fabrication. Static, dynamic CMOS. PLAs, ROMs, and RAMs. Layout methodologies and tools. System architecture.		
598	ST: COMPUTER ENGINEERING	<i>1-3 credits</i>
(May be taken more than once) Prerequisite: permission of department chair. Special topics in computer engineering.		
606	COMPUTER ARCHITECTURE	<i>3 credits</i>
Historical development of computer architecture. Design methodologies. Processor organization and design of instruction sets. Parallel processing. Control section implementations. Memory organization. System configurations.		
607	PARALLEL COMPUTER ARCHITECTURE	<i>3 credits</i>
Prerequisite: 606 or equivalent. This course provides an introduction to parallel computer architectures and parallel processing based on a single instruction, message-passing, or shared memory.		

620	REAL-TIME SCHEDULING	<i>3 credits</i>
Theory of fixed priority scheduling for real-time systems. Aperiodic, Periodic, and Sporadic Task scheduling.		
642	ADVANCED KNOWLEDGE ENGINEERING	<i>3 credits</i>
Prerequisite: permission of instructor. Advanced study of knowledge acquisition and expert system project management.		
663	VLSI DESIGN & AUTOMATION	<i>3 credits</i>
Prerequisite: 570. Methodologies for automated design of VLSI systems. Computer-aided design tools and algorithms. Design for low power, high performance, testability. Research topics in VLSI design.		
693	SP: COMPUTER ENGINEERING	<i>1-3 credits</i>
(May be taken more than once) Prerequisite: permission of department chair. For a qualified graduate student. Supervised research or investigation in student's major field. Credit depends upon nature and extent of project.		
794	ADVANCED SEMINAR	<i>1-3 credits</i>
(May be taken more than once) Prerequisite: permission of department chair. Advanced level coverage of various topics. Intended for student seeking Ph.D. in engineering.		



Mechanical Engineering (4600)

165	TOOLS FOR MECHANICAL ENGR	<i>3 credits</i>
Corequisite: 3450:149. Personal computer DOS system, word processing, spreadsheet, computer-aided drafting, math calculating package, mechanical graphics, and introduction to mechanical engineering program and curriculum.		
203	DYNAMICS	<i>3 credits</i>
Prerequisite: 3450:222, 3650:291, 4300:201. Corequisite: 3450:223. Kinematics and kinetics of particles and rigid bodies. Principles of work, energy, momentum and impulse.		
260	ENGINEERING ANALYSIS I	<i>2 credits</i>
Prerequisite: 3450:222; corequisite: 3450:223. Introduction to numerical methods in mechanical engineering; applications of computer tools (MatLab).		
300	THERMODYNAMICS I	<i>3 credits</i>
Prerequisite: 3450:223. Corequisite: 3650:292. Basic concepts of thermodynamics. Pure substances, closed and open systems, the first and second laws of thermodynamics. Entropy, vapor power cycles and vapor compression refrigeration.		
301	THERMODYNAMICS II	<i>2 credits</i>
Prerequisites: 300 and 3450:335. Absorption refrigeration. Gas cycles. Thermodynamics of state, gas mixtures and gas-vapor mixtures. Combustion.		
305	THERMAL SCIENCE	<i>2 credits</i>
Prerequisite: 3450:223. Corequisite: 3650:292. Credit not allowed for both 300 and 305. Introduction to first and second laws of thermodynamics, perfect gas relationships, equations of state, cycle analysis. Introduction to conduction, convection and radiation heat transfer.		
310	FLUID MECHANICS I	<i>2 credits</i>
Prerequisites: 203 and 3450:335. Properties and behavior of gases and liquids at rest and in motion. Energy equation. Flow in conduits. Forces on body submerged in moving fluid. Dimensional analysis and similitude.		
311	FLUID MECHANICS II	<i>3 credits</i>
Prerequisite: 310. Navier-Stokes equations. The boundary layer. External viscous flows and potential flow. Fundamentals of compressible flow. Concepts of computational fluid dynamics.		
315	HEAT TRANSFER	<i>3 credits</i>
Prerequisites: 4600:310 or 4800:360; 4600:300; 4600:360 or 4800:220. Fundamentals of heat transfer by conduction, convection and radiation.		
321	KINEMATICS OF MACHINES	<i>2 credits</i>
Prerequisites: 165, 203. Displacements, velocities, accelerations and introduction to plan motion mechanisms. Introduction to design of gears, gear trains and cams.		
336	ANALY OF MECHANICAL COMPONENTS	<i>3 credits</i>
Prerequisite: 4300:202. Corequisite: 3450:335. Analysis of stress and strain at a point. Mohr's circles, shear centers, elastic instability. Stresses in thick and thin cylinders. Fatigue analysis.		
337	DESIGN OF MECHANICAL COMPON	<i>3 credits</i>
Prerequisites: 336. Application of stress analysis to design of fasteners, welds, springs, ball bearings and gears. Introduction to journal bearings and lubrication. Component design projects.		
340	SYSTEMS DYNAMICS & RESPONSE	<i>3 credits</i>
Prerequisites: 203, 3450:335. A unified approach to modeling, analysis, response and stability of engineering systems: analog, digital and hybrid computer simulation of interdisciplinary engineering problems are included.		
360	ENGINEERING ANALYSIS II	<i>2 credits</i>
Prerequisites: 260, 3450:335. Numerical methods of solution of mechanical engineering problems.		
380	MECHANICAL METALLURGY	<i>2 credits</i>
Prerequisites: 3150:153; corequisite: 4300:202. Structures of common metallic materials and study of their macroscopic mechanical behavior. Phase changes and heat treatment. Theories of failure.		
400	THERMAL SYSTEM COMPONENTS	<i>3 credits</i>
Prerequisites: 301, 311, 315. 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.		
402	SENIOR SEMINAR	<i>1 credits</i>
Corequisites: 400, 441, 460, 401 and 461 or 4700:499. Students need further education in ethics, codes and standards, intellectual property, product liability, safety issues, technical writing, diversity, and job opportunities.		
410	HEATING & AIR CONDITIONING	<i>3 credits</i>

Prerequisites: 301 or permission. Corequisite: 315 or permission. Thermodynamics of gas mixtures. Design and selection of air conditioning equipment. Control of gas mixtures, heating, cooling and humidity.

411	COMPRESSIBLE FLUID MECHANICS	<i>3 credits</i>
Prerequisites: 301 and 310. Subsonic and supersonic flow in nozzles, diffusers and ducts. One-dimensional reactive gas dynamics. Prandtl-Myer theory. Applications to design and analysis of compressors, turbines and propulsion devices.		
412	FUNDAMENTALS OF FLIGHT	<i>3 credits</i>
Prerequisite: 311. Introduction to basic aerodynamics, airplane performance, stability and control, astronautics and propulsion. Design considerations are emphasized.		
413	INTRODUCTION TO AERODYNAMICS	<i>3 credits</i>
Prerequisite: 311. Introduction of aerodynamic concepts; includes conformal transformations, theory of thin airfoils, two-dimensional airfoil theory, wings of finite span, lifting line theories, lumped vortex, vortex lattice, and panel methods.		
414	INTRO TO AEROSPACE PROPULSION	<i>3 credits</i>
Prerequisite: 311. Introduction to propulsion systems currently used in aerospace fields; propulsion principles for turbojets, turbofans, ramjets, chemical rockets, and electrical rocket propulsion.		
415	ENERGY CONVERSION	<i>3 credits</i>
Prerequisites: 301 or permission. Corequisite: 315 or permission. Topics from fields of internal combustion engines, cycle analysis, modern conversion devices.		
416	HEAT TRANSFER PROCESSES	<i>3 credits</i>
Prerequisite: 315 or permission. Analysis, design of extended surfaces. Natural convection and mixed convection, combined modes of heat transfer and heat transfer with phase changes.		
420	INTRO TO FINITE ELEMENT METHOD	<i>3 credits</i>
Prerequisite: 315 and 4300:202. Introduction to matrix and finite element methods. Stiffness and flexibility formulations in solid mechanics and thermal sciences. Basic finite element methods and its implementation.		
422	EXPERIMENTAL STRESS ANALYSIS I	<i>3 credits</i>
Prerequisite: 336 or permission. Experimental methods of determining stress or strain: brittle lacquer, strain gages, photoelasticity, full field techniques.		
430	MACHINE DYNAMICS	<i>3 credits</i>
Prerequisite: 321 or permission. Static and dynamic forces in machines, products of inertia, dynamic equivalence, flywheels. Balancing of rotating, reciprocating, cyclic plane motion. Computer simulation of transient mechanism dynamics, other topics in advanced dynamics.		
431	FUND OF MECHANICAL VIBRATIONS	<i>3 credits</i>
Prerequisites: 203 or permission and 3450:335 or permission. Undamped and forced vibrations of systems having one or two degrees of freedom.		
432	VEHICLE DYNAMICS	<i>3 credits</i>
Prerequisites: 203 or permission and 3450:335 or permission. Application of dynamic systems analysis techniques to road vehicles. Newtonian and Lagrangian methods. Tire/road interface. Ride characteristics, handling and stability. Digital simulation.		
440	SYSTEM DYNAMICS & CONTROL	<i>4 credits</i>
See department for course description.		
441	CONTROL SYSTEMS DESIGN	<i>3 credits</i>
Prerequisites: 340 or permission. Methods of feedback control design such as minimized error, root-locus, frequency domain. Compensation techniques. Multivariable and nonlinear design methods and computer-aided control design.		
442	INDUSTRIAL AUTOMATIC CONTROL	<i>3 credits</i>
Prerequisite: 441 or permission. Operation of basic control mechanisms. Study of mechanical, hydraulic, pneumatic, fluidic control systems, including application areas. Tuning of control devices for optimum performance of system. Case studies on control applications from industry, e.g. boilers, furnaces, process heaters.		
443	OPTIMZTN METHODS IN MECH ENG	<i>3 credits</i>
Prerequisite: 360 or permission. Development and method of solution of optimization problems in mechanical engineering. The use of dynamic programming and operational research methods for optimization including computer utilization and applications.		
444	ROBOT DESIGN, CONTROL & APPL	<i>3 credits</i>
Prerequisites: 321 or permission, 441 or permission. Robot design and control. Kinematic transformations, velocities and accelerations, path trajectories and dynamics, control and sensing in robotics. The automated factory with robot applications.		
450	INTRO: COMPUT FLUID FLW & CONV	<i>3 credits</i>
Prerequisites: 315 or permission, 360 or permission. Numerical modeling of fluid/thermal systems; numerical solution of the momentum and thermal boundary layer equations; flow simulation using advanced heat transfer/fluid/graphics packages.		
460	CONCEPTS OF DESIGN	<i>3 credits</i>
Prerequisite: 337. Design process. Creativity and inventiveness. Tools of decision making, engineering economics, reliability, optimization. Case studies.		
461	ME SENIOR DESIGN PROJECT I	<i>2 credits</i>

Corequisites: 400, 441, 460. Detailed senior design project. Design, feasibility, and cost analysis.

462	PRESSURE VESSEL DESIGN	<i>3 credits</i>
Prerequisite: 336 or permission. Introduction to modern pressure vessel technology. Topics include basic structural considerations, materials and their environment and design-construction features.		
463	COMPUTER AIDED DESIGN & MANUFA	<i>3 credits</i>
Prerequisites: 165 or permission, 360 or permission. The use of computer systems to assist in the creation, modification, analysis, or optimization of engineering designs, and to plan, manage, and control manufacturing plants.		
471	ME SENIOR DESIGN PROJECT II	<i>2 credits</i>
Prerequisite: 461. Detailed senior design project. Final design and implementation.		
483	MECHANICAL ENGR MEASURMTS LAB	<i>2 credits</i>
Prerequisites: 300, 310. Corequisite: 340. Development of methods to measure temperature, pressure, flow rate, viscosity and motion. Includes both lecture and laboratory experience and emphasizes calibration and accuracy of appropriate instruments.		
484	MECHANICAL ENGINEERING LAB	<i>2 credits</i>
Prerequisite: 301, 311, 315, 380, 431, 483. Corequisites: 441. Laboratory experiments in area of dynamics, vibrations, thermodynamics, fluids, heat transfer and controls.		
486	ST: MECHANICAL ENGINEERING	<i>1-3 credits</i>
Prerequisite: permission. Brief description of current content to be announced in schedule of classes.		
497	HONORS PROJ IN MECHANICAL ENGR	<i>4 credits</i>
Prerequisite: senior standing in Honors Program. Individual creative project in thermal science, mechanics or design relevant to mechanical engineering, supervised by faculty member of the department.		
498	EXPER INVESTG IN MECHANIC ENGR	<i>1-2 credits</i>
Individual independent laboratory investigations in areas relevant to mechanical engineering. Student suggests a project and makes appropriate arrangements with faculty for supervision.		
500	THERMAL SYSTEM COMPONENTS	<i>3 credits</i>
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.		
510	HEATING & AIR CONDITIONING	<i>3 credits</i>
Prerequisite: permission. Thermodynamics of gas mixtures. Design and selection of air conditioning equipment. Control of gas mixtures, heating, cooling, and humidity.		
511	COMPRESSIBLE FLUID MECHANICS	<i>3 credits</i>
Subsonic and supersonic flow in nozzles, diffusers, and ducts. One-dimensional reactive gas dynamics. Prandtl-Myer theory. Applications to design and analysis of compressors, turbines, and propulsion devices.		
512	FUNDAMENTALS OF FLIGHT	<i>3 credits</i>
Introduction to basic aerodynamics, airplane performance, stability and control, astronautics and propulsion. Design considerations are emphasized.		
513	INTRODUCTION TO AERODYNAMICS	<i>3 credits</i>
Introduction of aerodynamic concepts; conformal transformations, theory of thin airfoils, 2-dimensional airfoil theory, wings of finite span, lifting line theories, lumped-vortex, vortex-lattice, and panel methods.		
514	INTRO TO AEROSPACE PROPULSION	<i>3 credits</i>
Introduction to propulsion systems currently used in aerospace fields; propulsion principles for turbojets, chemical rockets, and electrical rocket propulsion.		
515	ENERGY CONVERSION	<i>3 credits</i>
Prerequisite: permission. Topics from fields of internal combustion engines, cycle analysis, modern conversion devices.		
516	HEAT TRANSFER PROCESSES	<i>3 credits</i>
Prerequisite: permission. Analysis, design of extended surfaces. Natural convection and mixed convection, combined modes of heat transfer with phase changes.		
522	EXPERIMNTL STRESS ANALYSIS I	<i>3 credits</i>
Prerequisite: permission. Experimental methods of determining stress or strain: brittle lacquer, strain gages, photoelasticity, full field thermal techniques.		
530	MACHINE DYNAMICS	<i>3 credits</i>
Prerequisite: permission. Static and dynamic forces in machines, products of inertia, dynamic equivalence, flywheels. Balancing of rating, reciprocating, cyclic plane motion. Computer simulation of transient mechanism dynamics, other topics in advance dynamics.		
531	FUND OF MECHANICAL VIBRATIONS	<i>3 credits</i>
Prerequisite: permission. Undamped and forced vibrations of systems having one or two degrees of freedom.		
532	VEHICLE DYNAMICS	<i>3 credits</i>
Prerequisite: permission. Application of dynamic systems analysis techniques to road vehicles. Newtonian and Lagrangian methods. Tire/road interface. Ride characteristics, handling and stability. Digital simulation.		
540	SYSTEM DYNAMICS & CONTROL	<i>4 credits</i>
Prerequisite: permission. Laplace transforms. Mathematical models of physical systems. Transient response and stability. Error analysis and system accuracy. Root locus methods in design. Frequency analysis and design. Compensation techniques.		

541	CONTROL SYSTEMS DESIGN	<i>3 credits</i>
Prerequisite: permission. Methods of feedback control design such as minimized error, root-locus, frequency domain. Compensation techniques. Multivariable and nonlinear design methods and computer-aided control design.		
542	INDUSTRIAL AUTOMATIC CONTROL	<i>3 credits</i>
Prerequisite: permission. Operation of basic control mechanisms. Study of mechanical, hydraulic, pneumatic, fluidic control systems, including application areas. Tuning of control devices for optimum performance of system. Case studies on control applications from industry, e.g. boilers, furnaces, process heaters.		
543	OPTIMZTN METHODS IN MECH ENG	<i>3 credits</i>
Prerequisite: permission. Development and method of solution of optimization problems in mechanical engineering. The use of dynamic programming and operational research methods for optimization including computer utilization and applications.		
544	ROBOT DESIGN, CONTROL & APPL	<i>3 credits</i>
Prerequisite: permission. Robot design and control. Kinematic transformations, velocities and accelerations, path trajectories and dynamics, control and sensing in robotics. The automated factory with robot applications.		
550	INTRO: COMPUT FLUID FLW & CONV	<i>3 credits</i>
Prerequisite: permission. Numerical modeling of fluid/thermal systems, numerical solution of the momentum and thermal boundary layer equations; flow simulation using advanced heat transfer/fluid/graphics packages.		
562	PRESSURE VESSEL DESIGN	<i>3 credits</i>
Prerequisite: permission. Introduction to modern pressure vessel technology. Topics include basic structural considerations, materials and their environment and design-construction features.		
563	COMPUTER AIDED DESIGN & MANUFA	<i>3 credits</i>
Prerequisite: permission. The use of computer systems to assist in the creation, modification, analysis, or optimization of engineering designs, and to plan, manage, and control manufacturing plants.		
600	GAS DYNAMICS	<i>3 credits</i>
Prerequisite: 511. Derivation of equations for multi-dimensional irrotational flow of a compressible fluid. Method of small perturbations. Method of characteristics. Ideal flow theory. Transonic flow. One dimensional unsteady flow.		
608	THERMODYNAMICS	<i>3 credits</i>
Extension and generalization of basic laws of thermodynamics with application to a variety of physical and biological systems. Introduction to irreversible thermodynamics, the third law and statistical thermodynamics.		
609	FINITE ELEMENT ANALYSIS I	<i>3 credits</i>
Prerequisite: 622. Introductory development of finite element method as applied to various topics from continuum mechanics. Areas covered include plane; axisymmetric and 3-D stress analysis; conduction; fluid mechanics; transient problems and geometric and material nonlinearity.		
610	DYNAMICS OF VISCOUS FLOW I	<i>3 credits</i>
Derivation and solution of equations governing laminar viscous flow. Applications include unsteady flows, slow viscous flows, parallel flows, lubrication theory and laminar boundary layers.		
611	COMPUTATIONL FLUID DYNAMICS I	<i>3 credits</i>
Prerequisite: 610 or permission of instructor. Study of numerical methods in fluids; numerical errors and stability, finite differencing, nonlinear convection terms, Poisson equations, boundary conditions, turbulence, spectral and finite element techniques.		
615	CONDUCTION HEAT TRANSFER	<i>3 credits</i>
Study of one-, two- and three-dimensional heat conduction. Development of analytical techniques for analysis and design.		
616	CONVECTION HEAT TRANSFER	<i>3 credits</i>
Heat transfer from laminar, turbulent external, internal flows. Convective heat transfer at high velocities. Heat transfer to liquid metals; high Prandtl number fluids.		
617	RADIATION HEAT TRANSFER	<i>3 credits</i>
Study of governing radiation laws. Black and real systems, geometric factors, gray enclosures, non-gray systems, gaseous radiation, radiation equipment.		
618	BOIL HEAT TRANSFER&2-PHSE FLOW	<i>3 credits</i>
Current techniques to determine heat transfer and pressure drop in components such as boilers, heat exchangers, and steam generators, with boiling. Boiling mechanism, slip ratio, critical heat flux and instabilities in boiling flow systems.		
620	EXPERIMENTL STRESS ANALYSIS II	<i>2 credits</i>
Prerequisite: 522. Dynamic strain gage methods, transducer design, Moire fringe techniques and topics in photoelasticity.		
621	INTRODUCTION TO TIRE MECHANICS	<i>3 credits</i>
Prerequisite: permission. Topics include tire as vehicle component, tire traction and wear, laminated structures, tire stress and strains and advanced tire models.		
622	CONTINUUM MECHANICS	<i>3 credits</i>
Prerequisite: permission. Analysis of stress and deformation at a point. Derivation of fundamental field equations of fluid and solid mechanics by applying basic laws of dynamics, conservation of mass and energy. Development of constitutive laws.		
623	APPLIED STRESS ANALYSIS I	<i>3 credits</i>

Prerequisite: 622. Continuation of 622 with specific application to solid mechanics. Development of energy theorems due to Reissner, Washizu and generalized Hamilton's principle. Solutions to static and dynamic problems.

624	FUND OF FRACTURE MECHANICS	<i>3 credits</i>
Prerequisite: 622 or permission of instructor. Methods of stress analysis in elastic media containing holes and cracks. Theories of brittle fracture. Dynamic crack propagation. Fatigue fractures. Finite element approaches to fracture mechanics.		
625	ANALYS OF MECHANICAL COMPONENT	<i>3 credits</i>
Theories of failure and plastic flow. Fatigue, creep analysis and introduction to fracture mechanics.		
626	FATIGUE OF ENGINEERING MTRLS	<i>3 credits</i>
Prerequisite: 624 or permission. Quasi-static and cyclic behavior; dislocation networks and their interactions; correlation of dislocation-microstructure interactions; crack initiation; crack propagation; short cracks; crack closure; environmental effects.		
627	ADV MTRLS & MANUFRNG PROCESSES	<i>3 credits</i>
Manufacturing processes for advanced materials; classification; technological aspects of bulk deformation, casting, joining, forming, machining, molding, powder metallurgy, rapid solidification; economic aspects; technical activity.		
628	MECHAN BEHAVIOR OF MATERIALS	<i>3 credits</i>
Prerequisite: permission. Mechanical behavior of engineering materials; metallurgy of deformation; dislocation effects and deformation; strengthening mechanisms; thermomechanical processing; mechanical testing.		
629	NONLINEAR ENGINEERING PROBLEMS	<i>3 credits</i>
Prerequisite: 622. Study of nonlinear ordinary and partial differential equations governing phenomena of mechanics. Analysis of phasespace trajectories, singularities and stability. Development of approximate analytical methods.		
630	VIBRATIONS OF DISCRETE SYSTEMS	<i>3 credits</i>
Prerequisite: 531 or equivalent. Study of vibrations of multidegree of freedom systems including free and forced vibrations, damped and transient response, normal mode vibrations and matrix iteration techniques. application to seismic design and shock design.		
631	KINEMATIC DESIGN	<i>3 credits</i>
Prerequisite: permission of instructor. The geometry of constrained motion. Analysis of relative plane motion using vectors and the digital computer. Curvature theory. Synthesis of linkages and gearing. Introduction to computer-aided design.		
632	RELIABILITY IN DESIGN	<i>3 credits</i>
Prerequisite: 3470:561. The reliability determination of mechanical components and systems and its use in design. Distribution, reliability determination, normal and log-normal theories, Weibull theory, life spectrum analysis, renewal theory and confidence limits.		
633	COMP MODAL ANALY OF STRUCTURES	<i>3 credits</i>
Prerequisite: 630 or equivalent. Modal analysis theory and measurement techniques, digital signal processing concepts, structural dynamics theory, modal parameter estimation with "hands-on" experience in the application of modal measurement methods in vibration analysis.		
634	ADV DYNM OF ROTATING MACHINERY	<i>3 credits</i>
Prerequisite: 530 or equivalent. Dynamic modelling and simulation of complex rotor-bearing systems. Steady state, transient and stability analysis with inertia, gyroscopic, imbalance, rotor-bow, disk-skew and impeller-rub interaction effects.		
635	STRESS WAVES IN SOLIDS & FLUIDS	<i>3 credits</i>
Prerequisite: 531 or equivalent. The wave equation. Propagation of elastic-plastic stress waves through solid media. Transmission, reflection, absorption and diffraction phenomena. Low and high velocity impact. Dynamic fracture. Numerical simulation techniques.		
642	SYSTEM ANALY & CONTROL DESIGN	<i>3 credits</i>
Uniform methods of modeling and response analysis, controllability and observability, stability theory and analysis of linear and nonlinear engineering processes. Design of feedback controls for optimum performance for multivariable real-time control application.		
645	PROC IDENT & COMP CONTRL	<i>3 credits</i>
Prerequisite: permission. Obtaining mathematical models of processing from noisy observations. Methods of digital control design. Case studies on computer control of selected processes.		
646	EXPT SYST IN CONTROLS & MANUFT	<i>3 credits</i>
Prerequisite: 540 or equivalent or by permission. Expert system methodologies for process control, computer integrated flexible manufacturing and robotics.		
647	NEURAL & FUZZY CONTROL SYSTEMS	<i>3 credits</i>
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	TRIBOLOGY	<i>3 credits</i>
Fundamentals of friction lubrication and wear treated; includes basic theory, advanced topics, applications to bearings, seals, gears, cams. Specific topics include adhesive and abrasive friction/wear, boundary lubrication, fluid film lubrication and bearings, rolling element bearings, bearing dynamics.		
655	MICRO- AND NANO-FLUID DYNAMICS	<i>3 credits</i>

Prerequisite: 611 or permission of instructor. The 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-filters, and synthesis of nano-materials.

658	MECH BEH OF NANOSTR MAT & COMP	<i>3 credits</i>
The course is open to students in mechanical engineering, polymer science and polymer engineering, biology and all other engineering disciplines. Some prior consultation with the instructor is encouraged. The course is considered as a graduate elective in ME. An Overview of Lattice Dislocation Theory, Nanostructured Materials: Processing and Properties, Grain Boundaries, Nanoindentation, Electron Microscopy, Atomic Force Microscopy, Carbon Nanotubes, Polymer and Bio-MEMS.		
660	ENGINEERING ANALYSIS	<i>3 credits</i>
Prerequisite: B.S. in engineering. Study of analysis techniques as applied to specific engineering problems. Applications include beam deflections, acoustics, heat conduction and hydrodynamic stability.		
661	FAILURE ANALYSIS OF MECH SYSTM	<i>3 credits</i>
Prerequisites: 4600:625 or permission by instructor. This course emphasizes engineering techniques for predicting yielding, buckling, fracture and fatigue of mechanical systems. Students will be taught how to link theory with practice 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	MICROSCALE HEAT & MASS TRANSFR	<i>3 credits</i>
Prerequisites: 608 and 615 or permission. Kinetics theory, classical and quantum statistics, structure of solids, phonons in solids, free electrons in metals, Boltzmann transport theory, hyperbolic heat conduction, thermal conductivity of thin films, laser materials processing.		
663	WEB-BASD SOLID MODEL & E-MANUF	<i>3 credits</i>
Prerequisite: 563 or equivalent, or permission. Team-based collaborative design with a 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	FUND OF CRYSTALZTN & SOLIDFCTN	<i>3 credits</i>
Prerequisite: 608 or equivalent, or permission. Fundamental theories and modeling of crystalline nucleation and growth, interface stability and morphology, microstructure formation, and microsegregation. Applications in casting, welding, laser processing, and single crystal growth.		
670	INTG FLX CELL MFG SYS-A&D	<i>3 credits</i>
Prerequisite: 563 or equivalent or by permission of instructor. The analysis of integrated computer-aided manufacturing systems, design of automated manufacturing components and simulations of flexible cellular manufacturing systems.		
671	FUNDMNT & APPL - MICRO ELECTRO	<i>3 credits</i>
Prerequisite: consent of instructor. Fundamentals of MEMS based sensors and actuators, MEMS materials, bulk and surface micromachining and MEMS device testing. Applications in optics, automotive, and biomedical instrumentation.		
672	DSGN OF MICROSYS & NANO DEVICE	<i>3 credits</i>
Prerequisite: consent of instructor. Design principles of various micro and nano sensors and actuators, microfluidic devices, microstructure analysis and simulation, microfabrication process design rule. Applications in MOEMS, Lab-on-a-chip devices, BioMEMS and NEMS.		
693	MEAS MTH & EXPR ERROR-THRM SCI	<i>3 credits</i>
Prerequisites: viscous flow, conduction heat transfer convection heat transfer. The course will incorporate elements of experimental error analysis, optics, and optical ray tracing, principles of testing, methods and devices for fluid flow quantization and temperature measurements. Laboratory work with hands-on experience.		
694	DEFORM & FAIL-POLY& SOFT MATRL	<i>3 credits</i>
This course introduces the concepts of deformation, fracture and failure analyses of engineering polymers, soft and biological materials.		
696	ST: MECHANICAL ENGINEERING	<i>1-4 credits</i>
Prerequisite: Permission. For qualified candidate for graduate degree. Supervised 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	<i>2 credits</i>
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	MAS RES: MECHANICAL ENGR	<i>1-6 credits</i>
Prerequisite: Permission of advisor. (May be repeated.) Research on a suitable topic in mechanical engineering culminating in a master's thesis.		
699	MASTERS THESIS	<i>1-6 credits</i>
Prerequisite: permission of advisor. (May be repeated). Supervised research in a specific area of mechanical engineering.		
704	FINITE ELEMENT ANALYSIS II	<i>3 credits</i>
Prerequisites: 609, 4300:702. Curved, plate, shell, brick elements; quasi-analytical elements. Quadrature formulas. Substructuring for static and dynamic analysis. Solution algorithms for linear and nonlinear static and dynamic analysis. Computer program formulation. Review of large-scale production programs.		
705	FINITE ELEMENT ANALYSIS III	<i>3 credits</i>

Prerequisite: 704. Static and dynamic contact problems. Tire mechanics. Fracture mechanics. Plasticity problems involving small and large deflections. Shake down analysis. General constitutive models for composite media, thermoviscoelasticity, fluid turbulence. Fluid-solid interaction analysis.

710	DYNAMICS OF VISCOUS FLOW II	<i>3 credits</i>
Prerequisite: 610. Introduction to turbulence. Turbulence modeling and turbulent boundary layers. Practical methods of solution of boundary layer problems. Transition process.		
711	COMP FLUID DYNAMICS II	<i>3 credits</i>
Prerequisite: 611 or permission of instructor. Development of advanced computational techniques for convection-dominated flows. Higher order explicit and implicit schemes including nonoscillatory front-capturing methods applied to benchmark problems.		
715	HYDRODYNAMIC STABILITY	<i>3 credits</i>
Prerequisites: 660, 620 or permission. Stability concepts, Stability of Benard convection, Rayleigh-Taylor flow, parallel shear layers, boundary layers, asymptotic solution of Orr-Sommerfeld equation, nonparallel stability.		
719	ADVANCED HEAT TRANSFER	<i>3 credits</i>
Prerequisites: 615, 616. Topics include nonhomogeneous or nonlinear boundary value problems 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	<i>3 credits</i>
Prerequisite: 623. Continuation of 623. Development of approximate solution techniques including finite elements, method of weighted residuals (Rayleigh-Ritz, Galerkin, Trefftz, collocation, least squares, etc.) and finite differences.		
726	NON-LINEAR CONTINUUM MECHANICS	<i>3 credits</i>
Prerequisite: 622. Finite deformation and strain, stress, constitutive equations, strain energy functions. Solution of finite deformation problems in hypoelasticity, coupled thermoviscoelasticity and plasticity, electroelasticity and micropolar theories.		
730	VIBRATIONS OF CONTINUOUS SYSTEM	<i>3 credits</i>
Prerequisite: 630. Continuation of 630. Analysis of continuous vibrating systems, using separation of variables, energy, variational, Rayleigh-Ritz and other approximate techniques. Concepts and solutions of integral equations as applied to continuous systems.		
732	ADV MODAL ANALY OF STRUCTURES	<i>3 credits</i>
Prerequisite: 633 or equivalent. Structural excitation techniques. Modal parameter estimation. System modification; mass/stiffness/damping matrices substructuring. Prediction and evaluation of structural modified dynamic characteristic.		
741	OPTIMIZTN THEORY & APPLICATNS	<i>3 credits</i>
Prerequisite: permission. Theory of optimization in engineering systems, development and method of solution optimization problems for physical processes, large systems. Use of dynamic programming, operational research methods of system optimization, control.		
763	ADV METHD IN ENGINEERING ANALY	<i>3 credits</i>
Applications of finite difference and finite element methods, variational methods, integral methods and similarity transforms to engineering problems in heat transfers, fluid mechanics and vibrations.		
790	ADV SEM: MECHANICAL ENGR	<i>1-4 credits</i>
(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 student seeking Ph.D in engineering degree.		
898	PRELIMINARY RESEARCH	<i>1-15 credits</i>
Prerequisite: approval of dissertation director. Preliminary investigations prior to the submission of a dissertation proposal to the Interdisciplinary Doctoral Committee.		
899	DOCTORAL DISSERTATION	<i>1-15 credits</i>
(May be taken more than once.) Prerequisite: acceptance of research proposal by the Interdisciplinary Doctoral Committee and approval by the dissertation director. Original research by the doctoral student.		



Mechanical Polymer Engineering (4700)

281	POLYMER SCI FOR ENGINEERS	<i>2 credits</i>
Prerequisites: 3150:151 and 3150:152. Chemical bonds and structure of organic molecules, polymer chain structure, amorphous and crystalline morphology and structural characterization, polymerization and copolymerization, experimental demonstrations, typical solid-state and flow properties.		
321	POLYMER FLUID MECHANICS	<i>3 credits</i>
Prerequisite: 4600:310 or equivalent. Rheological properties and flow characteristics of polymer fluid systems; non-Newtonian viscosity, viscoelasticity.		
381	POLY MORPH FOR ENGINEERS	<i>3 credits</i>
Prerequisites: 3150:151, 3650:292, 4600:380 or permission. Fundamental understanding of solid structure, crystallography and morphology, processed polymers, co-polymers and their blends.		
422	POLYMER PROCESSING	<i>3 credits</i>
Prerequisites: 321 and 4600:315 or equivalent. Polymer processing technology. Basic studies of flow in extrusion, molding, and other processing methods.		
425	INTRO: BLEND & COMP POLYRS	<i>3 credits</i>
Prerequisites: 4200:321 or 4300:341 or 4600:310 or permission. Nature of polymer blends and compounds and their applications. Preparation and technology using batch and continuous mixers, mixing mechanisms.		
427	MOLD DESIGN	<i>3 credits</i>
Prerequisites: 422 or permission. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.		
450	ENGR PROPERTIES OF POLYMERS	<i>3 credits</i>
Prerequisites: 281, 381 and 4600:336 or equivalent. Introductory course to engineering properties and processing of polymers. Analysis of mechanical tests of polymers in the glassy, rubbery, and fluid states. Product design. Concepts of rheology, rheometry and polymer processing.		
451	POLYMER ENGINEERING LAB	<i>2 credits</i>
Prerequisite: 321 and 4600:483. Corequisite: 422 or permission. Laboratory experiments on the rheological characterization of polymer melts, fabrication of engineering products, structural investigation of polymeric parts.		
497	HONORS PROJECT	<i>2 credits</i>
Prerequisite: Senior standing in the Honors Program. Individual creative project in mechanical polymer engineering, supervised by faculty member of the department. This course must be designed oriented if used in place of 4700:499.		
499	POLYMER ENGR DESIGN PROJECT	<i>2 credits</i>
Prerequisite: Senior standing and permission. Corequisite: 4600:400. Analysis and design of mechanical polymer systems.		



Biomedical Engineering (4800)

101	TOOLS FOR BIOMED ENGINEERING	<i>3 credits</i>
Corequisite: 3450:149. Introduction to Biomedical Engineering. Personal computers, word processing, spreadsheets, mathematical computational software and computer aided drafting.		
111	INTRO: BIOMEDICAL ENGR DESIGN	<i>3 credits</i>
Prerequisites: 101 or permission. Students will be introduced to the interdisciplinary nature of Biomedical Engineering research and design through the use of lectures, discussions, homework and design projects.		
201	BIOMED ENGR SOPHOMORE SEMINAR	<i>1 credits</i>
Prerequisites: 101, sophomore standing or above. A seminar format to allow students to learn about current research and careers in Biomedical Engineering. Topics in technical communications will also be covered.		
210	STATSTCL METHDS IN BIOMED ENGR	<i>3 credits</i>
See department for course description. **Course not approved in EN-98-01 per department (12-05-05).		
220	BIOMEDICAL COMPUTING	<i>3 credits</i>
Prerequisites: 101, 3450:223. Programming in BASIC and Visual Basic for data acquisition, analysis and display. Object-oriented programming using biomedical engineering examples. High-level processing and display techniques using MATLAB.		
305	INTRO: BIOPHYSICAL MEASUREMNTS	<i>4 credits</i>
Prerequisites: 101 and 4400:231 or 4400:307. Corequisite: 3100:202. Biomedical Engineering involves measurement of Physiological processes in living organisms. An understanding of the variety of instruments used and the limitations are introduced.		
310	MODEL & SIM OF BIOMED SYS	<i>3 credits</i>
Prerequisite: 3450:335. Modeling and simulation of physiological systems and their interactions with therapeutic devices, such as the artificial kidney.		
325	DESIGN OF MEDICAL DEVICES	<i>3 credits</i>
Prerequisites: Junior/senior standing in the College of Engineering, the College of Polymer Science and Engineering or the College of Arts and Sciences. Design of Medical Devices, design criteria, human factors, patient care and monitoring devices, surgical devices, bench testing and legal liability.		
360	BIOFLUID MECHANICS	<i>3 credits</i>
Prerequisites: 3450:335, 3150:133, 3650:292, and 4600:203. Introduction to the fundamentals of fluid mechanics and their application to biological, cardiovascular, respiratory and other biofluid systems.		
365	MECHANICS OF BIOLOG TISSUES	<i>3 credits</i>
Prerequisites: 4300:202 and 3450:335. The mechanical properties of musculoskeletal tissues are presented along with modeling techniques and testing procedures. Tendons, ligaments, muscles, cartilage and bone will be addressed.		
370	BIOMECH OF HUMAN MOVEMENT	<i>3 credits</i>
Prerequisites: 3100:202 and 4600:203. The application of engineering mechanics and anatomy to study and analyze human movement. Lectures and in-class labs will introduce students to experimental and theoretical techniques.		
400	BIOMATERIALS	<i>3 credits</i>
Properties of Materials used in medicine and their interaction with biological materials will be discussed. Biocompatibility issues, material degradation, biomaterials testing will also be discussed.		
409	INTRO: BIOMED ENGINEERING RSCH	<i>3 credits</i>
Application of engineering principles to local area medical research. Includes biomaterials, orthopedics, artificial organs, biostereometrics, biometrics, biological signal and image analysis, biomechanics and computers in medicine.		
420	BIOMD SIGNAL & IMAGE PROC	<i>3 credits</i>
Prerequisites: 4400:163, 343. Introduction to the basic problems associated with biological signal and image processing applications, and appropriate approaches to dealing with them.		
422	PHYSIOLOGICAL CONTROL SYSTEMS	<i>3 credits</i>
Prerequisites: 3100:202, 3450:335. The basic techniques employed in control theory, systems analysis and model identification as they apply to physiological systems.		
430	DESIGN OF MED IMAGING SYS	<i>3 credits</i>
Prerequisites: 3100: 200, 3650:292, 4400:343,353, 4800:305, or permission of instructor. Physical principles and engineering design of medical imaging systems, with emphasis on digital radiography, computed tomography, nuclear medicine, ultrasound and magnetic resonance.		
435	IMAGE SCIENCE	<i>3 credits</i>

Prerequisites: 3100:200, 3650:292, 4400:343 or by permission of instructor. Principles of image science, image performance parameters and image assessment techniques of medical imaging systems, with emphasis on digital radiography, tomographic imaging, ultrasound and magnetic resonance.

437	PHYSICS OF MEDICAL IMAGING	<i>3 credits</i>
Prerequisites: 3100:200, 3650:292, 4400:353, 4800:305. Physical principles of medical imaging modalities with emphasis on the properties, generation mechanisms and interaction of radiation with matter, physics of the image formation and optimization.		
440	ADVANCED BIOMATERIALS	<i>3 credits</i>
Prerequisite: 400. The interactions between biomaterials and medical devices will be analyzed with respect to their potential activation of biological mechanisms.		
445	EXP TECH - BIOMAT TISSUE ENGR	<i>3 credits</i>
Prerequisite: 440. Laboratory experience that applies engineering concepts and practices to the analysis of biomaterials and tissue engineering.		
460	EXPERMNTL TECH IN BIOMECHANICS	<i>3 credits</i>
Prerequisites: 3150:153, 3450:335, 3650:292, 4600:203 or by permission of instructor. Principles of testing and measuring devices commonly used for biofluid and biosolid mechanics studies. Laboratories for demonstration and hands-on experience.		
470	HUMAN FACTORS ENGINEERING	<i>3 credits</i>
Reliability and human error, human capabilities and limitations, crew protection, display systems, controls and controlling actions, interface design principles, risk management, Safety and accident prevention.		
485	ST: BIOMEDICAL ENGINEERING	<i>1-3 credits</i>
Prerequisite: permission of advisor. Directed individual or group research or study in the student's field of interest. Topic subject to approval of advisor.		
491	BIOMEDICAL ENGR DESIGN I	<i>2 credits</i>
Prerequisite: 111. Corequisite: 305. The design process will be further discussed utilizing case studies and detailed biomedical engineering design projects.		
492	BIOMEDICAL ENGR DESIGN II	<i>2 credits</i>
Prerequisite: 491. The design process will be further discussed utilizing detailed biomedical engineering design projects. Projects will be required to be interdisciplinary in nature.		
522	PHYSIOLOGICAL CONTROL SYSTEMS	<i>3 credits</i>
Prerequisite: 3100:202 and 3450:335. The basic techniques employed in control theory, systems analysis, and model identification as they apply to physiological systems.		
530	DESIGN OF MED IMAGING SYS	<i>3 credits</i>
Prerequisites: 3100:200; 3650:292; 4400:343, 353; 4800:305; or by permission of instructor. Physical principles and engineering design of medical imaging systems, with emphasis on digital radiography, computed tomography, nuclear medicine, ultrasound and magnetic resonance.		
535	IMAGE SCIENCE	<i>3 credits</i>
Prerequisites: 3100:200, 3650:292, 4400:343, or by permission of the instructor. Principles of image science, image performance parameters and image assessment techniques of medical imaging systems, with emphasis on digital radiography, tomographic imaging, ultrasound and magnetic resonance.		
537	PHYSICS OF MEDICAL IMAGING	<i>3 credits</i>
Prerequisites: 3100:200, 3650:292, 4400:353, 4800:305. Physical principles of medical imaging modalities with emphasis on the properties, general mechanisms and interaction of radiation with matter, physics of the image formation and optimization.		
560	EXPERMNTL TECH IN BIOMECHANICS	<i>3 credits</i>
Prerequisites: 3150:153, 3450:335, 3650:292, 4600:203 or by permission. Principles of testing and measuring devices commonly used for biofluid and biosolid mechanics studies. Laboratories for demonstration and hands-on experience.		
570	HUMAN FACTORS ENGINEERING	<i>3 credits</i>
Reliability and human error, human capabilities and limitations, crew protection, display systems, controls and controlling actions, interface design principles, risk management, Safety and accident prevention.		
600	BME GRADUATE COLLOQUIUM	<i>1 credits</i>
(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.		
601	BIOMEDICAL INSTRUMENTATION I	<i>4 credits</i>
Prerequisites: 3100:561, 562, and 4400:232 or 4400:320. Clinical instrumentation to measure and display physiologic and anatomic parameters. Basic concepts of instrumentation including design criteria and operational analysis. Practical experience gained through the use of instrumented mammalian models.		
611	BIOMETRY	<i>3 credits</i>
Statistics and experimental design topics for the biomedical and biomedical engineering disciplines including: distributions, hypothesis testing and estimation, ANOVA, probit analysis and nonparametrics statistics.		
620	NEURAL NETWORKS	<i>3 credits</i>
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 serial machines and applications for which neural networks seem most promising will be examined.		

621	SENSORY SYSTEMS ANALYSIS	<i>3 credits</i>
Prerequisite: 4400:371 or equivalent, or by permission. Study of various sensory modalities from a systems engineering perspective. Techniques from linear and nonlinear systems analysis are applied to aspects of vision, hearing, touch, and position sensing in humans. Comparisons are made with artificial emulations of these senses.		
623	PROC OF BIOMED SIGNALS	<i>3 credits</i>
Prerequisites: graduate standing in the College of Engineering and 611 or equivalent. Concepts for the analysis of biological continuous signals and point processes including discriminant and principal component analysis, histograms, correlograms and data displays.		
624	IMAGE PROC FOR BIOMEDICAL DATA	<i>3 credits</i>
Image sampling, quantization, and transforms. Enhancements including smoothing and sharpening. Restoration using inverse and Wiener filters. Edge detection and thresholding with region growing for segmentation.		
627	ADVANC-DRUG & GENE DELIVERY SYS	<i>3 credits</i>
This course will examine technological innovations for the delivery of drugs and genes. Methods of introducing drugs and genes into the body, modeling drug transport, and metabolic responses of cells and organs will be analyzed.		
630	BIOMEDICAL COMPUTING	<i>3 credits</i>
Prerequisite: 4100:206 or equivalent. Computer applications in health care, clinical laboratories, AMHT, medical records, direct order entry, A-D, D-A conversion, patient monitoring, peripherals and interfaces, diagnostic algorithms, automated EEG, ECG systems.		
632	DIAGNOSTIC IMAGING TECH	<i>3 credits</i>
Advanced Diagnostic Imaging techniques as applied to Digital Radiography, Computed Tomography (CT), nuclear medicine, ultrasound imaging, magnetic resonance imaging (MRI), microwaves and optical confocal microscopy.		
633	BIOMEDICAL OPTICS	<i>3 credits</i>
Application of lightwave principles and optical fibers on the engineering design and development of instrumentation, techniques, and applications for medical diagnostic imaging, and treatment of disease.		
634	MEDICAL IMAGING DEVICES	<i>3 credits</i>
Imaging modalities including radiation, magnetic resonance, and sound. The formation of images. Specific devices including computer tomography, magnetic resonance, ultrasound, gamma cameras and PET.		
635	BIOMEDICAL NANOTECHNOLOGY	<i>3 credits</i>
Prerequisite: permission of instructor. Engineering principles of nanotechnology as applied to the design of instrumentation, systems and techniques, aimed to explore biomolecules and biomaterials at the microscopic level, at one billionth of a meter.		
640	SPINE MECHANICS	<i>3 credits</i>
Prerequisites: 3100:561 or equivalent; 4300:406 or equivalent; or permission. Physical properties and functional biomechanics of the spine. Kinematics and kinetics of the human spine. Biomechanics of scoliosis, trauma, instability, pain, and orthoses. Mechanics and design of surgical implants.		
641	SOFT CONNCTVE TISSUE BIOMECHAN	<i>3 credits</i>
Prerequisites: 3100:561 or equivalent; 4300:407 or equivalent; or permission. Physical properties and functional biomechanics of ligament, tendon, joint-capsule insertions, myotendinous junction, articular cartilage and meniscus. The mechanics of injury, repair, and replacement for accelerated repair and improved function.		
642	HARD CONNCTVE TISSUE BIOMECHAN	<i>3 credits</i>
Prerequisites: 3100:561 or equivalent; 4300:407 or equivalent; or permission. Physical properties and functional biomechanics of bone. The biology and mechanics of fracture and fracture healing. Mechanics of external and internal fixators. Total joint implants and reconstruction techniques.		
644	MUSCLE MECHANICS&OPTIMIZATION	<i>3 credits</i>
Prerequisite: Graduate standing in the College of Engineering or by permission. Human body joint kinetics, muscle mechanics and modelling. The principles of optimization as applied to muscle forces, along with muscle anatomy and physiology.		
645	MECHANICS IN PHYSIOL & MEDCNE	<i>3 credits</i>
Prerequisites: 4600:310 and 4300:202 or equivalent. 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	KINEMATICS OF HUMAN BODY	<i>3 credits</i>
Prerequisites: 4600:321 or equivalent, 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	<i>3 credits</i>
Analysis of blood pumping action, pressure/flow waveforms and transmission through circulation and blood rheology factors. Use of various modeling and measurement techniques. Clinical implications related to disease.		
651	CARDIOVASCULAR DIAGNOSTIC TECH	<i>3 credits</i>
Prerequisites: 3100:561, 562 or equivalent. Cardiovascular disease conditions, instrumentation and techniques (both invasive and noninvasive) used for diagnosis. Direct interaction with active clinical laboratories.		
652	CARDIOVASCULR THERAPEUTIC TECH	<i>3 credits</i>
Prerequisite: 651. Cardiovascular therapeutic devices and procedures for correction of congenital defects, valve failure, heart and arterial bypass grafting and less invasive catheter-based procedures.		
653	TRANSP PHEN BIOLOGY & MEDICINE	<i>3 credits</i>

Prerequisites: 4200:321, 322 or 4600:310, 315 or equivalent. Basic definitions, cardiovascular mass and momentum transport, compartment modeling, mass transfer in physiological systems and artificial kidney and lung devices, Design optimization. Analysis of human thermal system.

655	REHABILITATION ENGINEERING	<i>3 credits</i>
Prerequisites: graduate standing in engineering, mathematics, or science; or permission of the instructor. Devices for rehabilitation, interfacing the motor and/or sensory impaired, quantitative assessment techniques, prosthetics and orthotics, bedsores mechanics, emerging technologies.		
660	BIOMATERIALS & LABORATORY	<i>4 credits</i>
Corequisite: Biomaterials Laboratory. Material uses in biological applications. Effect of physiological environment and sterilization on materials. Controlled and uncontrolled degradation. Effect of materials on soft tissue, hard tissue and blood. Laboratory experiments using materials designed for biomedical use and demonstrations of biological/materials interactions.		
661	ADVANCED BIOMATERIALS	<i>3 credits</i>
Prerequisite: 660 or permission of instructor. The objective of this course is to provide the fundamental understanding of the host responses when exposed to various implantable devices and biomaterials. Methods for testing biocompatibility will be analyzed.		
663	ARTIFICIAL ORGANS	<i>3 credits</i>
Prerequisites: graduate standing in the College of Engineering or permission of instructor. Study of the rationale for the engineering and clinical aspects required for the design and variety of artificial organs, with emphasis on the artificial heart and artificial kidney.		
665	BIOMATERIALS & TISSUE ENGR MTD	<i>3 credits</i>
Prerequisite: 660; Corequisite: 661; or permission of the instructor. This course is design to equip students with knowledge and skills to evaluate biomaterials and to design scaffolds for tissue engineering. Analytical techniques include principles of microscopy, cell culture techniques, and biocompatibility testing.		
670	MATH MODEL-BIOLOGY & MEDICINE	<i>3 credits</i>
Prerequisites: graduate standing in engineering, mathematics, or physics; or permission of instructor. Modeling of pharmacokinetic, cardiovascular, neuromuscular, and immune systems, and artificial organ interactions. Deterministic and stochastic approaches.		
685	MEDICAL DEVICE & ARTFCL ORGANS	<i>3 credits</i>
Prerequisites: graduate standing in engineering, mathematics, or science; or permission of instructor. Design of medical devices and artificial organs, requirements, safety considerations, tissue constraints, optimization techniques, government regulations, and legal liability.		
697	ST: BIOMEDICAL ENGINEERING	<i>1-4 credits</i>
(May be repeated.) Specialized areas of study as defined by the instructor.		
698	MASTERS RESEARCH	<i>1-6 credits</i>
Prerequisite: Permission of advisor. (May be repeated.) Research on a suitable topic in biomedical engineering culminating in a master's thesis.		
699	MASTERS THESIS-BIOMEDICAL ENG	<i>1-6 credits</i>
Prerequisite: permission of advisor. (May be repeated) Supervised research in a specific area of biomedical engineering.		
730	FAB & DESIGN MICROSENSORS	<i>3 credits</i>
Sensing principles, fabrication, and engineering design of microsensors for diagnostic, monitoring, and analytical biomedical applications.		
735	IMAGING DETECTORS & SENSORS	<i>3 credits</i>
An introductory course designed to develop a deep knowledge of detector and sensing systems for Medical Imaging and Diagnostic Applications.		
898	PRELIMINARY RESEARCH	<i>1-15 credits</i>
(May be repeated) Prerequisite: Approval of the dissertation director. Preliminary investigations prior to the submission of a dissertation proposal to the Interdisciplinary Doctoral Committee.		
899	DOCTORAL DISSERTATION	<i>1-15 credits</i>
Prerequisite: acceptance of research proposal by the Interdisciplinary Doctoral Committee and approval of the dissertation director. (May be repeated) Original research by the doctoral student.		



Aerospace Systems Engineering (4900)

165	TOOLS FOR AEROSPACE SYS ENGR	<i>2 credits</i>
Prerequisite: Permission. Corequisite: 3450:149. Computer applications, spreadsheets, CAD software, MATLAB, and introduction to aerospace engineering program and curriculum; outside speakers; project involving design and construction of small RC aircraft.		
166	AEROSPACE SYSTEMS PROJECT MGMT	<i>1 credits</i>
Prerequisite: 165. Teamwork and project planning; semester project involving continuation of design and construction of small RC aircraft in conjunction with SAE Aero Design.		
240	AEROSPACE SYSTEMS ENGR I	<i>3 credits</i>
Prerequisite: 3450:223. An introductory systems course focusing on systems thinking, systems engineering tools, reliability, life-cycle analysis and statistics.		
320	AEROSPACE SYSTEMS ENGR II	<i>3 credits</i>
Prerequisites: 240, 4600:340. An extended study of systems topics including linear programming, optimization, decision making, critical path scheduling, and verification.		
336	AEROSPACE STRUCTURES	<i>3 credits</i>
Prerequisites: 4300:202, 3450:335. Basic theory and methods for analysis and design of aerostructures are covered. Topics include torsion, shear flow, buckling, fracture, and fatigue of beams and plates.		
340	AVIONICS I	<i>3 credits</i>
Prerequisite: 4400:307. Electronics for aircraft applications. Amplifiers, filters, regulators, current sources, buffers, sensor and actuator circuits, transmitters, and receivers.		
380	AEROSPACE MATERIALS	<i>3 credits</i>
Prerequisites: 3150:151,152, 4300:202 or permission. Theory in science and application of materials for aerospace structures, macroscopic behavior of materials, order and disorder in mechanical behavior, evaluating and quantifying mechanical response.		
420	OBJECT ORIENTED DESIGN & MGMT	<i>3 credits</i>
Prerequisite: 320. An introduction to the area of object-oriented design and management of systems, including abstraction, inheritance, polymorphism, dynamic interactions, hierarchies, patterns, reflection, and distributed objects.		
440	AVIONICS II	<i>3 credits</i>
Prerequisites: 340, 4600:412. Communication and control for aircraft applications. Fourier analysis, AM and FM principles, modulators demodulators, communication systems. aircraft system dynamics, classical control system principles and applications.		
450	AEROSPACE COMPUTATIONS	<i>3 credits</i>
Prerequisites: 4300:202, 4600:315, 360, 411 or permission of instructor. Introduction to finite element and finite volume methods in aerospace engineering; fundamental principles of FEM and FVM discussed and illustrated through structural, and aerodynamic applications.		
460	AEROSPACE SYSTEM MANUFACTURING	<i>3 credits</i>
Prerequisites: 4600:360 or equivalent or permission of instructor. Using computer systems to assist in creation, modification, analysis, or optimization of engineering designs, planning, management and control of manufacturing, CAD software with manufacturing applications.		
490	AEROSPACE DESIGN PROJECT	<i>2 credits</i>
Prerequisite: Senior standing or permission. Detailed senior design project. Design, feasibility and cost analysis, final design and implementation; engine, airframe and aerodynamic testing.		
497	AEROSPACE HONORS PROJECT	<i>2 credits</i>
Prerequisite: Senior standing in Honors College or permission. Individual creative project in Aerospace Systems, supervised by faculty member of the department. Includes design, feasibility and cost analysis, final design and implementation.		



College of Education

- [Cooperative Education \(5000\)](#)
- [Educational Foundations \(5100\)](#)
- [Educational Administration \(K-12\) \(5170\)](#)
- [Educational Administration \(Higher Education\) \(5190\)](#)
- [Early Childhood Education \(5200\)](#)
- [Middle Level Education \(5250\)](#)
- [Secondary Education \(5300\)](#)
- [Postsecondary Technical Education \(5400\)](#)
- [General Education \(5540\)](#)
- [Curriculum & Instruction \(5500\)](#)
- [Physical Education \(5550\)](#)
- [Outdoor Education \(5560\)](#)
- [Health Education \(5570\)](#)
- [Educational Guidance and Counseling \(5600\)](#)
- [Special Education \(5610\)](#)
- [School Psychology \(5620\)](#)
- [Special Education Programs \(5800\)](#)



Cooperative Education (5000)

301

COOPERATIVE EDUCATION

0 credits

(May be repeated) For cooperative education students only. Work experience in business, industry or governmental agency. Comprehensive performance evaluation and written report required.



Educational Foundations (5100)

150	DEMOCRACY & EDUCATION	<i>3 credits</i>
Based on an interdisciplinary inquiry, this course examines varied theories and practices of democratic education.		
200	INTRODUCTION TO EDUCATION	<i>3 credits</i>
Prerequisite: 13-15 sem. hrs. of specific GenEd courses; FBI/BCI background checks. Introduction to the teaching profession designed to explore the purposes of schools in society and what is required to be an effective teacher today. This course will include 10 field hours field observation in an urban setting.		
205	FUND EDUC COMPUTER SKILLS	<i>1 credits</i>
Elective Course: Computer skills for education majors with little or no computer experience. Includes word processing, databases, graphics and communications. Cannot substitute for any required course.		
210	CHARACTERISTICS OF LEARNERS	<i>3 credits</i>
Prerequisite: Completion of all College of Education program admission requirements; Corequisite: 211. Describe cognitive, psychosocial, physical, language, and moral development of learners Pre-K through adult. Identifies learner needs, roles of teachers and schools in fostering optimal development. (10 hours of field experience included.)		
211	TEACHING & LEARNING STRATEGIES	<i>3 credits</i>
Prerequisite: Completion of all College of Education admission requirements; Corequisite: 210. From course content and activities, students will recognize, select, and practice various instructional models. Students will acquire and apply appropriate learning and motivational strategies. (10 hours of field experience included.)		
220	EDUCATIONAL PSYCHOLOGY	<i>3 credits</i>
Prerequisite: 13-15 sem. hrs. of specific GenEd courses; 5100:200 (may be taken as prerequisite or corequisite); FBI/BCI background checks. Focuses on the developmental influences and characteristics of learners, and psychological principles pertaining to teaching and learning processes, motivation and self-regulation in learners. This course will include 10 hours of field observation in a suburban school setting.		
300	ED EQTY & EXC IN CULT PL SOCTY	<i>3 credits</i>
Prerequisites: 5100:200, 220, 5500:230, 5610:225. Corequisite with or prerequisite to 5500:360. Engages teacher candidates in inquiry-based seminars and service learning that facilitate their developing pedagogical competence implementing equity and excellence in education.		
330	EARLY ADOLESCENT LEARNER	<i>3 credits</i>
Study of issues in adolescent development, particularly as it relates to educational settings. Physical, cognitive, language, emotional, social, and moral development in learners 8-14 years old.		
410	PROF ISSUES IN EDUCATION	<i>3 credits</i>
Prerequisites: 5500:310, 311, 320, 330. Course work applies social and philosophical foundations of education to current and historical issues in education with attention to roles and responsibilities of contemporary teachers.		
420	INTRO: INSTRUCTIONAL COMPUTING	<i>3 credits</i>
Prepares the student in the use of instructional technologies in educational and business settings. Segments of the course are offered in an online format.		
430	SR HONORS PROJECT: FOUNDATIONS	<i>1-6 credits</i>
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.		
480	ST: EDUCATIONAL FOUNDATIONS	<i>1-4 credits</i>
(May be repeated with a change in topic) Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.		
490	W: EDUC FOUNDATIONS&LEADERSHIP	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
491	W: EDUC FOUNDATIONS&LEADERSHIP	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
492	W: EDUC FOUNDATIONS&LEADERSHIP	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
494	ED INST: ED FOUNDATNS&LEADRSHP	<i>1-4 credits</i>
Special course designed as in-service upgrading programs.		
497	INDEPENDENT STUDY	<i>1-3 credits</i>

(May be repeated for a total of six credits) Prerequisites: permission of department head and instructor. Specific area of study determined in accordance with program and professional goals.

520	INTRO: INSTRUCTIONAL COMPUTING	<i>3 credits</i>
Prepares the student in the use of instructional technologies in educational and business settings. Segments of the course are offered in an online format.		
590	W: EDUC FOUNDATIONS&LEADERSHIP	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
591	W: EDUC FOUNDATIONS&LEADERSHIP	<i>1-3 credits</i>
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592	W: EDUC FOUNDATIONS&LEADERSHIP	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
594	ED INST: ED FOUNDATNS&LEADRSH	<i>1-4 credits</i>
Special course designed as in-service upgrading programs, frequently provided with the support of curriculum units.		
600	PHILOSOPHIES OF EDUCATION	<i>3 credits</i>
Examination of basic philosophical problems underlying broad educational questions that confront society. Provides foundation for understanding of questions of modern society and education.		
602	COMPARATIVE & INTERNATL EDUCTN	<i>3 credits</i>
Comparative study of selected national school systems with reference to forces that shape their characteristics. Different theoretical approaches used in study of comparative education also investigated.		
604	TOP SEM: CULTRL FNDTNS OF EDUC	<i>3 credits</i>
(May be repeated for a total of six credits) Issues and subjects related to study of educational institutions, theories and/or ideas. Different topics will be offered from section to section. Delivered in face to face web enhanced format and fully online format.		
610	INTRO TO STATS IN HUMAN SVCS	<i>3 credits</i>
Applying basic statistical concepts and use statistics to address real world problems in social science		
620	PSYCH OF INST FOR TCH & LRN	<i>3 credits</i>
Current theories and research in the areas of cognition and learning, development, and motivation that underlay approaches to teaching in any context.		
624	SEM: EDUCATIONAL PSYCHOLOGY	<i>3 credits</i>
In-depth study of research in selected areas of learning, development, evaluation, and motivation. Offered in face-to-face and online formats.		
629	FUNDAMENTALS OF E-LEARNING	<i>1 credits</i>
The nature, purpose, history and philosophy of e-learning will be explored thorough examination of associated trends and issues. Establishment of a learning community will be addressed in the face-to-face course component. E-learning course/certificate overviews will be discussed.		
630	TOP SEM: COMPUTER-BASED EDUC	<i>3 credits</i>
(May be repeated for a total of six credits. Advanced topics related to development, implementation, research and evaluation in C.B.E. Student involvement emphasized, required. Knowledge of programming language recommended.		
637	PHILOSOPHIES OF EDU TECHNOLOGY	<i>3 credits</i>
To introduce students to the many philosophies of educational technologies and the manner in which information technology especially influences our pedagogy.		
640	TECHNIQUES OF RESEARCH	<i>3 credits</i>
Research methods and techniques commonly used in education and behavioral sciences; preparation of research reports. Includes library, historical, survey and experimental research and data analysis. Delivered in face to face web enhanced format and fully online format.		
642	INTRO: CLSSRM ASSESS FOR TEACH	<i>3 credits</i>
The focus of this class is on the practical classroom assessment skills future and practicing teachers need for decision-making about student learning.		
643	VIS, GL PLN&PROF PRC FR TEAC LD	<i>3 credits</i>
This course reviews the main research, theories, and practices that make for effective organizational leadership and professional practice for teacher leaders.		
646	MULTICULTURAL COUNSELING	<i>3 credits</i>
Prerequisites: 5600:643 or permission of instructor. An examination of multicultural counseling theory and research necessary to work with culturally diverse people.		
647	DATA&EVID-BAS PRC FR TEAC LEAD	<i>3 credits</i>
An examination of applied research techniques for school leadership and improvement efforts.		
648	INDIV & FAM DEV ACRS LIFE-SPAN	<i>3 credits</i>
An exploration of individual and family development. Emphasis will be placed on understanding the relationship between the individual and his/her family.		
650	IMPL ASSESSMENT IN CLASSROOM	<i>3 credits</i>

Prerequisite: 642. Students in this class will develop, implement, and evaluate a comprehensive 9-week assessment plan.

651	DATA-DRIVEN DECISION MAKING	<i>3 credits</i>
The purpose of this course is to facilitate the understanding and utilization of data to identify classroom/school improvement needs and make informed decisions in effecting change.		
652	INTRO TO EDUCATIONAL EVAL	<i>3 credits</i>
Introduction to core concepts of educational evaluation including; the purpose, process, standards, and models of evaluation. Students will develop skills in interpreting and critiquing evaluation reports.		
653	PRACTICAL APPL OF EDUC EVAL	<i>3 credits</i>
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		
654	MASTERS PROJECT: ASSESS PART I	<i>3 credits</i>
Prerequisite: Permission of advisor This capstone course is the culminating learning experience for the Masters Degree in Assessment and Evaluation. Students complete a comprehensive evaluation project of their choice.		
655	MASTERS PROJECT: ASSESS PART 2	<i>3 credits</i>
Prerequisite: 654. This capstone course is the culminating learning experience for the Masters Degree in Assessment and Evaluation. Students complete a comprehensive evaluation project of their choice.		
695	FLD EXP: MASTERS	<i>1-3 credits</i>
Prerequisites: permission of department chair and instructor. Area determined in accordance with student's program and professional goals.		
697	INDEPENDENT STUDY	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisites: permission of department chair and instructor. Specific area of study determined in accordance with student's program and professional goals.		
698	MASTERS PROBLEM	<i>2-4 credits</i>
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 educational foundations.		
699	MASTERS THESIS	<i>4-6 credits</i>
Prerequisites: permission of department chair and instructor. In-depth study of research problem within humanistic and behavior foundation.		
701	HSTRY OF EDUC IN AMER SOCIETY	<i>3 credits</i>
Historical development of education in American social order, with special emphasis on social, political and economic setting.		
703	SEM: HIST & PHILOS-HIGHER EDUC	<i>3 credits</i>
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 United States. Delivered in face to face web enhanced format and fully online format.		
705	SEM: SOC-PHIL FOUNDATN OF EDUC	<i>3 credits</i>
(May be repeated for a total of six credits) Prerequisite: 600 or equivalent. Inquiry into selected ideological social, economic and philosophical factors affecting educational development in United States and other countries.		
710	ADULT LRN, DEVL & MOTIVAT	<i>3 credits</i>
Emerging theories of intelligence; theories of adult learning; stage theories of adult cognitive, conceptual and moral development; life cycle development; adult life transitions.		
721	LEARNING PROCESSES	<i>3 credits</i>
Study of principles underlying classroom learning processes with particular emphasis on teaching as means of modifying pupil behavior; cognitive, motor, social and affective.		
723	TEACHER BEHAVR & INSTRUCTION	<i>3 credits</i>
Prerequisite: 600. Intensive survey of theoretical and empirical literature involving teacher and conceptions of instruction. A student reports on theory, empirical research and applications in areas of individual interests.		
740	RESEARCH DESIGN	<i>3 credits</i>
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.		
741	DATA COLLECTION METHODS	<i>3 credits</i>
Prerequisite: 5100:740. Emphasis on developing, selecting, and administering common data collection methods in education and social science research including standardized tests, inventories, questionnaires, focus groups, and content analysis.		
742	STATISTICS IN EDUCATION	<i>3 credits</i>
Statistical methods and techniques used in educational measurement and in educational research. Emphasis on hypothesis testing.		
743	ADV EDUCATIONAL STATISTICS	<i>3 credits</i>
Prerequisite: 741. Emphasis on interpreting advanced statistics in education and the social sciences.		
744	QUALITATIVE METHODS I	<i>3 credits</i>
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.		

745	QUALITATIVE METHODS II	<i>3 credits</i>
Prerequisite: 744. 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.		
798	RES PROJ: SPECIAL AREAS	<i>1-3 credits</i>
Prerequisite: permission of department chair and instructor. Critical and in-depth study of specific problem in educational foundations.		
801	RES SEM: ED FOUND&LEADERSHIP	<i>3 credits</i>
Prerequisites: 640 and 740; permission of department chair and instructor. Intensive study of research methods applicable to education. Emphasis on developing a dissertation proposal.		
897	INDEPENDENT STUDY	<i>1-4 credits</i>
(May be repeated for a total of eight credits.) Prerequisites: permission of department chair and instructor. Specific area of inquiry within humanistic and behavioral foundations of education determined in advance by student and faculty advisor.		



Educational Administration (K-12) (5170)

590	W: GENERAL ADMINISTRATION	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
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Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
594	ED INST: GENERAL ADMINISTRATN	<i>1-4 credits</i>
Special course designed as in-service upgrading programs, frequently provided with the support of curriculum units.		
601	ORGANIZATIONAL LEADERSHIP	<i>3 credits</i>
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.		
602	MGMT OF PHYSICAL RESOURCES	<i>3 credits</i>
A comprehensive view of the principles, practices, and new dimensions involved in the planning and management of educational facilities.		
603	MGMT OF HUMAN RESOURCES	<i>3 credits</i>
An orientation to the major dimensions of the personnel function.		
604	SCH CONTEXTS & COMM INVOLVEMNT	<i>3 credits</i>
Prerequisites: 601 and 5100:640. The course is for graduate students interested in P-12 school leadership. It focuses on understanding strategies for collaborating with members of the school community.		
606	EVAL IN ED ORGANIZATIONS	<i>3 credits</i>
Prerequisites: 601 and 5100:640. An examination of the general concepts, models, practical applications and considerations involved in the evaluation of educational organizations.		
607	SCHOOL LAW	<i>3 credits</i>
Prerequisites: 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.		
608	SCHOOL FINANCE & ECONOMICS	<i>3 credits</i>
A study of financial operations of school systems, including taxes, other sources of revenue, expenditures, budgeting and effects of economic factors.		
609	PRINC: CURRICULUM DEVELOPMENT	<i>3 credits</i>
Prerequisites: 601 and 5100:640. This course is intended to help the student develop the performance competencies necessary to engage in curriculum decision making.		
610	SUPERVISION OF INSTRUCTION	<i>3 credits</i>
An introduction to the school function that improves instruction through direct assistance, curriculum, staff and group development and action research.		
613	STDNT SRVC & INTERAGNCY COLLAB	<i>3 credits</i>
Overview of pupil services including analysis of the nature and development of each component and program and discussion of current issues and trends. Field based research required.		
615	STUD SERVICES & DISABILITY LAW	<i>3 credits</i>
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 & GOVERNANCE	<i>3 credits</i>
An examination of leadership as it relates to the development and maintenance of a school climate and culture conducive to teaching and learning.		
695	PRINCIPAL INTERNSHIP	<i>3 credits</i>
Students are required to successfully complete a two-semester internship in a school district chosen by the student and his/her advisor.		

696	PRINCIPAL INTERNSHIP	<i>3 credits</i>
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	<i>1-3 credits</i>
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	ADV ORGANIZATIONAL LEADERSHIP	<i>3 credits</i>
Study of organizations and strengths and weaknesses of common methods of administering them. Practical means by which overcoming bureaucratic weaknesses of bureaucracies are offset or lessened by educational institutions.		
705	DECISION MAKING IN EDUC ADMIN	<i>3 credits</i>
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	<i>3 credits</i>
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	ECONOMICS IN EDUCATION	<i>3 credits</i>
Issues related to the changing marketplace of public, private schooling and higher education institutions as they relate to an urban environment.		
709	ADV PRIN OF CURRICULUM DEVLPMNT	<i>3 credits</i>
A second course in curriculum development with an emphasis on the performance competencies needed to engage in curriculum planning and decision making.		
710	ADVANCED SCHOOL LAW	<i>3 credits</i>
An in-depth study of the law as it pertains to the function and role of the administrator as instructional leader; disciplinarian; building, facilities, and auxiliary services manager.		
716	ADV EVALUATION OF EDUC ORGNZTN	<i>3 credits</i>
An evaluation course to help educational leaders plan and assess educational priorities and outcomes.		
720	TOP SEM: EDUCATIONAL ADMIN	<i>1-3 credits</i>
(May be repeated.) Prerequisite: permission of instructor. Topical studies in selected areas of concern to students, practicing administrators in public, private educational institutions, organizations.		
730	RESIDENCY SEMINAR	<i>3 credits</i>
Focus on recent research in administration and educational administration theory.		
731	RESIDENCY SEMINAR	<i>3 credits</i>
Prerequisite: 601. Focus on recent research in administration and educational administration theory.		
732	PUBL & MEDIA RELAT:ED ORG	<i>3 credits</i>
A course in educational public relations intended to help educational leaders facilitate the development of common perceptions about school issues with multiple constituencies.		
740	THEORIES OF EDUC SUPERVISION	<i>3 credits</i>
Extends 610, including supervisory models, staff development, and the organizational environment's impact on the climate for effective supervision.		
745	SEM: URBAN EDUCATIONAL ISSUES	<i>3 credits</i>
A study of the linkages between educational organizations and their social contexts, particularly as they relate to educational change. Research project required.		
746	POLITICS OF EDUCATION	<i>3 credits</i>
Emphasis given to recent efforts to bring about reform at all levels of the educational enterprise and to conceptual perspectives and research findings.		
795	INTERN: EDUCATIONAL ADMIN	<i>1-5 credits</i>
Students are required to successfully complete a two-semester internship in a school district chosen by the student and his/her advisor.		
796	INTERN: EDUCATIONAL ADMIN	<i>1-5 credits</i>
Students are required to successfully complete a two-semester internship in a school district chosen by the student and his/her advisor.		
895	DOCTORAL INTERNSHIP	<i>1-6 credits</i>
Candidates for 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.		
896	DOCTORAL INTERNSHIP	<i>1-6 credits</i>
Candidates for 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.		
897	INDEPENDENT STUDY	<i>1-3 credits</i>
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.)		
898	RESEARCH PROJ: SPECIAL AREAS	<i>1-2 credits</i>

Prerequisite: permission of advisor. Critical and in-depth study of specific problem in educational administration.

899

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.



Educational Administration (Higher Education) (5190)

515	ADMIN IN HIGHER EDUCATION	<i>3 credits</i>
In-depth study of administrative roles, functions, knowledge and skills requirements, and administrative behavior. Trends in administrative theory and application will also be explored. Delivered in face-to-face web enhanced format and fully online format.		
521	LAW & HIGHER EDUCATION	<i>3 credits</i>
Legal aspects of higher education, sources of law and authority presented; impact on, interaction with, and implications of the administration of higher education will be discussed. Delivered in face-to-face, web-enhanced format, and fully online format.		
525	TOP SEM: HIGHER EDUCATION	<i>3 credits</i>
(May be repeated.) Topical study in a variety of areas related to public and/or private higher education institutions, organizations. Maximum of six credits applied to degree. Delivered in face-to-face web enhanced format and fully online format.		
526	STUDENT SERV & HIGHER EDUCATN	<i>3 credits</i>
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	AMERICAN COLLEGE STUDENT	<i>3 credits</i>
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 EDUC CURRIC & PROG PLAN	<i>3 credits</i>
Study of curriculum planning at the college and university level, factors 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	W: HIGHER EDUCATION ADMIN	<i>3-6 credits</i>
(May be repeated for a total of six credits.) Emphasizing the development and demonstration of leader behavior appropriate to the college or university setting.		
600	ADV ADMIN COLLOQ HIGHER EDUC	<i>3 credits</i>
Prerequisite: permission of instructor. Examination of higher education administration perspectives and issues, including those that pose particular concern to students. Capstone experience for students poised for program completion. Delivered in face-to-face web enhanced format and fully online format.		
601	INTERN: HIGHER EDUCATION	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisite: permission; corequisite: 602. Opportunity for administrative work experience in a higher education setting. Delivered in face-to-face, web-enhanced format, or fully online format.		
602	INTERN: HIGHER EDUC SEMINAR	<i>1 credits</i>
(May be repeated for a total of three 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 EDU	<i>3 credits</i>
Examination of psychosocial literature and theories related to diverse groups and issues within higher education. Theoretical application and perspectives to administrative practice emphasized.		
615	HIST FOUNDTNS OF AMER HIGH EDU	<i>3 credits</i>
Overview of the historical foundations, academic history, and educational traditions emerging from its European roots into American higher education to inform contemporary practice.		
620	FINANCE & HIGHER EDUCATION	<i>3 credits</i>
Facilitates student's understanding of how American Higher Education is financed, identifies various methodologies used, and political and economic impacts and processes involved. Delivered in face-to-face web enhanced format and fully online format.		
626	POLICY, ASSESMNT & ACCT - H ED	<i>3 credits</i>
Familiarizes student with assessment, policy-making, and accountability in higher education. Theoretical approaches explored, internal and external policy actors identified and implementation issues are examined. Delivered in face-to-face web enhanced format and fully online format.		
635	INST STRAT & TECH-COLLEGE INST	<i>3 credits</i>

Selected topics in instruction theory, techniques and strategies 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: HIGHER EDUC

1-3 credits

Selected areas of independent investigation in an area of higher education as determined by the advisor and student in relation to student's academic needs and career goals. Delivered in face-to-face web enhanced format and fully online format.



Early Childhood Education (5200)

100	ORIENT TO EARLY CHILDHOOD EDUC	<i>0 credits</i>
Corequisite: 5100:200. Orientation to the information and strategies necessary for a student to be successful in the program, including portfolio development.		
200	PRE-K PARTICIPATION I	<i>1 credits</i>
Prerequisite: 7400:265, 2200:245. Planned field experience in a pre-kindergarten infant/toddler classroom where students work with children age birth to 3 years both individually and in small groups.		
215	CHILD, FAMILY & SCHOOL	<i>3 credits</i>
Prerequisites: 5100:220, 5610:225. The purpose of this course is to learn about why we create reciprocal working relationships with parents, and methods of creating these types of relationships. (10 field/clinical hours).		
220	VISUAL ARTS CULTR-EARLY CHD	<i>1 credits</i>
Art education concepts, structures, and knowledge base to provide curricular opportunities for education majors to develop as creative problem solvers in an elementary school setting. First offered Fall 1993.		
250	DEV PROCESSES OF INVESTIGATION	<i>3 credits</i>
Prerequisites: 5050:210, 211, admission to Teacher Education Program. This course will enable students to identify and acquire those investigative and discovery processes and skills that are common in mathematics, science, and social studies.		
300	PRE-K PARTICIPATION II	<i>1 credits</i>
Prerequisite: 200, 5610:450 and admission to Teacher Education Program. Planned field experience in pre-kindergarten early intervention program where student works in both small and large group settings and with individual children.		
319	INTEGR EXPRES ARTS IN ERLY CHD	<i>3 credits</i>
Prerequisite: Admission to Teacher Education and 7100:210 or 7500:201. Use of expressive arts as a means for young children to represent their thinking and to enhance their learning of curriculum content.		
320	VISUAL ARTS APPLIC IN ELEM SCH	<i>3 credits</i>
Prerequisite: 5200:220. Exploration of materials, methods, processes and visual techniques relating two and three-dimensional art experiences for the teacher of elementary children.		
321	INSTR TECH: MODERN LANG K-8	<i>3 credits</i>
Focus on theories of language acquisition, models of instruction suited to teaching foreign languages and cultures in the elementary school (K-8), and strategies that promote appropriate levels of language proficiency and competency for young learners.		
325	ADV EARLY CHILDHOOD CURRICULUM	<i>4 credits</i>
Prerequisite: completion of 5500:360, 7400:265, 270, 280. To teach skills for curriculum development for half- and full-day programs for children 3-6 with an emphasis on authentic assessment, projects, and state/national standards. (33 field and 27 clinical hours).		
331	KINDERGARTEN METHODS & MATER	<i>4 credits</i>
Prerequisites: 330 and 7400:265. Scope and sequence of kindergarten curricula, with emphasis on developmentally appropriate methods and materials. This course is not part of the new teacher licensure program.		
334	TCHNG ART IN ELEMENTARY SCHOOL	<i>3 credits</i>
Prerequisite: Admission to Teacher Education Program, Art K-12. Visual arts in elementary schools. Art education concepts with studio orientation including history of art education, developmental stages, curriculum and organization, methods, evaluation and research, and practical participation.		
340	DVLPMTL WRITING IN EARLY CHDHD	<i>3 credits</i>
Prerequisite: 245; prerequisite or corequisite: 370. This course is designed to prepare early childhood pre-service teachers to teach writing, emphasizing writing foundations, the writing process, and creative writing.		
342	TEACHING MATH-YOUNG CHILDREN	<i>3 credits</i>
Prerequisites: 3450:140, 240. Prerequisite or corequisite: 5500:370. Trends in mathematics instruction in early childhood/middle level classrooms. Procedures for the development of mathematics concepts and skills.		
360	TCHG IN EARLY CHILDHOOD CENTER	<i>2 credits</i>
Prerequisite: 7400:280, 270. Corequisite: 370. Assists students with the integration of knowledge, skills, attitudes and values learned in the pre-kindergarten program as they participate with young children.		
370	EARLY CHILDHOOD CENTER LAB	<i>2 credits</i>
Prerequisites: 7400:280, 270. Corequisite: 360. This lab is an integrated practical experience in the University's Center for Child Development under the direction of experienced teachers.		
395	FIELD EXPERIENCE	<i>1-3 credits</i>

Prerequisites: permission of adviser and department head. Independent field work in area selected by student's adviser, based on student's needs.

420	INTEGRATED PRIMARY CURRICULUM	<i>4 credits</i>
Prerequisite or corequisite: 5500:370. Course models an inquiry-based format that integrates math, science, social studies, and technology standards where students learn how to create, implement, manage, and evaluate student-centered learning environments. (25 hours field and 35 clinical hours).		
425	ADV INTEGRATD PRIMARY CURRICLM	<i>4 credits</i>
Prerequisite: Admission to teacher education program; 420. This course further explores an inquiry-based format that integrates math, science, social studies, and technology standards by having the students implement, manage, and evaluate their own and their students' learning. (25 field and 35 clinical hours).		
430	HONORS RES PROJ: EARLY CHLDHD	<i>1-6 credits</i>
Prerequisites: Permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry. (May be repeated for a total of six credits).		
480	ST: ELEMENTARY EDUCATION	<i>1-4 credits</i>
(May be repeated with a change in topic) Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.		
490	W: ELEMENTARY EDUCATION	<i>1-3 credits</i>
Elective workshop for elementary education major who would pursue further refinement of teaching skills. Emphasizes demonstrations of teaching techniques and development of suitable teaching devices.		
491	W: ELEMENTARY EDUCATION	<i>1-3 credits</i>
Elective workshop for elementary education major who would pursue further refinement of teaching skills. Emphasizes demonstrations of teaching techniques and development of suitable teaching devices.		
492	W: ELEMENTARY EDUCATION	<i>1-3 credits</i>
Elective workshop for elementary education major who would pursue further refinement of teaching skills. Emphasizes demonstrations of teaching techniques and development of suitable teaching devices.		
493	W: ELEMENTARY EDUCATION	<i>1-3 credits</i>
Elective workshop for elementary education major who would pursue further refinement of teaching skills. Emphasizes demonstrations of teaching techniques and development of suitable teaching devices.		
495	STU TEACH: (PRE-K THROUGH K)	<i>5 credits</i>
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio. Corequisite: 498. Planned teaching experience in schools selected and supervised by Office of Field Experience.		
496	STU TEACH: (GRADES 1-3)	<i>6 credits</i>
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio. Corequisite: 498. Planned teaching experience in schools selected and supervised by Office of Field Experience.		
497	INDP STUDY: ELEMENTARY EDUC	<i>1-3 credits</i>
Prerequisites: permission of adviser and department head. Specific area of curriculum investigation pertinent to elementary education as determined by student's academic needs.		
498	STUDENT TEACHING COLLOQUIUM	<i>1 credits</i>
Prepares students for the final phase of becoming decision makers. The colloquium will explore problems encountered in classrooms, initiate reflective practice and concepts of action research, and focus on preparation of unit outlines with emphasis on applied decision making.		



Middle Level Education (5250)

100	ORIENTATION TO MIDDLE LEVEL ED	<i>0 credits</i>
Prerequisite: admission to Middle Level Education Program; corequisite: 5100:200. Orientation to the information and strategies necessary for a student to be successful in the program, including portfolio development.		
300	MIDDLE LEVEL EDUCATION	<i>3 credits</i>
Prerequisite or corequisite: 5500:360. Reviews nature/needs of early adolescents; developmentally appropriate middle schooling; philosophy of school organizations; curriculum, pedagogy, and assessment; cultural and community contexts. 15 field hours.		
333	TCHNG SCIENCE MID LEVEL LEARNR	<i>4 credits</i>
Prerequisite or corequisite: 5500:370. A methods course for the prospective teacher to develop a point of view toward science teaching and strategies for effective standards-based science teaching. (15 field hours)		
338	TCH SOC STUDIES MIDDLE CHILHD	<i>3 credits</i>
Prerequisites: 5100:300, 5500:360. A methods course to examine the school social studies curriculum and strategies for effective teaching.		
342	TEACH MATH MID LVL LEARNR	<i>3 credits</i>
Prerequisite or corequisite: 5500:370. Modern strategies of psychology and methodology in middle childhood mathematics on exploratory, structural and mastery levels of learning.		
350	TCH LANG ARTS & MEDIA MID LVL	<i>3 credits</i>
Prerequisites: 5100:300; 5500:245, 286, 360. This course provides preservice middle grade teachers with strategies for integrating the language arts in the areas of reading, writing, speaking, listening, media and drama.		
351	MODES OF WRITING FOR MID GRDS	<i>3 credits</i>
Prerequisite: Admission to College of Education's Teacher Education Program. This course will provide middle school languages arts teachers the understandings and skills necessary to teach writing in varieties of forms and modes including newswriting.		
430	HONORS RES PROJ: MIDDLE LVL ED	<i>1-6 credits</i>
(May be repeated for a total of six credits.) Prerequisites: Permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.		
480	ST: MIDDLE SCHOOL	<i>1-3 credits</i>
Prerequisite: permission of instructor. (May be repeated with change of topic.) Group study of special topics in middle childhood of critical contemporary concern in professional education.		
490	W: MIDDLE LEVEL	<i>1-3 credits</i>
Elective workshop for Middle Childhood majors who would like to pursue further refinement of teaching skills. Emphasis in demonstrations of teaching techniques and development.		
495	STUDENT TEACHING: GRADES 4-6	<i>5 credits</i>
Planned teaching experience in schools selected and supervised by the Office of Field Experience.		
496	STUDENT TEACHING: GRADES 7-9	<i>6 credits</i>
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio; senior status. Corequisite: 498. Planned teaching experience in schools selected and supervised by the Office of Field Experiences.		
497	INDEPENDENT STUDY	<i>1-3 credits</i>
Prerequisite: permission of advisor and department head. Specific area of curriculum investigation pertinent to middle level education as determined by student's academic needs.		
498	STU TEACH COLLOQ: MID GRADES	<i>1 credits</i>
Corequisite: 495 and 496. Prepares learner for final phase of becoming a decision maker. Explores problems encountered in the classroom, initiates reflective practice and concepts of other research.		



Secondary Education (5300)

100	ORIENT:AYA/P-12 MULTI-AGE PRG	<i>0 credits</i>
Prerequisite: admission to the College of Education's Teacher Education Program. Corequisite: 5100:200. Orientation to the information and strategies necessary for a student to be successful in the program, including portfolio development.		
316	METHODS IN TEACHING ART	<i>3 credits</i>
Prerequisites: completion of required course for art teachers and grade-point average of 2.50 in the field. Study of trends and procedures in teaching and supervision; relation of art to home, school and community; observation in selected schools required.		
317	INST TECH: MOD LANG-SECONDARY	<i>3 credits</i>
Focus on theories of language acquisition, models of instruction for teaching foreign languages/cultures and strategies that promote levels of proficiency/competency for adolescent learners.		
325	CONTENT READING IN SECD SCHOOL	<i>3 credits</i>
Instructional principles and practices for helping secondary school youth and adults learn subject matter through application of reading and study skills.		
330	TCHG ADOLESCENT/MID LEVEL LIT	<i>3 credits</i>
Student develops skills for selection of literature that is well-suited for adolescent/middle level children. Student develops, uses, and experiences methods for teaching adolescent/middle level literature in the classroom. (30 clinical experience hours)		
335	LANG LEARNING IN SECOND SCHLS	<i>3 credits</i>
Prerequisite: Admission to the Teacher Education program. Introduces English teachers to the issues of language learning and techniques required to teach language skills.		
395	FLD EXP: SECONDARY EDUCATION	<i>1-3 credits</i>
Supervised work with youngsters, individually and in groups in school and/or community settings.		
420	INST TECH: SECONDARY EDUCATION	<i>3 credits</i>
Prerequisite: 5500:370; corequisite: 5300:421. Open to student who has completed certification requirements in all content fields. Techniques of planning, instruction and evaluation in various secondary teaching fields.		
421	FLD EXP: INST TECH IN SEC ED	<i>2 credits</i>
Prerequisite: 5500:370; Corequisite: 5300:420. 50 hours of field experience taken in conjunction with 5300:420, Instructional Techniques in Secondary Education.		
430	HONORS RES PROJ: SECONDARY EDU	<i>1-6 credits</i>
(May be repeated for a total of six credits) Prerequisite: Permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.		
480	ST: SECONDARY EDUCATION	<i>1-4 credits</i>
(May be repeated with a change in topic) Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.		
490	W: SECONDARY EDUCATION	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
491	W: SECONDARY EDUCATION	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
492	W: SECONDARY EDUCATION	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
493	W: SECONDARY EDUCATION	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
494	ED INST: SECONDARY EDUCATION	<i>1-4 credits</i>
Special courses designed as in-service upgrading programs, frequently provided with the support of national foundations.		
495	STU TEACH: SECONDARY EDUCATION	<i>8-11 credits</i>
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio. Planned teaching experience in schools selected and supervised by the Office of Field Experiences. Co-requisite: 5300:496.		

496

STU TEACH COLLOQ IN SECOND ED

1 credits

Concurrent with Student Teaching; emphasis on applied decision making, group problem solving, and commitment to life-long learning.

497

INDEPENDENT STUDY

1-3 credits

Specific area of curriculum investigation pertinent to secondary education as determined by student's academic needs.



Postsecondary Technical Education (5400)

301	OCCUP EMPL EXPER & SEM	<i>1-4 credits</i>
Provides student with knowledge of current industrial or business practice at level minimally commensurate with that associated with employment expectations of graduates of technical programs.		
395	FLD EXP: TECHNICAL EDUCATION	<i>1-3 credits</i>
Prerequisite: upper-college standing. Supervised work with youngsters, individually and in groups in educational institutions, training and/or community settings.		
400	POSTSECONDARY LEARNER	<i>3 credits</i>
Prerequisite or corequisite: 401 or permission. Describes characteristics of the postsecondary learner and studies issues, factors, and strategies pertinent to successful facilitation of learning in a variety of postsecondary occupational learning environments. Delivered in a totally on-line format and face to face format with web enhancements.		
401	LEARNING WITH TECHNOLOGY	<i>3 credits</i>
Experiences in using, developing, and evaluating instructional technologies and media used for postsecondary education. Delivered in a totally on-line format and face to face format with web enhancements.		
405	WORKFORCE EDUC YOUTH & ADULTS	<i>3 credits</i>
Prerequisite or corequisite: 401 or permission of the instructor. History and operations of current vocational education for youth and adults. Includes study of social, economic and political influences that stimulate growth and expansion of vocational education. Delivered in a totally on-line format and face to face format with web enhancements.		
415	TRAIN IN BUSINESS & INDUSTRY	<i>3 credits</i>
Prerequisites: 401 or permission from instructor. Examine the role and mission of the training function in the modern industrial setting. Foundation for students interested in industrial trainer or training supervision positions. Delivered in a totally on-line format and face to face format with web enhancements.		
420	POSTSEC INSTRUCTIONAL TECHNIGS	<i>3 credits</i>
Prerequisite or corequisite: 401 or permission of the instructor. Experiences in using, developing, and evaluating instructional technologies and media used for technical instruction. Delivered in a totally on-line format and face to face format with web enhancements.		
430	SYS CURR DSGN FOR POSTSEC INST	<i>3 credits</i>
Prerequisite: 401, 420, admission to program or instructor permission. Procedure of breaking down an occupation to determine curriculum of their laboratory and classroom, developing this content into an organized sequence of instructional units. Delivered in a totally on-line format and face to face format with web enhancements.		
435	SYS INST DESIGN IN POSTSEC ED	<i>3 credits</i>
Prerequisites or corequisites: 401, 420, 430, admission to program, or permission of instructor. Selected topics in instructional techniques appropriate in postsecondary technical education. Emphasis on instructional methods, techniques in classroom, laboratory including tests, measurements. Delivered in a totally on-line format and face to face format with web enhancements.		
475	INSTRUCTIONAL PRACTICE SEMINAR	<i>3 credits</i>
Prerequisites: 400, 401, 405, 415, 420, 430, 435 and admission to the Postsecondary Technical Education program with a "C" or better in each 5400 course and a 2.5 or better overall GPA, May be taken with 5400:475. Micro teaching and portfolio development. Delivered in a totally on-line format and face to face format with web enhancements.		
480	ST: WORKFORCE EDUC & TRAINING	<i>1-4 credits</i>
(May be repeated with a change in topic) Group study of special topics of critical, contemporary concern in professional education.		
481	ST: TECHNICAL EDUCATION	<i>1-4 credits</i>
See department for course description.		
490	W: TECHNICAL EDUCATION	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units. Delivered in a totally on-line format and face to face format with web enhancements.		
491	W: TECHNICAL EDUCATION	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
492	W: TECHNICAL EDUCATION	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
495	POSTSEC EDUCATION PRACTICUM	<i>3 credits</i>

Prerequisites: 400, 401, 405, 415, 420, 430, 435, and admission to the Postsecondary Technical Education program with a "C" or better in each 5400 course and a 2.5 or better overall GPA in 5400 courses, and an overall GPA of 2.5 or better. Directed instruction under the supervision of directing instructor and university supervisor, and development of instructional portfolio.

497	INDP STUDY: TECHNICAL EDUC	<i>1-3 credits</i>
Area of study determined by student's need.		
500	POSTSECONDARY LEARNER	<i>3 credits</i>
Describes characteristics of the postsecondary learner; studies issues, factors, and strategies pertinent to successful facilitation of learning in a variety of postsecondary learning environments. Delivered in face to face web enhanced format and fully online format.		
501	LEARNING WITH TECHNOLOGY	<i>1 credits</i>
An overview of informational learning and research technologies used and applied in workforce education and training by practitioners/learners for learning, research and evaluation. Online format.		
505	WORKFORCE EDUC YOUTH & ADULTS	<i>3 credits</i>
History and operations of current workforce education for youth and adults. Includes study of social, economic, and political influences that stimulate growth and expansion of workforce education. Delivered in face to face web enhanced format and fully online format.		
515	TRAIN IN BUSINESS & INDUSTRY	<i>3 credits</i>
Examine the role and mission of the training function in the modern industrial setting. Foundation for students interested in industrial trainer or training supervision positions. Delivered in face to face web enhanced format and fully online format.		
520	POSTSEC INSTRUCTIONAL TECHNOLGY	<i>3 credits</i>
Experiences in using, developing, and evaluating instructional technologies and media used for technical instruction. Delivered in face to face web enhanced format and fully online format.		
530	SYS CURR DSGN FOR POSTSEC INST	<i>3 credits</i>
Development of postsecondary curriculum using sound instructional systems design principles and instructional technologies. Delivered in face to face web enhanced format and fully online format.		
535	SYS INST DESIGN IN POSTSEC ED	<i>3 credits</i>
Best practices in instructional strategies appropriate for postsecondary instructors. Emphasis on instructional design and learner outcome assessments. Delivered in face to face web enhanced format and fully online format.		
580	ST: WORKFORCE EDUC & TRAINING	<i>1-3 credits</i>
(May be repeated for a maximum of 6 credit hours with a change in topic.) Group study of special topics of critical, contemporary concern in professional education.		
590	W: WORKFORCE EDUC & TRAINING	<i>1-3 credits</i>
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.		
591	W: TECHNICAL EDUCATION	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
592	W: TECHNICAL EDUCATION	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems, utilization of community resources, planning of curriculum units.		
600	THE TWO-YEAR COLLEGE	<i>3 credits</i>
Introduces students to the nature, purpose, and philosophy of the two-year colleges. Includes an examination of two-year colleges, technical schools, and proprietary schools offering courses at the postsecondary level. Delivered in face to face web enhanced format and fully online format.		
605	ADV SYS DSGN:NEEDS AS&EVL	<i>3 credits</i>
An examination of the instructional design in workforce education and training and supporting research in effective performance-based program needs, assessment, and evaluation processes. Delivered in face to face web enhanced format and fully online format.		
620	POSTSECNDRY TEACHER LEADERSHIP	<i>3 credits</i>
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.		
660	POSTSECONDD DISTANCE LEARNING	<i>3 credits</i>
Introduction to the nature, purpose, and philosophy of distance learning; examination of current scope, history, theory, institutions, and programs of distance learning. Delivered in an online format.		
675	ADV INSTRUCTIONL APPL SEMINAR	<i>3 credits</i>
Prerequisites: 500, 515 or 600 or 505, 520, 530, 535, 605, 620, 5100:604 or 703; admission to the technical education program. 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	INTERNSHIP: POSTSEC EDUCATION	<i>3 credits</i>

Prerequisites: advisor and supervisor permission and completion of all required Technical Education coursework. Teaching of curriculum development under supervision from the University and the learning organization. Includes a seminar and portfolio development. Delivered in an online format.

695	FLD EXP: MASTERS	<i>1-6 credits</i>
On-the-job experience related to student's program of studies. Credit/Non-credit.		
697	INDP STUDY: TECHNICAL EDUC	<i>1-3 credits</i>
(May be repeated for a total of six credits.) Area of study determined by student's need.		
698	MASTERS PROBLEM	<i>3 credits</i>
(May be repeated for a total of six credits.) In-depth study of an instructional or curricular problem in workforce education or training. Student must be able to demonstrate critical, analytical, and problem-solving skills.		
699	MASTERS THESIS	<i>3 credits</i>
(May be repeated for a total of six credits.) Opportunity to conduct research on a problem in workforce education or training. Student must be able to demonstrate needed analytical, evaluation, and basic research skills. Credit/Non-credit.		



General Education (5540)

120	ARCHERY	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181).		
121	BADMINTON	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181).		
122	BASKETBALL	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181).		
123	BOWLING	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181).		
126	FITNESS AND WELLNESS	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). One credit each. Two periods each week.		
127	GOLF	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181).		
128	GYMNASTICS (APPARATUS)	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).**		
129	GYMNASTICS (TUMBLING)	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).**		
130	HANDBALL	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).**		
131	INDOOR SOCCER	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).**		
132	KARATE	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). One credit each. Two periods each week.		
133	LIFEGUARD TRAINING	<i>2 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Two credits each.		
134	MODERN DANCE	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).**		
135	RACQUETBALL	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181).		

136	RUGBY	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).**		
138	SCUBA	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). One credit each. Two periods each week.		
139	SELF DEFENSE	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). One credit each. Two periods each week.		
140	SKIING (CROSS-COUNTRY)	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).**		
141	SKIING (DOWNHILL)	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181).		
142	SOCCER	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181).		
143	SOCIAL DANCE	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).**		
145	SQUASH RACKETS	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).**		
146	SWIMMING (BEGINNING)	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181).		
147	SWIMMING (INTERMEDIATE)	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181).		
149	TEAM HANDBALL	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).**		
150	TENNIS (BEGINNING)	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181).		
151	VOLLEYBALL	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181).		
152	WATER POLO	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).**		
153	WATER SAFETY	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).**One credit each. Two periods each week.		
154	WRESTLING	<i>0.5 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).**		
155	BASIC KAYAKING	<i>1 credits</i>

Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). One credit each. Two periods each week.

170	VARSITY BASEBALL	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.		
171	VARSITY BASKETBALL	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.		
172	VARSITY CROSS COUNTRY	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.		
173	VARSITY FOOTBALL	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.		
174	VARSITY GOLF	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.		
175	VARSITY SOCCER	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.		
176	VARSITY SOFTBALL	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.		
177	VARSITY SWIMMING	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.		
178	VARSITY TENNIS	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.		
179	VARSITY TRACK	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.		
180	VARSITY WRESTLING	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports(170-181).** Varsity sports are one credit each.		
181	VARSITY VOLLEYBALL	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.		
182	VARSITY RIFERY	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.		
183	VARSITY CHEERLEADING	<i>1 credits</i>
Participation in individual and group sports. Individual can acquire knowledge and skill in activities which may be of value and satisfaction throughout life. One-half credit courses are offered one-half semester. Permission of coach necessary for enrollment in varsity sports (170-181). Varsity sports are one credit each.		
190	ST: GENERAL STDS PHYSICAL EDUC	<i>0.5-2 credits</i>
Weight training, self defense for the blind, water safety instruction, beginning yoga, tai chi, billiards, intermediate and advanced bowling, intermediate and advanced golf, advanced self defense.		
199	ST: GENERAL STDS PHYSICAL EDUC	<i>0.5-2 credits</i>
See department for course description.		
200	LIFEGUARD INSTRUCTOR	<i>2 credits</i>
This course is designed to train students to teach the American Red Cross lifeguard training courses.		

201	WATER SAFETY INSTRUCTOR	<i>2 credits</i>
This course is designed to train students to teach swimming and water safety courses from Pre-K to adult.		
207	INTRO: ROCK CLIMBING	<i>1 credits</i>
This course teaches basic rock-climbing skills. No previous experience in necessary.		



Curriculum & Instruction (5500)

230	EDUCATIONAL TECHNOLOGY	<i>3 credits</i>
Prerequisite: 13-15 sem. hrs. with a 'C' or better in specific GenEd courses; 5100:200 (may be taken as prerequisite or corequisite); FBI/BCI background checks. Effectively identifying, locating, evaluating, designing, preparing, and efficiently using educational technology as instructional resource in the classroom to support learning and teaching.		
245	UNDRSTND LIT DEVLPMNT & PHONICS	<i>3 credits</i>
Prerequisite: admission to Teacher Preparation Program. Children's literacy development is explored through an integrated instructional model, with emphasis on the role of comprehension, phonics, and functional spelling in language learning. (10 hours of service learning)		
286	TEACH MULT TXT THRU GENRE	<i>3 credits</i>
Prerequisite: 245. Survey of children's literature through print and nonprint media. Genres will be explored through a variety of technologies, including computer software and film.		
310	INSTRUCTIONAL DESIGN	<i>3 credits</i>
Prerequisite: 5100:210, 5100:211; Corequisite: 311. Design and teach lessons using instructional models, strategies, and resources for students with different characteristics and design appropriate assessments to measure content mastery.		
311	INSTRUCTIONAL RESOURCES	<i>3 credits</i>
Prerequisites: 5100:210, 5100:211; Corequisite: 310. Examines existing and developing media, technological, human and environmental resources as they relate to learning. Includes identifying, locating, evaluating, using, designing, and preparing educational resources.		
320	DIVERSITY IN LEARNERS	<i>3 credits</i>
Prerequisites: 5100:210, 5100:211. Students learn to appreciate common core culture, the diversity in the student population and the democratic ideal of equal access to educational opportunity. (10 hours of field experience included.)		
330	CLASSROOM MANAGEMENT	<i>3 credits</i>
Prerequisites: 5100:210, 5100:211. Content regarding effective organization of the classroom as well as procedures and models for mediation of student behaviors will be presented.		
341	LAB PRACTICUM IN READING	<i>3 credits</i>
Prerequisite: 445. Laboratory experience with classroom, small groups and individual situations. A student diagnoses, implements procedures and follows prescribed reading improvement practices. (25.5 field hours)		
360	ED PLAN: INST,ASSESS & CLS MGT	<i>3 credits</i>
Prerequisites: 230, 5100:200, 220; 5610:225; prerequisite or corequisite: 5100:300. Theoretical foundations for standards-based thematic units and lesson plans, classroom assessment and organization, including procedures and models for mediating student behavior and classroom management.		
370	ED IMP: INST,ASSESSMT, CLS MGT	<i>3 credits</i>
Prerequisites: 360, 5100:300. Interpretation and application of standards-based thematic units and lesson plans; classroom assessment and organization, including mediation of student behaviors and classroom management.		
440	DEV RDG CONT AREA-E/MID CHD	<i>3 credits</i>
Prerequisite: 245 or permission of instructor. Nature of reading skills relating to content subjects. Methods and materials needed to promote reading achievement in content subjects by the elementary classroom teacher.		
442	TCHG RDG CULTR DIVERS LEARNERS	<i>3 credits</i>
Prerequisites: 245, 286. The course is designed to provide students with knowledge, skills, and attitudes that will enable employment of effective methods of teaching reading to culturally different learners and/or learners whose language patterns are nonstandard.		
445	EVALUATING LANGUAGE LITERACY	<i>3 credits</i>
Prerequisite: 245, 286, 440. Explores assessment of students' progress in language literacy. Formal and informal instruments identifying progress in reading, writing, speaking and listening are examined linked to work in the field. (30 hours of field experience)		
450	NATURE, HSTRY & PHLSPHY OF SCI	<i>3 credits</i>
(May be repeated with a change in topic). Provides opportunities to examine the historical and philosophical perspectives of science in an online medium and the impact of science and technology on society.		
455	LITERACY FOR MULTIAGE LICENSUR	<i>3 credits</i>
Prerequisite: Admission to Teacher Education Program. Organizing instruction, use of oral language development protocols, strategies for word skill development, comprehension and assessment as they relate to content areas.		
475	INSTRUCTIONAL TECHNOLOGY APPL	<i>3 credits</i>

Prerequisite: 5500:230. Focus on developing learner competencies in the use of instructional technologies to enhance both the instructor's personal and professional productivity.

480	ST: CURRICULUM & INSTRUCTION	<i>1-6 credits</i>
Group study of special topics of critical, contemporary concern in professional education. (May be repeated with a change in topic)		
484	PRINC: BILINGUAL/MULTICULT ED	<i>3 credits</i>
An introduction to the theoretic, cultural, sociolinguistic bases of bilingual/multicultural education. Legislation, court decisions, program implementation included.		
485	TCH LANG LITERACY-2ND LANG LRN	<i>4 credits</i>
Prerequisite: Admission to the College of Education. Course applies methodologies for teaching reading, language arts in the bilingual/ multicultural classroom. The bilingual student's native language, culture stresses. (12 field hours)		
486	TCH MATH,SOC STD&SCI-BIL STDS	<i>3 credits</i>
Prerequisites: Completion of all age-appropriate methods courses. Course applies methodologies for teaching mathematics, science, social studies in the bilingual/multicultural classroom. The bilingual student's native language stressed.		
487	TECH TCHG ESL	<i>4 credits</i>
Course includes teaching language skills to Limited English Proficient students in grades K-12, administration of language assessment tests, selection and evaluation of materials. (10 field hours)		
488	PRACT: TEACH ENGL AS A SEC LAN	<i>2 credits</i>
Prerequisites: 485, 487. A practical experience in which teacher candidates observe, participate, and practice teaching in an ESL classroom under the supervision of an experienced, certified/licensed teacher.		
490	W: CURRICULUM & INSTRUCTION	<i>1-3 credits</i>
Emphasizes development of teaching devices and/or curriculum units, demonstration of teaching techniques.		
491	W: CURRICULUM & INSTRUCTION	<i>1-3 credits</i>
Emphasizes development of teaching devices and/or curriculum units, demonstration of teaching techniques.		
492	W: CURRICULUM & INSTRUCTION	<i>1-3 credits</i>
Emphasizes development of teaching devices and/or curriculum units, demonstration of teaching techniques.		
497	INDEPENDENT STUDY	<i>1-3 credits</i>
Prerequisite: permission of advisor and department chair. Specific area of curriculum investigation pertinent to the general curriculum and instruction area as determined by student's academic needs.		
520	ADV INSTRUCT TECHNIQUES	<i>3 credits</i>
Methods of teaching a particular area of the middle and secondary school curriculum for students in the Master's with Licensure program.		
521	FLD EXP: ADV INSTRUCTION TECH	<i>2 credits</i>
Corequisite: 520. Instructional experience in the 7-12 classroom to apply theory and research to practice.		
522	CONTENT AREA LITERACY	<i>3 credits</i>
Examines instructional strategies for constructing meaning in content subjects (e.g., science, social studies, mathematics) using print and electronic texts.		
524	TCHG RDG CULTR DIVERS LEARNERS	<i>3 credits</i>
Knowledge, skills, and attitudes to employ effective methods of teaching reading to diverse populations and/or learners whose language patterns are nonstandard.		
540	PRINC: BILINGUAL/MULTICULT ED	<i>3 credits</i>
An introduction to the theoretic, cultural, sociolinguistic bases of bilingual/multicultural education. Legislation, court decisions, program implementation included.		
541	TCH LANG LITERACY-2ND LANG LRN	<i>4 credits</i>
Course applies methodologies for teaching reading, language arts in the bilingual/ multicultural classroom. The bilingual student's native language and culture are stressed. (12 field hours)		
542	TCH MATH,SOC STD&SCI-BIL STDS	<i>3 credits</i>
Prerequisites: elementary education majors, 5500:333, 336, 338; secondary education majors, 5500:311 (science, social studies in the bilingual/multicultural classroom. Course applies methodologies for teaching mathematics, science, social studies in the bilingual multi-cultural classroom. The bilingual student's native language stressed.		
543	TECH TCHG ESL	<i>4 credits</i>
Course includes teaching language skills to Limited English Proficient students in grades K-12, administration of language assessment tests, selection and evaluation of materials. (10 field hours)		
550	NATURE, HSTRY & PHLSPHY OF SCI	<i>3 credits</i>
(May be repeated with a change in topic). Provides opportunities to examine the historical and philosophical perspectives of science in an online medium and the impact of science and technology on society.		
555	LITERACY FOR MULTIAGE LICENSUR	<i>3 credits</i>
Organizing instruction, use of oral language development protocols, strategies for word skill development, comprehension and assessment as they relate to content areas.		
575	INSTRUCT TECHNOLOGY APPL	<i>3 credits</i>
Focus on developing learner competencies in the use of instructional technologies to enhance both the instructor's personal and professional productivity.		

590	W: CURRICULUM & INSTRUCTION	<i>1-3 credits</i>
Workshop for educators to improve teaching skills in a specific area of the curriculum. (May be repeated for a maximum of 6 credits.)		
591	W: CURRICULUM & INSTRUCTION	<i>1-3 credits</i>
Workshop for educators to improve teaching skills in a specific area of the curriculum. (May be repeated for a maximum of 6 credits.)		
592	W: CURRICULUM & INSTRUCTION	<i>1-3 credits</i>
Workshop for educators to improve teaching skills in a specific area of the curriculum. (May be repeated for a maximum of 6 credits.)		
592	W: CURRICULUM & INSTRUCTION	<i>1-3 credits</i>
Workshop for educators to improve teaching skills in a specific area of the curriculum. (May be repeated for a maximum of 6 credits.)		
594	EDUCATIONAL INSTITUTES	<i>1-4 credits</i>
Special courses designed as in-service upgrading programs. Frequently provided with support of national foundations.		
600	CONCEPTS OF CURR & INST	<i>3 credits</i>
A study of the undergirding research and theory of curriculum and instruction with special attention to educational decision in the metropolitan setting. (3 field hours)		
605	SEM: TRENDS&ISS IN CURR & INST	<i>3 credits</i>
A study of recent research and theory in curriculum and instruction with special attention to educational decision making.		
615	PHIL & ORGNZTN OF MID SCH	<i>3 credits</i>
Philosophy, theory, research, and exemplary organizational, assessment, and evaluation components of middle level education.		
616	MIDDLE SCHOOL CURR & INST	<i>3 credits</i>
Theories, research, and exemplary practices focusing on middle school curriculum and instruction.		
617	SEM: LICENS IN CURR & INSTR	<i>3 credits</i>
This course should be taken at the beginning of the Master's with Licensure Program as an introduction to curriculum and pragmatics of teaching.		
619	INSTR & MGMT PRACTICES	<i>3 credits</i>
Students learn to use teaching models and management strategies to become effective instructors. Also included are educational issues that relate to effective management and instruction.		
621	ADV INST TECH: MODERN LANG P-8	<i>3 credits</i>
Prerequisite: 5500:617 or permission of instructor. Focus is on theories of language acquisition, models of instruction suited to teaching foreign languages and cultures in the elementary school (P-8), and strategies that promote appropriate levels of language competence and proficiency for young learners.		
622	CHILDRN LIT IN CURRICULUM	<i>3 credits</i>
Examination of literary genre with emphasis on methods and techniques for presenting literature to children in preschool, elementary, and middle grades.		
625	CONTMP ISS IN LIT INST & PHNCS	<i>3 credits</i>
Survey course exploring current research in reading and writing as constructive processes of meaning-making.		
626	ASSESS OF READING DIFFICULTIES	<i>3 credits</i>
Prerequisite: 625. Examines formal and informal assessments and intervention strategies for children with reading difficulties.		
627	ST: CURRICULAR & INST STUDIES	<i>3 credits</i>
(3-9 credits; may be repeated with a change in topic). Prerequisite: permission of instructor. Groups study of special topics of critical, contemporary concern in professional education.		
628	LITERACY ASSESSMENT PRACTICUM	<i>3 credits</i>
Prerequisite: 626. Laboratory experience within classroom, small groups and individuals. A student diagnoses, implements procedures, and follows prescribed reading improvement. (May be repeated for a maximum of 6 credits.)		
629	READING PROG IN SECD SCHL	<i>3 credits</i>
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	ADV BEHAV STRATG FOR EDUCATOR	<i>3 credits</i>
This course provides the educator with an advanced examination of strategies designed to improve student behavior in the school setting.		
635	SEM: TCHNG FOREIGN LANGUAGES	<i>3 credits</i>
(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.		
637	SEM: RSCH&THRY FOREIGN LANG ED	<i>3 credits</i>
(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.		
640	DEV OF CHILDRN: GRD FOUR & FIVE	<i>3 credits</i>

Prerequisite: Course is only open to candidates who hold an Early Childhood P-3 teaching license. Course focuses on nature/needs of grades 4-5 adolescents' development including physical, cognitive-intellectual, moral, psychological and social-emotional. Explore related issues in home, school and community contexts.

641	FOURTH GRADE CURR & INSTRUC	<i>3 credits</i>
Prerequisite/Corequisite: 640. The language arts, mathematics, science and social studies, the arts and technology content and the knowledge of inquiry and problem-based instruction necessary for fourth-grade learners.		
642	FIFTH GRADE CURR & INSTRUC	<i>3 credits</i>
Prerequisite/Corequisite: 640. Models an inquiry-based format that integrates math, science, social studies, and technology standards where students learn to create, implement, manage, and evaluate student-centered learning environments.		
645	THRY&PRACT IN ELEM SCHOOL MATH	<i>3 credits</i>
Focuses on the development of mathematics education, current trends in the teaching of elementary school mathematics, and future directions in mathematics education.		
650	ELEM SCIENCE CURR & INSTR	<i>3 credits</i>
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 CURR & INSTR	<i>3 credits</i>
A critical analysis of the theory and practice of curriculum and instructional methods in science for early adolescent and adolescent learners.		
660	COACHING IN DIVERSE CLASSROOMS	<i>2 credits</i>
This course focuses on the preparation of literacy specialists to coach teachers in the implementation of culturally responsive literacy instruction for diverse learners.		
661	COACH FOR EFFCTVE ASSESSMT PRC	<i>2 credits</i>
Designed for reading specialists, this course teaches knowledge, skills and dispositions in school-based professional development and coaching on classroom-based literacy assessment concepts and skills.		
662	PEDAGOGY OF EFFCTVE LITRCY INS	<i>2 credits</i>
The course enables candidates to demonstrate knowledge of a wide range of instructional practices, methods, and curriculum materials, including technology, that support effective literacy instruction.		
663	PROFESSIONAL DEVELOP IN LITRCY	<i>2 credits</i>
An introduction to research and knowledge bases related to teacher professional development with an examination of coaching as one venue of supporting teacher professional development.		
664	ADVANCED LITERACY RESEARCH	<i>2 credits</i>
This course is an introduction to literacy research as an integral part of professional development and supports engagement in inquiry that advances candidates' understanding of literacy instruction.		
665	LITERACY SPECIALIST INTERNSHIP	<i>4 credits</i>
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	<i>3 credits</i>
Prerequisite: 760. The implementation of a research design for an inquiry into a curricular and/or instruction problem within an educational setting.		
692	FLD EXP: COLLOQUIUM	<i>1 credits</i>
Prerequisite: admission to student teaching; corequisite: 694. Instructional experience in the 7-12 classroom to apply theory and research to practice.		
693	FLD EXP: MASTERS W/ LICENSURE	<i>1-3 credits</i>
Instructional experience in the 7-12 classroom to apply theory and research to practice. (May be repeated for a maximum of 6 credits.)		
694	FLD EXP: CLASSROOM INSTR	<i>1-12 credits</i>
Prerequisites: Admission to Student Teaching; corequisite: 692. Planned teaching experience in schools selected and supervised by Office of Field Experience.		
695	FLD EXP: MASTERS	<i>1-6 credits</i>
Prerequisites: permission of advisor and department chair. Experience in an educational setting to apply educational theory and research to practice.		
696	MASTERS PROJECT	<i>1-6 credits</i>
In-depth investigation of specific problem pertinent to student's area of concentration in education.		
697	INDEPENDENT STUDY	<i>1-3 credits</i>
Selected areas of independent investigation as determined by advisor and related to student's academic needs.		
699	MASTERS THESIS	<i>4-6 credits</i>
In-depth study of research problem in education. Student must be able to demonstrate necessary competencies to deal with research problem in education.		
750	CUR RSCH & THRY IN SCI EDUC	<i>3 credits</i>
Intensive examination of contemporary theory and research literature in science teaching and learning for preschool through senior high school students.		
760	ACTION RESEARCH	<i>3 credits</i>

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	SEM: CURR & INST STUDIES	<i>1-3 credits</i>
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(May be repeated.) Intensive examination of a particular area of curriculum and instruction.

800	PROF SEM: CURR & INSTR STDS	<i>3 credits</i>
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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	ADV STDY & RSCH IN RDNG INSTR	<i>3 credits</i>
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Survey of research, comparison and evaluation of programs, design and development of projects in reading through group or individual study.

880	DOCT SEM: CURR & INSTR STUDIES	<i>1-3 credits</i>
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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.)

895	DOCTORAL FIELD EXPERIENCE	<i>1-6 credits</i>
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(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.

898	INDEPENDENT STUDY	<i>1-3 credits</i>
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(May be repeated for a total of 6 hours.) Area of study determined by student's needs.

899	DOCTORAL DISSERTATION	<i>1-20 credits</i>
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Study and in-depth analysis of a research problem in curriculum and instruction.



Physical Education (5550)

100	INTRO: SPORT STUDIES	<i>3 credits</i>
Introduction to sport studies explores the history, philosophy, and principles of today's sport industry within a practical, career-oriented framework.		
102	PE ACTIVITIES I: FIT,HLTHYLIFE	<i>3 credits</i>
Introduction to fitness and leisure activities, as well as healthy life style. Knowledge of developing programs that lead to fitness, leisure and healthy life style for individuals as well as groups.		
110	INTRO: ATHLETIC TRAINING	<i>1 credits</i>
Provides an overview of the Sports Medicine team and the components of a comprehensive athletic healthcare program. Introduces the student to the profession of athletic training.		
125	INTRO: EXERCISE SCIENCE	<i>1 credits</i>
Overview for becoming a fitness professional. Information concerning choosing a career, national certification and professional organizations will be provided.		
130	PHYS ED ACTIVITIES FOR CHILDRN	<i>2 credits</i>
For a physical education majors only. Participation in methods, activities and issues relating to pre-K through elementary physical education programs. One lecture and two laboratory periods per week.		
150	CONCEPTS IN HEALTH & FITNESS	<i>3 credits</i>
Introduction to basic health and fitness concepts and related topics. Attention will be given to individual fitness programs emphasizing such topics as aerobic and anaerobic exercises, nutrition, diet, stress, and assessment methods and procedures.		
160	INTRODUCTION TO COACHING	<i>3 credits</i>
An introduction to the coaching profession. Discussion of the important technical and tactical elements of coaching athletes.		
193	ORIENTATION: PHYS & HEALTH ED	<i>3 credits</i>
Introduction to physical and health education to students who pursuit state license in teaching physical and health education. It?s also the required course before the admission to the college of education.		
194	SPORTS OFFICIATING	<i>2 credits</i>
Knowledge of rules for interscholastic sports and officiating techniques.		
195	FOUNDATIONS OF PHYSICAL EDUC	<i>3 credits</i>
Concepts analysis of games and play and application of these concepts to the teaching/learning process in physical education at all ages.		
200	AQUATIC FACILITY MANAGEMENT	<i>3 credits</i>
This course is designed to explore, acquire, and discuss knowledge and techniques of aquatic facility operation and management.		
201	KINESIOLOGY	<i>3 credits</i>
Prerequisites: 3100:200, 201 or 202, 303. Application of basic principles of anatomy and mechanics to human movement. Three hours lecture with practical application and demonstrations.		
202	DIAGNOSIS OF MOTOR SKILLS	<i>3 credits</i>
This course introduces athletic trainers and physical education majors to the sciences of diagnosing motor skills.		
203	MEASUREMENT & EVAL IN PHYS ED	<i>3 credits</i>
Statistical procedures needed for analysis and interpretation of tests. Evaluation procedures, testing instruments, and techniques for administering tests are discussed and practiced. Three hours lecture.		
204	INDIVIDUAL & TEAM SPORTS	<i>2 credits</i>
Intro to individual and team sports that are commonly taught in schools. Course presents knowledge, fundamental skill development, psychomotor skills analysis for the content areas.		
205	TEAM SPORTS	<i>2 credits</i>
The purpose of this course is to teach students how to teach team sports.		
206	COACHING BASKETBALL	<i>3 credits</i>
An introduction to coaching basketball. Discussion of the important technical and tactical elements of coaching basketball.		
207	COACHING TRACK AND FIELD	<i>3 credits</i>
An introduction to coaching track and field. Discussion of the important technical, tactical and psychological elements of coaching track and field.		
208	COACHING FOOTBALL	<i>3 credits</i>

	An introduction to coaching football. Discussion of the important technical and tactical elements of coaching football.	
209	COACHING BASEBALL	<i>3 credits</i>
	An introduction to coaching baseball. Discussion of the important offensive, defensive, and technical and tactical elements of coaching baseball.	
211	FIRST AID & CPR	<i>2 credits</i>
	Based on American Red Cross standards for first aid and cardiopulmonary resuscitation. Instruction and skills practice for sudden illness/emergencies is provided. Two hours lecture.	
212	FIRST AID & CPR - PROF RESCUER	<i>2 credits</i>
	Prerequisite: permission of instructor. First aid and cardiopulmonary resuscitation for health care professionals based upon American Red Cross standards. Instruction and skills practice for sudden illness/emergencies is provided.	
220	HEALTH PROMOTION & BEHAV CHG	<i>3 credits</i>
	Prerequisite: 150 Course will translate theories of behavioral science for health professionals who are involved in planning, developing, implementing or evaluating physical activity programs.	
235	CONCEPTS MOTOR LEARNG & DEVLPM	<i>3 credits</i>
	This course will introduce key motor learning concepts and analysis of developing fundamental motor skills. Three hours lecture.	
240	CARE & PREV-ATHLETIC INJURIES	<i>3 credits</i>
	Prerequisites: 3100:200,201; Corequisite: 3100:202, 203. This course is an introduction to basic athletic training principles and techniques. Includes a laboratory course for practical application of techniques.	
241	CARE & PREV OF ATH INJURY LAB	<i>1 credits</i>
	Prerequisites: 3100:200/201; corequisites: 3100:202/203, 5550:240. This course is designed to allow students to learn, practice, and become competent and proficient in the psychomotor skills associated basic injury prevention, evaluation, management, and treatment of physically active individuals in the practice of athletic training as defined by the NATA.	
242	THERAPEUTIC MODALITIES	<i>3 credits</i>
	Prerequisites: Accepted into the ATEP Clinical Education Program. Corequisite: 243. This course will promote student medical and technical aspects of therapeutic modalities and pharmacological agents in the treatment and rehabilitation of injured physically active individuals.	
243	ATHLETIC TRAINING LAB I	<i>1 credits</i>
	Prerequisites: Accepted into the ATEP Clinical Education Program. Corequisites: 242. This course will meet CAATE standards and allow the students to learn and practice psychomotor skills and clinical proficiencies. Includes clinical rotation.	
245	ADAPTED PHYSICAL EDUCATION	<i>3 credits</i>
	Identification of atypical movement among various exceptional individuals, with adapted physical education programming experience in a laboratory setting. Web-based.	
250	PRINCIPLE OF ATHLETIC TRAINING	<i>2 credits</i>
	Prerequisites: Students must be accepted into the Clinical Athletic Training Education Program (ATEP). This course will address principles and techniques used in initial evaluation of musculoskeletal injury as defined by CAATE standards and guidelines.	
255	EMERGENCY CARE FOR ATH TRAIN	<i>3 credits</i>
	Prerequisite: Accepted into ATEP Clinical Education program. This course will teach knowledge and skills in handling emergency situations or life-threatening sudden illness or injuries which an athletic training may encounter.	
260	SPRTS RLS & RGLTNS FOR ATH TRN	<i>1 credits</i>
	Prerequisite: Accepted into ATEP Clinical education program. This course will address the most common rules and regulations of common athletic competitions paying specific attention to injuries, injury time, and blood borne pathogen issues.	
275	ADV ATHLETIC INJURY MGT:LO EXT	<i>3 credits</i>
	Prerequisites: 242, 243; corequisite: 276. This course is designed to meet CAATE standards and guidelines to display knowledge and psychomotor skills in injury evaluation and recognition lower extremity.	
276	ATHLETIC TRAINING LAB II	<i>1 credits</i>
	Prerequisites: 242, 243; corequisite: 275. This course will meet CAATE standards and allow the students to learn and practice psychomotor skills and clinical proficiencies. Includes clinical rotation.	
300	PHYS OF EXER FOR OLDER ADULT	<i>3 credits</i>
	Prerequisite: 302. Analysis of physiological effects of exercise on the elderly. Exercise proram adaptable for use by persons working with elderly. Three hours lecture.	
302	PHYSIOLOGY OF EXERCISE	<i>3 credits</i>
	Prerequisites: 3100:206/207 or 3100:208/209. A course designed to study the physiological effects of exercise relative to physical education activities, athletics and athletic training. Two hours lecture, two hours laboratory. Students must be in the College of Education to take 300/400 level courses.	
305	CLINICAL EXPERIENCE I	<i>2 credits</i>
	Prerequisite: by permission only. Improves the student's psychomotor skills in the following domains of athletic training: injury prevention, injury recognition/evaluation and management, therapeutic exercise and rehabilitation.	
306	PE ACT IV: BADMINTON/GOLF	<i>2 credits</i>

Course presents knowledge, fundamental skill development, and psychomotor skill analysis for the content areas of badminton and golf. One hour lecture, two hours lab. Students must be in the College of Education to take 300/400 level courses.

307	PHYSICAL EDUCATN ACTIVITIES V	<i>2 credits</i>
Course presents knowledge, fundamental skill development, and psychomotor skill analysis for the content areas of tennis and volleyball. One hour lecture, two hours lab. Students must be in the College of Education to take 300/400 level courses.		
308	PE ACT IV: DANCE & TUMBLING	<i>2 credits</i>
Course presents knowledge, fundamental skill development, and psychomotor skill analysis for the content areas of dance and tumbling. One hour lecture, two hours lab. Students must be in the College of Education to take 300/400 level courses.		
327	EXERCISE LEADERSHIP	<i>3 credits</i>
Prerequisite: 302. Students learn principles of teaching safe and effective exercises designed to enhance physical fitness. Course will assist students in preparing for a group exercise certification.		
330	EXERCISE AND WEIGHT CONTROL	<i>3 credits</i>
Prerequisite: 302. Course will focus on role of exercise in regard to its positive influences on weight control. The hazards and implications of being overweight are studied.		
332	THERAPEUTIC EXR & REHAB I PRIN	<i>3 credits</i>
Prerequisites: 342, 343. Corequisite: 333. This course will address CAATE standards and guidelines for competencies and proficiencies using principles in exercise and rehabilitation techniques.		
333	ATHLETIC TRAINING LAB IV	<i>1 credits</i>
Prerequisites: 342, 343. Corequisite: 332. This course will allow students to learn psychomotor skills associated with therapeutic exercise & rehabilitation techniques. Includes a 250 hour clinical sport rotation.		
335	MVMT EXPERIENCES FOR CHILDREN	<i>3 credits</i>
Prerequisites: 130, 193, 235. Course focuses on use of fundamental motor skill analysis to structure movement lessons for children from early childhood through elementary years. One hour lecture, two hours lab. (20 clinical hours, 10 field hours.) Students must be in the College of Education to take 300/400 level courses.		
336	MOTOR LRNG & DEV EARLY CHLDHD	<i>2 credits</i>
Physical fitness, fundamental motor skills, motor development and learning for early childhood, birth to age eight. Creating an environment of motor experiences for young children (10 field hours). Students must be in the College of Education to take 300/400 level courses.		
342	ADV ATHLETIC INJURY MGT:UP EXT	<i>3 credits</i>
Prerequisites: 275, 276; corequisite: 343. This course designed to meet CAATE standards and guidelines to display knowledge and psychomotor skills in injury evaluation and recognition of the upper extremity.		
343	ATHLETIC TRAINING LAB III	<i>1 credits</i>
Prerequisite: 275, 276; Corequisite: 342. This course will meet CAATE standards and allow the students to learn and practice psychomotor skills and clinical proficiencies. Includes clinical rotation.		
352	STRENGTH & CONDITION FUND	<i>3 credits</i>
Prerequisite: 3100:200, 201, 202, 203. This course will address CAAHEP competencies and proficiencies in the area of strength and conditioning of physically active individuals.		
355	EXERCISE IN SPEC POPULATIONS	<i>3 credits</i>
Prerequisites: 302, 403. Advanced course in clinical exercise testing and prescription relative to disease of the cardiovascular, pulmonary, metabolic, musculoskeletal, neuromuscular, and immunologic systems.		
360	PRACTICUM I	<i>1 credits</i>
Prerequisites: 3100:200, 201, 202, 203. This is a senior level athletic training course focusing on the refinement of practical skills and preparation for the NATABOC certification examination.		
362	SPORT HISTORY	<i>3 credits</i>
This course is designed to introduce students to sport in American History. The people, organizations and institutions that shaped the development of sport are examined.		
364	SPORT ETHICS	<i>3 credits</i>
The focus of this course is the ethical behavior of sport participants and sport administrators studied within the context of the sport environment.		
366	SPORT COMMUNICATION	<i>3 credits</i>
The focus of this course is on the important knowledge that administrators should have related to the field of sport communication.		
368	SPORT FACILITY MANAGEMENT	<i>3 credits</i>
This course has been designed to identify the systems approach for the effective management of the maintenance and operation of sport and recreation facilities.		
370	FINANCIAL ASPECTS OF SPORT	<i>3 credits</i>
The focus of this course is related to the important knowledge that administrators should have related to the field of the financial aspects of sport.		
375	SPORT PERFORMANCE PRINCIPLES	<i>3 credits</i>
An introduction to important elements related to the physical aspects of sport performance. Discussion of the important physical elements of coaching athletes.		

395	FIELD EXPERIENCE	<i>1-6 credits</i>
Prerequisite: permission of adviser. Corequisite: permission of adviser. Practical experience in an area related to physical education under supervision of faculty member. Student works with current physical education programs or exercise science settings. May be repeated for a maximum of 12 credits. Students must be in the College of Education to take 300/400 level courses.		
400	MUSCULOSKEL ANATOMY I:UP EXTR	<i>3 credits</i>
Prerequisite: 3100:200, 3100:202. This course includes lecture/laboratory activities to provide the student a comprehensive learning experience in lower extremity musculoskeletal anatomy.		
401	MUSCULOSKEL ANATOMY II:LO EXTR	<i>3 credits</i>
Prerequisites: 3100:200, 201, 202, 203 and 5550:201. This course includes lecture laboratory activities to provide the student a comprehensive learning experience in lower extremity musculoskeletal anatomy.		
403	EXERCISE TESTING	<i>3 credits</i>
Prerequisite: 302. This course will cover basic knowledge of exercise testing and interpretation of results. Cardiovascular and muscular fitness aspects will be measured. Students must be in the College of Education to take 300/400 level courses.		
404	EXERCISE PRESCRIPTION	<i>3 credits</i>
Prerequisites: 403 or instructor's permission. This course focuses on how to appropriately prescribe exercise for various populations (young, middle-aged, elderly, pregnant, diseased-states). Students must be in the College of Education to take 300/400 level courses.		
405	CLINICAL EXPERIENCE I	<i>2 credits</i>
Prerequisite: Accepted into ATEP Clinical education program. Enroll by advisor permission only. This course will allow for athletic training students to master CAATE proficiencies and clinical proficiencies associated with the course.		
406	ADV STRENGTH & CONDITIONING	<i>3 credits</i>
Prerequisite: 352. Strength and conditioning programs for heterogeneous populations. The course covers high-level sport specific exercise prescriptions that aids injury prevention and performance enhancement.		
409	SPORT BEHAVIOR	<i>3 credits</i>
The focus of this course is the behavior of athletes and sport participants studied within the context of play, games, and sport.		
410	INTRO: SPORT SOCIOLOGY	<i>3 credits</i>
Provides information to students about the sociological aspects of sport. Delivered in a totally online format, web-based format, or in a face-to-face format.		
412	GENERAL MEDICAL ASPECTS	<i>3 credits</i>
Prerequisites: 3100:200/201 or permission. 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.		
415	SEMINAR IN ATHLETIC TRAINING	<i>2 credits</i>
Prerequisites: 3100:200, 201, 202, 203. To meet CAAHEP standards and guidelines and incorporate an even distribution of competencies and proficiencies throughout all athletic training for sports medicine courses.		
418	CARDIORESPIRATORY FUNCTION	<i>3 credits</i>
Prerequisite: 302. 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.		
420	FUNDA OF MGMT STRATEG IN SPORT	<i>3 credits</i>
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 in a face-to-face format. Students must be in the College of Education to take 300/400 level courses.		
422	SPORT PLANNING/PROMOTION	<i>3 credits</i>
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 in a face-to-face format.		
424	SPORTS LEADERSHIP	<i>3 credits</i>
Introduces students 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 in a face-to-face format.		
426	NUTRITION FOR SPORTS	<i>3 credits</i>
Prerequisite: 7400:133. This course will provide an explanation of the consumption, absorption, and recommendation for diet of athletes and the physically active individual.		
428	NUTRITION TEACHERS & COACHES	<i>3 credits</i>
Covers nutritional basics and topics related to teaching physical education/health and coaching athletes, including basic nutrition, eating disorders, meal preparation, and trends in nutrition.		
430	SR HONORS PROJ: PHYSICAL EDUC	<i>1-6 credits</i>
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry. *Students must be in the College of Education to take 300/400 level courses.		
436	FOUND&ELEMNTS-ADPTED PHYS EDUC	<i>3 credits</i>

Principles, components, and strategies necessary in providing motor activities for handicapped students via application of a neurodevelopmental model and alternate methods. Three hours lecture. Students must be in the College of Education to take 300/400 level courses.

438	CARDIAC REHAB PRINCIPLES	<i>3 credits</i>
Prerequisite: 302. This course will teach students the core competencies for cardiac rehab professionals, based upon the American Association of Cardiovascular and Pulmonary Rehabilitation Specialists (AAVCPR).		
440	INJURY MGT FOR TEACHER & COACH	<i>2 credits</i>
Prerequisites: 211. This course challenges the student to understand ways to provide and care for the safety of individual they teach or coach.		
444	ATHLETIC TRAINING LAB V	<i>1 credits</i>
Prerequisites: 332, 333. Corequisite: 445. This course will meet CAATE standards and allow the students to learn and practice psychomotor skills and clinical proficiencies. Includes clinical rotation.		
445	THERAPEUTIC EXR & REHAB II APP	<i>3 credits</i>
Prerequisites: 332, 333. Corequisite: 444. This course will address CAATE standards and guidelines for competencies and proficiencies using principles in exercise and rehabilitation techniques.		
446	INST TECH: SECD PE & HEALTH	<i>3 credits</i>
Prerequisites: 102, 193 and 204/205. Instructional strategies for teaching secondary students in physical and health education. A variety of instructional models will be introduced appropriate to the learners' age and development. It is a required course for the physical education licensure. Two hours lecture, two hours lab (30 clinical hours). Students must be in the College of Education to take 300/400 level courses.		
447	INST TECH: CHILDREN IN PE & HE	<i>3 credits</i>
Prerequisites: 130 and 193. Instructional strategies for teaching children in physical and health education. A variety of instructional models will be introduced appropriate to the learners' age and development. Required for the physical education licensure. (30 clinical hours). Students must be in the College of Education to take 300/400 level courses.		
449	ORG & ADM FOR HEALTH CARE PROF	<i>3 credits</i>
Prerequisites: senior level status and permission only. This class is a requirement for Athletic Trainers and Exercise Science majors. This class presents the skills necessary for supervising a health care facility.		
450	O & A: PHYS ED, INTRAM & ATHLTC	<i>3 credits</i>
Prerequisite: instructor's permission. Investigation of procedures for conducting physical education, intramural, and athletic programs. Includes tournament designs, supplies and equipment, liability, curriculum, and general administration. Three hours lecture. Students must be in the College of Education to take 300/400 level courses.		
451	ASSESS & EVAL IN ADPTD PHYS ED	<i>3 credits</i>
Prerequisites: permission of adviser. Investigation, analysis, and selection of appropriate assessment instruments, as well as methodology for determining instructional objectives and activities for handicapped students. Three hours lecture. Students must be in the College of Education to take 300/400 level courses.		
452	FOUND OF SPT SC, PHY & HLTH ED	<i>3 credits</i>
Overview of the emergence of sport science, physical and health education as a profession and the supporting role of underlying scholarly and scientific disciplines. Three hours lecture. Students must be in the College of Education to take 300/400 level courses.		
453	PRINCIPLES OF COACHING	<i>3 credits</i>
Basics for becoming a successful coach. Discussion of principles applying to most sports, players and coaches. Delivered in a totally online format, web-based format, or in a face-to-face format. Ten clinical hours required. Students must be in the College of Education to take 300/400 level courses.		
456	RESEARCH SEMINAR	<i>2 credits</i>
Prerequisite: Enrollment with Advisor permission only. This course is designed to provide students an opportunity to review current research, create, implement, and present original research in an allied health related field.		
459	PRACTICUM SEMINAR	<i>1 credits</i>
Prerequisite: permission of instructor. This course will focus on the professional development process, including practicum preparation, resume development, interview skills and job search strategies.		
460	PRACT: PHYSICAL EDUCATION	<i>1-6 credits</i>
Prerequisites: permission of adviser. Corequisite: permission of adviser. Practical work experience with certified personnel in a discipline or profession related to physical education or sport and exercise science. May be repeated for a maximum of 12 credits. *Students must be in the College of Education to take 300/400 level courses.		
462	LEGAL ASP OF PHYSICAL ACTIVITY	<i>2 credits</i>
Overview 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 in a face-to-face format.		
465	PSYCHOLOGY OF INJURY REHAB	<i>2 credits</i>
Prerequisites: 3100:200, 201, 202, 203. 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.		
467	PRACTICUM II	<i>1 credits</i>
Prerequisites: 3100:200, 201, 202, 203. This course will allow the students to practice psychomotor skills in the high school setting while being supervised by a certified athletic trainer.		
470	ORTHOPEDIC INJURY & PATHOLOGY	<i>3 credits</i>

Prerequisites: 3100:200, 201, 202, 203. This course will discuss common musculoskeletal pathology and surgical procedure associated with a physically active population.

480	ST: PHYSICAL EDUCATION	<i>1-4 credits</i>
(May be repeated with a change in topic) Prerequisite: permission of instructor. Group study of special topics in physical education. May be repeated with change in topic. Delivered in a totally online format, web-based format, or in a face-to-face format. *Students must be in the College of Education to take 300/400 level courses.		
485	EXERCISE SCIENCE CAPSTONE	<i>2 credits</i>
Prerequisites: 302, 403. Designed to familiarize students with current issues in exercise physiology. Students will be expected to obtain a professional certification during this course.		
490	W: PHYSICAL EDUCATION	<i>1-3 credits</i>
Practical, intensive and concentrated involvement with current curricular practices in areas related to physical education. Students must be in the College of Education to take 300/400 level courses.		
494	STU TEACH: COLLOQ PHYS&HLTH ED	<i>2 credits</i>
Prerequisites: Core courses, program studies courses; corequisite: Student Teaching, 495. Students meet during student teaching to discuss concerns about student teaching and analyze previous learning as it relates to their future as a professional educator. Students must be in the College of Education to take 300/400 level courses.		
495	STU TEACH: PHYSICAL & HLTH ED	<i>11 credits</i>
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio. Corequisite 5550:494. Planned teaching experience in schools selected and supervised by the Office of Extended Field Experiences.		
497	INDP STUDY: PHYSICAL EDUCATION	<i>1-6 credits</i>
Prerequisite: permission of adviser. Corequisite: permission of adviser. Analysis of specific topic related to a current problem in physical education or sport and exercise science. May be repeated for a maximum of 12 credits. *Students must be in the College of Education to take 300/400 level courses.		
500	MUSCULOSKEL ANATOMY I:UP EXTR	<i>3 credits</i>
Prerequisites: 3100:200, 201, 202, 203 and 5550:201. Designed to address the upper portions of the musculoskeletal system in comprehensive detail. Includes articulations, cytology, histology, and neurological integration with lab and practical experiences.		
501	MUSCULOSKEL ANATOMY II:LO EXTR	<i>3 credits</i>
Prerequisites: 3100:200, 201, 202, 203 and 5550:201. Designed to address the lower portions of the musculoskeletal system in comprehensive detail. Includes articulations, cytology, histology, and neurological integration with lab and practical experiences.		
505	ADV STRENGTH AND CONDITIONING	<i>3 credits</i>
This course teaches strength and conditioning programs design for heterogeneous populations. The course covers high-level sport specific exercise prescriptions that aids injury prevention and performance enhancement.		
510	INTRO: SPORT SOCIOLOGY	<i>3 credits</i>
Provides information to students about the sociological aspects of sport. Delivered in a totally online format, web-based format, or in a face-to-face format.		
518	CARDIORESPIRATORY FUNCTION	<i>3 credits</i>
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.		
522	SPORT PLANNING/PROMOTION	<i>3 credits</i>
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 in a face-to-face format.		
524	SPORTS LEADERSHIP	<i>3 credits</i>
Introduces students 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 in a face-to-face format.		
526	NUTRITION FOR SPORTS	<i>3 credits</i>
This course will provide an explanation of the consumption, absorption, and recommendation for diet of athletes and the physically active individual.		
528	NUTRITION TEACHRS & COACHES	<i>3 credits</i>
Covers nutritional basics and current topics related to teaching physical education/health and coaching athletes.		
536	FOUND&ELEMNTS-ADPTED PHYS EDUC	<i>3 credits</i>
Principles, components, and strategies necessary in providing motor activities for handicapped students via application of a neuro-developmental model and alternative methods. Three hour lecture.		
538	CARDIAC REHAB PRINCIPLES	<i>3 credits</i>
This course will teach students the core competencies for cardiac rehab professionals, based upon the American Association of Cardiovascular and Pulmonary Rehabilitation Specialists (AACVPR).		
540	INJURY MGT FOR TEACHER & COACH	<i>2 credits</i>
This course challenges the graduate student to understand ways to provide and care for the safety of individual they teach.		
541	ADV ATHLETIC INJURY MGT:UP EXT	<i>4 credits</i>

Prerequisites. 3100:200,201,202,203 and 5550:240. This course is designed to cover recognition, evaluation, and rehabilitation of upper extremity injuries as well as general medical pathologies of the upper extremity.

546	INST TECH: SECD PHYSICAL EDUC	<i>3 credits</i>
Instructional strategies 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	INST TECH: CHILDREN IN PHYS ED	<i>3 credits</i>
Instructional strategies for elementary 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	O & A: PHYS ED, INTRAM & ATHLETIC	<i>3 credits</i>
General concepts of administration and organization in physical/health education, intramural, and athletic programs.		
552	FOUND OF SPT SC, PHY & HLTH ED	<i>3 credits</i>
Overview of the emergence of sport science, physical and health education as a profession and the supporting role of underlying scholarly and scientific disciplines.		
553	PRINCIPLES OF COACHING	<i>3 credits</i>
Basics for becoming a successful coach. Discussion of principles applying to most sports, players and coaches. Delivered in a totally online format, web-based format, or in a face-to-face format. Ten clinical hours required.		
562	LEGAL ASP OF PHYSICAL ACTIVITY	<i>2 credits</i>
Overview 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 in a face-to-face format.		
565	PSYCHOLOGY OF INJURY REHAB	<i>2 credits</i>
Prerequisites: 3100:200, 201, 202, 203. 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.		
570	ORTHOPEDIC INJURY & PATHOLOGY	<i>3 credits</i>
Prerequisites: 3100:200, 201, 202, 203. This course will discuss common musculoskeletal pathology and surgical procedure associated with a physically active population.		
590	W: PHYSICAL EDUCATION	<i>1-3 credits</i>
Practical, intensive, and concentrated involvement with current curricular practices in areas related to physical education.		
592	W: PHYSICAL EDUCATION	<i>1-3 credits</i>
Practical, intensive, and concentrated involvement with current curricular practices in areas related to physical education.		
594	STUDENT TEACHING COLLOQUIUM	<i>2 credits</i>
Prerequisites: required physiological foundations courses, required historical/philosophical foundations courses, required program studies courses. Corequisite: 595. Students who have a bachelor's degree but no teaching licensure and who are completing the master's plus initial licensure program 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	PRACT: STUDENT TEACHING	<i>8 credits</i>
Prerequisites: Core courses and program studies courses, each with a 2.5 grade point average. Corequisite: Student teaching Colloquium 594. Student teaching for 16 weeks in primary and secondary school settings.		
600	BIOMECH APP TO SPORT & PHY ACT	<i>4 credits</i>
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 ADMIN & SUPERVISION	<i>3 credits</i>
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 BEHAVR APPLIED TO SPORTS	<i>3 credits</i>
Coaching education principles related to motor development and motor skill learning. Focus on effective practices for learning and advanced skills teaching for coaches.		
603	TACT & STRAT-SCI OF COACHING	<i>3 credits</i>
Course focuses on coaching and teaching the skills, tactics, and strategies in individual and team sports. May be taught online, web-enhanced, or face-to-face.		
604	CURRENT ISS IN SPORT & PHYS ED	<i>3 credits</i>
This course represents a planned experience in interpretation and articulation of information within the context of selected issues in sport.		
605	PHYSIOL MUSCULAR ACTVY & EXER	<i>3 credits</i>
Functions of body systems and physiological effects of exercise. Laboratory experiences, lectures, discussions.		
606	STATS: QUANT & QUAL MTHDS	<i>3 credits</i>
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	MOTV ASPECTS PHYSICAL ACTIVITY	<i>3 credits</i>

Analysis of factors influencing motivation of motor performance with emphasis on competition, audience effects, aggression.

610	MASTERING TEACHING & COACHING	<i>3 credits</i>
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/field hours required.		
611	RSCH & ANALYSIS OF EFFECTIVE TEACHING IN PE	<i>3 credits</i>
For the new professional, this course concentrates on research and analysis of skills and professional competencies needed to become an effective teacher of physical education.		
612	GENERAL MEDICAL ASPECTS	<i>4 credits</i>
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.		
615	CT: EXERCISE PHYSIOLOGY	<i>3 credits</i>
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	LAB INSTRUMENT TECH IN EXERCISE	<i>3 credits</i>
This is a course designed to provide hands-on laboratory experiences for students in the area of exercise science.		
630	BUSINESS OF SPORT	<i>3 credits</i>
The focus of this course is related to the important knowledge that administrators should have related to the sport business field.		
680	ST: HEALTH & PHYSICAL EDUCATION	<i>2-4 credits</i>
(May be repeated) Prerequisite: permission of instructor. Group study of special topics in health and physical education and sports medicine.		
695	FIELD EXPERIENCE: MASTERS	<i>1-6 credits</i>
Prerequisite: permission of advisor. Participation in a work experience related to physical education. The experience may not be part of current position. Documentation of project required.		
697	INDEPENDENT STUDY: PHYSICAL EDUCATION	<i>1-3 credits</i>
Prerequisite: Permission of advisor. In-depth analysis of current practices or problems related to physical education. Documentation of the study required.		
698	MASTERS PROBLEM	<i>2-4 credits</i>
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 physical education.		
699	MASTERS THESIS	<i>4-6 credits</i>
Prerequisite: permission of advisor. In-depth research investigation. Student must be able to demonstrate necessary competencies to deal with a research problem in physical education.		



Outdoor Education (5560)

430	SR HONORS PROJ: OUTDOOR EDUC	<i>1-6 credits</i>
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.		
450	APPL OUTDOOR ED TO SCH CURRIC	<i>4 credits</i>
Provides knowledge, skills and techniques useful in application of outdoor education to school curriculum.		
452	RESRC & RESRC MGT TCH OUTDR ED	<i>4 credits</i>
Methodologies unique to outdoor education which incorporate a multisensory approach to learning. Instructional materials and resources which permit expansion of curriculum beyond the school building.		
454	RESIDENT OUTDOOR EDUCATION	<i>2 credits</i>
Skills, program considerations, and organizational techniques unique to an extended, overnight, resident outdoor education program. Off-campus location for four days and three nights.		
456	OUTDOOR PURSUITS	<i>4 credits</i>
Investigation and participation in practical experiences in outdoor pursuits.		
460	OUTDOOR EDUCATION PRACTICUM	<i>2 credits</i>
Prerequisites: 452, 454. Closely supervised practical experience in conjunction with regularly scheduled classroom meetings. Laboratory experience consists of active participation with an established outdoor education program.		
464	WLDRNSS EDUC ASSC OUTDR LDRSHP	<i>3 credits</i>
This is the Wilderness Education Association Standard Program for Outdoor Leadership Certification.		
497	INDEPENDENT STUDY	<i>1-3 credits</i>
Prerequisites: permission of adviser and supervisor of independent study. Provides varied opportunities for a student to gain first-hand knowledge and experience with existing outdoor education programs.		
550	APPL OUTDOOR ED TO SCH CURRIC	<i>4 credits</i>
Provides knowledge, skills and techniques useful in application of outdoor education to school curriculum.		
552	RESRC & RESRC MGT TCH OUTDR ED	<i>4 credits</i>
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	<i>2 credits</i>
Focus on helping physical education teachers use critical thinking to review programming/organizational techniques relevant to outdoor education programs. Extended experience in outdoor settings required.		
556	OUTDOOR PURSUITS	<i>4 credits</i>
Investigation and participation in practical experiences in outdoor pursuits.		
600	OUTDOOR EDUC: RURAL INFLUENCES	<i>3 credits</i>
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	ST: OUTDOOR EDUCATION	<i>2-4 credits</i>
(May be repeated with change in topic) Prerequisite: permission of instructor. Group and individual study of special topics of contemporary concern in outdoor education.		
652	RESOURCES TCHNG OUTDOOR EDUC	<i>4 credits</i>
See department for course description.		
690	PRACTICUM IN OUTDOOR EDUCATION	<i>2-4 credits</i>
Prerequisites: 550, 552 and permission of advisor. Supervised practical experience with existing outdoor education programs. In conjunction with practical work student meets regularly with advisor.		
695	PRACTICUM IN OUTDOOR EDUCATION	<i>3 credits</i>
Prerequisite: permission of advisor. Participation and documentation of practical professional experience related to outdoor education.		
697	INDEPENDENT STUDY	<i>1-3 credits</i>
Prerequisite: permission of advisor. In-depth analysis of current practices or problems related to outdoor education. Documentation of study required.		
698	MASTERS PROBLEM	<i>2-4 credits</i>
Prerequisite: permission of advisor. Intensive research study related to a problem in outdoor education or related discipline.		
699	MASTERS THESIS	<i>4-6 credits</i>

An original composition demonstrating independent scholarship in a discipline related to outdoor education.



Health Education (5570)

101	PERSONAL HEALTH	<i>2 credits</i>
This course applies the current principles and facts pertaining to healthful, effective living, personal health problems, and needs of the student. Two hours lecture.		
201	FOUNDATIONS IN HEALTH EDUCATN	<i>3 credits</i>
Prerequisite: 101. History and philosophy of health education as a discipline; professionalism and administration in health education are considered.		
202	STRESS MANAGEMENT	<i>3 credits</i>
Prerequisite: Sophomore standing. Course provides knowledge about the relationship between stress, physiological, psychological illness and disease, also how to manage stress in life activities.		
322	CURRENT TOPICS IN HEALTH EDUC	<i>3 credits</i>
Prerequisites: 101, 201, 320. Skills needed to do research, teach, and present current health education topics in a factual and comfortable manner in schools and community. Three hours lecture. Students must be in the College of Education to take 300/400 level courses.		
375	PROGRAM PLANNING & EVALUATION	<i>2 credits</i>
Prerequisites: 101, 201. This course addresses the process of planning and evaluating health education programs within the school and community.		
395	FIELD EXPER: HEALTH EDUCATION	<i>1-3 credits</i>
Prerequisite: permission of the adviser. On-site field experience will be conducted in an area related to pre-K-12 health education under the supervision of a faculty member. Students must be in the College of Education to take 300/400 level courses.		
400	ENVIRON ASPECTS OF HEALTH EDUC	<i>3 credits</i>
Prerequisite: Major or minor in health education or instructor's permission. A study of the interrelationships of ecosystems and a healthful environment. This course investigates many aspects of the environment and their influences upon the quality of human life. Students must be in the College of Education to take 300/400 level courses.		
420	COMMUNITY AND PERSONAL HEALTH	<i>3 credits</i>
Introduction of current public and personal health issues. Organizations and their roles in public and personal health programs. tudents must be in the College of Education to take 300/400 level courses.		
421	COMPREHENSIVE SCHOOL HEALTH	<i>3 credits</i>
Prerequisites: 101, 201, 320. This course explains and presents comprehensive school health curricula for pre-k to 12. The three components of a comprehensive school health program are presented.		
423	MTHDS & MTRLS TCH HLTH EDUCATN	<i>3 credits</i>
Prerequisites: 101, 201, 320, 5100:210/211, 5500:310/311. Planning, organization, use of instructional resources and delivery of health education content and teaching process (pre K-12). Students must be in the College of Education to take 300/400 level courses.		
430	SR HONORS PROJ: HEALTH EDUCATN	<i>1-6 credits</i>
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry. Students must be in the College of Education to take 300/400 level courses.		
460	PRACT: HEALTH EDUCATION	<i>2-6 credits</i>
Prerequisite: permission of the adviser. The practicum in Health Education is an on-site participation in a community health organization, agency or resource. Students must be in the College of Education to take 300/400 level courses.		
497	INDP STUDY: HEALTH EDUCATION	<i>1-2 credits</i>
Prerequisite: permission of the adviser. Analysis of a specific topic related to a current problem in health education. May include investigative procedure, research or concentrated practical experience.		
520	COMMUNITY HEALTH	<i>2 credits</i>
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	<i>4 credits</i>
Prerequisite: admission to Graduate School. This course explains and presents comprehensive school health curricula for K-12. The three components of a comprehensive school health program are presented; instruction, services, and the environment.		
523	MTHDS & MTRLS TCH HLTH EDUCATN	<i>3 credits</i>
Prerequisite: permission of instructor. Planning, organization, use of instructional resources and delivery of health education content and teaching processes (pre K-12).		

Prerequisite: permission of instructor. The practicum in Health Education is an on-site participation in a community health organization, agency, or resource.



Educational Guidance and Counseling (5600)

401	INTRODUCTION TO SUICIDOLOGY	<i>3 credits</i>
Introduction to Suicidology covers a broad range of issues related to suicide from global, U.S. national, state and local perspectives.		
410	PERSONNEL SERVICES IN SCHOOL	<i>2 credits</i>
Prerequisite: senior standing. Introduction to background, role and function, techniques, community agencies and issues in personnel field. For student considering pupil personnel fields, social work.		
415	MENTAL ILLNESS & MEDIA	<i>2 credits</i>
Mental illness is often portrayed negatively the media. This course focuses on mental illness, stigma, and how movies portray specific mental disorders.		
426	CAREER EDUCATION	<i>2 credits</i>
Prerequisite: junior, senior or graduate standing. Examination of current career education models and programs with emphasis on infusion of career education activities into elementary and secondary curriculum.		
436	HELPING SKILLS RESIDENT ASSTS	<i>2 credits</i>
(Credit/noncredit) Prerequisite: open to resident assistants in University housing. A course designed to help student personnel workers become more effective in professional role.		
450	CNSL PROB LF-THREAT ILLNES&DTH	<i>3 credits</i>
Prerequisite: permission. Consideration of the global issues, current research, coping behavior, support systems and family and individual needs in regard to life-threatening situations.		
480	ST: EDUC GUIDANCE & COUNSELING	<i>1-4 credits</i>
(May be repeated with a change in topic) Prerequisite: permission of instructor. Group study of special topics of critical, contemporary concern in professional education.		
490	W: EDUCATIONAL GUIDANCE & COUN	<i>1-3 credits</i>
Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.		
491	W: EDUCATIONAL GUIDANCE & COUN	<i>1-3 credits</i>
Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.		
492	W: EDUCATIONAL GUIDANCE & COUN	<i>1-3 credits</i>
Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.		
493	W: EDUCATIONAL GUIDANCE & COUN	<i>1-4 credits</i>
Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.		
494	COUNSELING INSTITUTE	<i>1-4 credits</i>
In-service programs for counselors and other helping professionals.		
515	MENTAL ILLNESS & MEDIA	<i>2 credits</i>
Mental illness is often portrayed negatively the media. This course focuses on mental illness, stigma, and how movies portray specific mental disorders.		
526	CAREER EDUCATION	<i>2 credits</i>
Prerequisite: junior, senior or graduate standing. Examination of current career education models and programs with emphasis on infusion of career education activities into elementary and secondary curriculum.		
550	CNSL PROB LF-THREAT ILLNES&DTH	<i>3 credits</i>
Prerequisite: permission. Consideration of the global issues, current research, coping behavior, support systems and family and individual needs in regard to life-threatening situations.		
590	W: EDUCATIONAL GUIDANCE & COUN	<i>1-3 credits</i>
Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.		
591	W: EDUCATIONAL GUIDANCE & COUN	<i>1-3 credits</i>
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593	W: EDUCATIONAL GUIDANCE & COUN	<i>1-4 credits</i>
Special instruction designed as in-service and/or upgrading individuals on current issues and practices in counseling.		
594	COUNSELING INSTITUTE	<i>1-4 credits</i>
In-service programs for counselors and other helping professionals.		
600	SEMINAR IN COUNSELING	<i>1 credits</i>

Prerequisite: counseling majors must elect 600 prior to electing 651 and/or within the first 10 credits of 5600 course work. Structured group experience designed to help a student assess selection of counseling as a profession.

601	RES AND PROG EVAL IN COUNS	<i>3 credits</i>
Overview of research methods and statistics, understanding and conducting counseling research, and program assessment and evaluation knowledge.		
602	INTRO: TO COUNSELING	<i>2 credits</i>
Understanding guidance and counseling principles including organization, operation and evaluation of guidance programs (designed for non-counseling major).		
610	COUNSELING SKILLS FOR TEACHERS	<i>3 credits</i>
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	ISS IN SEXUALITY FOR COUNSELOR	<i>3 credits</i>
A seminar covering, in addition to changing current topics, sexuality across the lifespan, diversity and sexual orientation, and assessment.		
621	COUNSELING YOUTH AT RISK	<i>3 credits</i>
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	<i>3 credits</i>
Prerequisites: enrolled 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	MAR&FAM COUN/THR ETH & PROF ID	<i>3 credits</i>
This course is designed to help students learn about marriage and family counseling/therapy as a distinct profession and about its corresponding ethical codes.		
631	ELEM/SECD SCHOOL COUNSELING	<i>3 credits</i>
Introductory class; examines elementary and secondary school counseling practices.		
635	COMMUNITY COUNSELING	<i>3 credits</i>
Overview of community and college counseling services; their evaluation, philosophy, organization and administration.		
636	COLLEGE ADMISSION COUNSELING I	<i>3 credits</i>
Through readings, websites, class activities, discussion, and experiential projects students will learn the fundamental skills needed to assist counselees in the college admission process.		
637	COLLEGE ADM COUNSEINGL II	<i>3 credits</i>
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	<i>3 credits</i>
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: THRY & PHILOSOPHY	<i>3 credits</i>
Examination of major counseling systems including client-centered, behavioral and existential theories. Philosophical and theoretical dimension stressed.		
645	TESTS & APPRAISAL IN COUNSEL	<i>4 credits</i>
Prerequisites: 5100:640. Study of the nature of tests and appraisal in counseling including reliability, validity, test construction and selection, administration, scoring, and basic interpretation of selected measures.		
646	MULTICULTURAL COUNSELING	<i>3 credits</i>
An examination of multicultural counseling theory and research necessary to work with culturally diverse people.		
647	CAREER DEV&COUN ACRS LIFE-SPAN	<i>3 credits</i>
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	IND & FAM DEVL P ACRS LIFE-SPAN	<i>3 credits</i>
An exploration 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.		
649	CNSLNG & PRSNL SVC IN HIGH ED	<i>3 credits</i>
Prerequisite: 635 or permission of instructor. Counseling services as related to psychological needs and problems of the college student.		
650	FILIAL THERAPY	<i>3 credits</i>
Prerequisite: 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	<i>3 credits</i>
Prerequisite: 655; pre/corequisite: 643; 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	<i>4 credits</i>

Prerequisites: 643 or 710, and 651. Knowledge and understanding of theory, research, and techniques necessary for conducting group counseling sessions. An experiential component is included.

655	MAR&FAM THER:THRY & TECHNIQUES	<i>3 credits</i>
An overview of the theory and techniques of marital and family therapy, including exposure to the history, terminology and contributions of significant persons in the field.		
656	ASMT MTH&TR ISS: MAR&FAM THRPY	<i>3 credits</i>
Prerequisite: 645. Provides advanced counseling students with the knowledge and skills in assessment methods, techniques, and instruments relevant to the practice of marriage and family therapy.		
657	CONSULTANT: COUNSELING	<i>3 credits</i>
Prerequisites: 631, 651 or permission. Examination of consultation models with focus on process and product.		
659	O & A: GUIDANCE SERVICES	<i>3 credits</i>
Prerequisite: 631 or 633 or permission. Development of a comprehensive articulated guidance and counseling program.		
660	COUNSELING CHILDREN	<i>3 credits</i>
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.		
661	SEMINAR IN GUIDANCE	<i>2 credits</i>
Prerequisites: 645, 647, 653 and 657. Primary models for understanding and modifying children's behavior in classroom including technique development and review of guidance materials and programs.		
662	PERSONALITY & ABNORML BEHAVIOR	<i>3 credits</i>
This course will examine several major theoretical approaches to personality and how they account for abnormal and psychopathological behavior related to clinical practice.		
663	DEVL GUIDANCE & EMOTIONAL EDUC	<i>3 credits</i>
An experiential seminar designed for school counselors/teachers to learn developmental guidance strategies for affective education, classroom guidance, deliberate psychological education and developmental counseling.		
664	DSM	<i>3 credits</i>
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.		
665	SEM: COUNSELING PRACTICE	<i>3 credits</i>
Prerequisite: 635 or permission. Study of topics of concern to a student specializing in community and college counseling. Topics may differ each semester according to students' needs.		
666	TREATMNT IN CLINICAL COUNSELNG	<i>3 credits</i>
This course teaches students treatment planning and research-based treatment interventions for preventing and reducing common mental disorders found in the counseling profession.		
667	MARITAL THERAPY	<i>3 credits</i>
Prerequisite: 655. In-depth study of theories and interventions which focus on the nature and quality of marital relationships.		
669	SYSTEMS THEORY- FAMILY THERAPY	<i>3 credits</i>
Prerequisite: 655. 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	<i>2 credits</i>
Prerequisites: 643, 651. Addresses clinical knowledge and skills needed for Practicum, including the counseling process, documentation, supervision, and special topics.		
675	PRACT: COUNSELING	<i>5 credits</i>
See specific program student handbook and program plan for required prerequisites. Supervised clinical experience including counseling direct service and related professional duties.		
676	PRACT: COUNSELING II	<i>2-5 credits</i>
Prerequisite: 675. Advanced supervised counseling experience.		
685	MASTER'S INTERNSHIP	<i>3 credits</i>
Prerequisite: 5600:675. Must be repeated for a minimum of 6 credit hours. May be repeated for a maximum of 12 credit hours. Paid or unpaid supervised clinical experience accomplished immediately following completion of 5600:675. Credit/noncredit.		
695	FIELD EXPERIENCE: MASTERS	<i>1-10 credits</i>
Prerequisites: permission of advisor and department chair. Placement in selected setting for purpose of acquiring experiences and/or demonstration skills related to student's counseling program.		
697	INDEPENDENT STUDY	<i>1-3 credits</i>
(May be repeated for a total of nine credits) Prerequisites: permission of advisor and department chair. Specific area of investigation determined in accordance with student needs.		
698	MASTERS PROBLEM	<i>2-4 credits</i>
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 educational guidance and counseling.		
699	MASTERS THESIS	<i>4-6 credits</i>

Prerequisites: permission of advisor and department chair. In-depth study and analysis of counseling problem.

702	ADVANCED COUNSELING PRACTICUM	<i>4 credits</i>
(May be repeated for a total of 12 credit hours) Prerequisite: 675, 720/DSM, 710. Supervised counseling experience in selected settings.		
707	SUPVSN IN COUNSELING PSYCH I	<i>4 credits</i>
Prerequisite: doctoral residency or permission. Instruction and experience in supervising graduate student in counseling.		
708	SUPVSN IN COUNSELING PSYCH II	<i>4 credits</i>
Prerequisite: doctoral residency or permission. Instruction and experience in supervising graduate student in counseling.		
709	INTRO TO COUNSELING PSYCHOLOGY	<i>2 credits</i>
Prerequisite: Graduate standing in the Collaborative Program in Counseling Psychology. Introduction to historical foundations of and recent developments in counseling psychology, with an emphasis on contemporary research literature in the field.		
710	THRY OF COUNS & PSYCHOTHERAPY	<i>4 credits</i>
Prerequisite: 3750:630 or departmental permission. Major systems of individual psychotherapy explored within a philosophy of science framework. Freudian, behavioral, Rogerian, cognitive and other. Includes research, contemporary problems and ethics.		
711	VOCATIONAL BEHAVIOR	<i>4 credits</i>
Prerequisite: 3750:630 or departmental permission. Theories and research on vocational behavior and vocational counseling. Topics include major theories on vocational behavior, empirical research on these theories, applied work in vocational counseling and applied research.		
712	PRIN&PRACT INDIV INTELGN C TEST	<i>4 credits</i>
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.		
713	PROF,ETH,& LGL ISS-COUNS PSYCH	<i>4 credits</i>
Prerequisite: doctoral residency or permission. 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.		
714	EVALUATION OF MENTAL STATUS	<i>3 credits</i>
Prerequisite: 645. Overview of methods for evaluating mental and emotional status including objective personality testing.		
715	RESEARCH DSGN IN COUNSELING I	<i>3 credits</i>
Prerequisite: doctoral residency or permission. Study of research designs, evaluation procedures and review of current research.		
716	RESEARCH DSGN IN COUNSELING II	<i>3 credits</i>
Prerequisite: doctoral residency or permission. This course is designed for doctoral students utilizing the qualitative approach for conducting research. Theory, methods, and design of qualitative inquiry are reviewed.		
717	ISS OF DIVERS IN COUN PSY	<i>4 credits</i>
Prerequisites: 3750:630; one semester of practicum work. Critical examination and application of research and theory in counseling diverse populations, focusing on race/ethnicity, sex/gender, sexual orientation, age, disability, and spirituality.		
718	HISTRY & SYSTEMS IN PSYCHOLOGY	<i>2 credits</i>
Prerequisite: 3750:630. Philosophical and scientific antecedents of psychology and details of the development of systematic viewpoints in the 19th and 20th centuries.		
720	TOP SEM: GUIDANCE & COUNSELING	<i>1-4 credits</i>
Prerequisite: permission of instructor. A topical study with a variety of disciplinary input. Staffing will be by department faculty and other professionals in counseling and related fields. A maximum of six credits may be applied to a degree.		
722	INTRODUCTION TO PLAY THERAPY	<i>3 credits</i>
Prerequisites: enrolled 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.		
723	LEGAL & ETHICL ISS IN CNSLR ED	<i>4 credits</i>
Prerequisite: admission into the Counselor Education and Supervision Program. Examination of major ethical/legal issues in the field of counseling and marriage & family therapy.		
724	PEDAGY IN COUNED&SUP:THEO&PRAC	<i>3 credits</i>
This course provides an in-depth study of instructional principles, pedagogy, and evaluation procedures in counselor education and supervision.		
725	DOCTORAL PROF SEM IN CNSLR ED	<i>3 credits</i>
Prerequisite: admission to the doctoral program in Counselor Education and Supervision To be taken the first fall term upon admission. Required of all Counselor Education & Supervision doctoral students. Professional issues in the counseling field, doctoral identity acculturation, and development are covered.		
726	DOC RES PROPOSAL IN COUNS EDUC	<i>3 credits</i>

Prerequisites: 715, 5100:744. This course provides theoretical and practical aspects of designing dissertation research in counseling and counselor education and supervision and successfully defending a draft of a proposal design.

728	ADV DIVERSITY IN COUNS EDUC	<i>3 credits</i>
This course examines issues of human diversity broadly, including knowledge, awareness and skills especially related to mental health service and training in counselor education and supervision.		
730	USE OF ASSESSMENT DATA	<i>4 credits</i>
Prerequisite: Doctoral level status. Study of the methods and materials used to assess individuals and the effective use of the data obtained leading to professional decisions reading the diagnosis of individual's present condition, and recommendations for appropriate treatment/intervention.		
732	ADD COUN I: THEORY & ASSESSMNT	<i>3 credits</i>
This course is designed to teach graduate-level students the history, foundations, theoretical models, assessment strategies, and diagnostic procedures associated with addictive disorders.		
734	ADD COUN II: TR PLAN & INT STR	<i>3 credits</i>
This course is designed to teach graduate-level students the process of treatment planning and range of treatment interventions used with addictive disorders.		
737	CLINICAL SUPERVISION I	<i>4 credits</i>
Prerequisite: successful completion of advanced practicum. Instruction and experience supervising graduate students in counseling.		
738	CLINICAL SUPERVISION II	<i>4 credits</i>
Prerequisite: successful completion of advanced practicum and successful completion of supervision I. Instruction and experience in supervising graduate students in counseling.		
756	OUTCOME RSCH MAR & FAM THERAPY	<i>3 credits</i>
Prerequisite: 667; 5100:640, 741. This course will provide an in-depth examination of marriage and family therapy outcome research.		
760	COUNSELING CHILDREN	<i>3 credits</i>
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.		
785	DOCTORAL INTERNSHIP	<i>3 credits</i>
May be repeated for a total of 6 credit hours. Prerequisite: Completion of 5600:702, 737 and 738. Supervised experience in clinical settings, teaching, supervision, or research. 600 clock hours must be completed in over two consecutive semesters. Credit/noncredit.		
796	COUNSELING PSYCHOLOGY PRACT	<i>4 credits</i>
(May be repeated for a total of 12 credits) 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.)		
797	IND RDG&RSCH COUNSELING PSYCH	<i>1-5 credits</i>
(May be repeated) Prerequisite: permission of instructor. Independent readings and/or research in an area of counseling psychology under the direction of a faculty member.		
895	FLD EXP: DOCTORAL	<i>1-6 credits</i>
(May be repeated) Prerequisite: doctoral candidate status. Placement in selected setting for purpose of acquiring experiences and/or developing skills related to student's doctoral program.		
897	INDP STUDY: EDUC GUID & COUNS	<i>1-3 credits</i>
(May be repeated for a total of nine credits) Prerequisites: permission of advisor and department chair. Specific area of investigation determined in accordance with student needs.		
898	RES PROJ: SPECIAL AREAS	<i>1-2 credits</i>
(May be repeated) Prerequisites: permission of advisor and department chair. Study, analysis and reporting of counseling problem.		
899	DOCTORAL DISSERTATION	<i>1-20 credits</i>
Prerequisites: permission of major doctoral advisor and department chair. Study, design and analysis of counseling problem.		



Special Education (5610)

100	ORIENT TO INTERVENT SPECIALIST	<i>0 credits</i>
Prerequisite: admission to Intervention Specialist teacher education program; corequisite: 5100:200. Orientation to the information and strategies necessary for a student to be successful in the program, including portfolio development.		
206	SP: GIFTED	<i>1 credits</i>
NULL		
225	INTRO: EXCEPTIONALITIES	<i>3 credits</i>
Prerequisite: 13-15 sem. hrs. with a 'C' or better in specific GenEd courses; 5100:200 (may be taken as prerequisite or corequisite); FBI/BCI background checks. Survey course covering the identification, developmental characteristics and intervention strategies for children and youth with exceptionalities across educational and community settings. 1 field hour.		
380	MATH METHODS: SPEC EDUCATION	<i>3 credits</i>
Prerequisite: Admission to the Teacher Education Program. Ensure the understanding of mathematics and to promote the prospective special education teacher's confidence in his/her own ability to teach mathematics.		
395	FIELD EXP: SPECIAL EDUCATION	<i>1-3 credits</i>
Supervised work with youngsters, individually and in groups in school and/or community settings.		
403	STU TEACH COLLOQ: SPECIAL EDUC	<i>1 credits</i>
An examination of problems, issues, and practices encountered during the student teaching experience.		
430	HONORS RES PROJ: SPECIAL EDUC	<i>1-6 credits</i>
(May be repeated for a total of six credits) Prerequisite: Permission of student's preceptor. Carefully defined individual study demonstrating originality and sustained inquiry.		
440	DEV CHARACT OF EXCEPTNL INDIV	<i>3 credits</i>
Prerequisite: Admission to a College of Education Teacher Preparation Program or permission of the 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)		
444	DEV CHAR INTELLECT GIFTD INDV	<i>3 credits</i>
See department for course description.		
447	INDV-MLD/MOD ED NEEDS:CH & IMP	<i>4 credits</i>
Prerequisite: 225. Survey of the etiology, identification, classification, developmental characteristics of, and intervention strategies for individuals with mild/moderate educational needs.		
448	INDV-MOD/INT ED NEEDS:CH & IMP	<i>4 credits</i>
Prerequisite: 225. Survey of the etiology, identification, classification, and developmental characteristics of individuals with moderate/intensive educational needs.		
450	SPEC ED PROG: EARLY CHILDHOOD	<i>3 credits</i>
Prerequisites: 225, 447 or 448. Developmental patterns of young children with disabilities and developmentally/exceptionally appropriate practices with respect to programming and adaptations. (20 field hours)		
451	SPEC ED PROG: MILD/MODERATE I	<i>3 credits</i>
Prerequisites: 225, 447. 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)		
452	SPEC ED PROG: SECD/TRANSITION	<i>3 credits</i>
Study of diagnostic prescriptive service delivery systems designed to accommodate developmental patterns of secondary-level students with exceptionalities. (20 field hours)		
453	SPEC ED PROG: MOD/INTENSIVE I	<i>4 credits</i>
Prerequisites: 448/548. Development of the programming strategies including assessment, inter/transdisciplinary models, family involvement, IFSP/IEP/IP development, instructional practices based upon legal/ethical principles for individuals with moderate/intensive educational needs. (20 field hours)		
454	SPEC ED PROG: MOD/INTENSIVE II	<i>4 credits</i>
Prerequisites: 448, 453. Advanced 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)		
457	SPEC ED PROG: MILD/MODERATE II	<i>4 credits</i>
Prerequisites: 447, 451. 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)		
459	COLL & CONSULT:SCH & COMM	<i>3 credits</i>

Prerequisite: 225. Provides professional educators/intervention specialists with skills in collaboration and consultation for working with parents of exceptional individuals and other professionals within school/community settings.

460	FAMILY DYN & COMM IN EDUC PROC	<i>3 credits</i>
Prerequisite: 225. A study of family theory and structure along with beginning techniques for working with families of students with exceptionalities, in educational and community settings.		
461	SP ED PRG: ERLY CHLDHD MOD/INT	<i>3 credits</i>
Prerequisites: 440, 448. Developmental patterns of young children with moderate/intensive needs (ages 3-8) and developmentally appropriate practices in programming and adaptations. (20 field hours)		
463	ASSESSMENT IN SPECIAL EDUC	<i>3 credits</i>
Prerequisite: 225. Prepares student to select, administer and interpret formal and informal assessment procedures and use resulting data in planning educational programs for exceptional individuals.		
464	ASSESS&EVAL ERLY CHLDH SPEC ED	<i>3 credits</i>
Prerequisites: 225, 448. The assessment of children three to eight and their environment who are at risk for disabilities or currently in special education.		
467	MGMT STRATEGIES IN SPEC EDUC	<i>3 credits</i>
Prerequisite: 225. Content emphasizing the development of application strategies with a variety of behavior management models to mediation of behaviors with exceptional individuals.		
470	CLINICAL PRACT IN SPECIAL EDUC	<i>3 credits</i>
Prerequisite: Permission of instructor. Corequisites: 403 and 486 or 487. Provides a pre-student teaching experience for students in the areas of assessment, program planning, instructional planning and presentation, classroom management, adaptations, and collaboration with parents and other educational professionals.		
479	SEM: INVIT STDS IN SPECIAL ED	<i>1-2 credits</i>
(May be repeated for a total of four credits) Topical study with a varied array of disciplinary input. Staffing will be invited members of allied and contributing professions active in management of exceptional children.		
485	STU TEACH: EARLY CHLDHD INT SP	<i>11 credits</i>
Prerequisites: Approval of the Student Teaching Committee, based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio. Corequisite: 403. Planned teaching experience in schools selected and supervised by the Office of Field Experience.		
486	STU TEACH: MILD/MOD EDUC NEEDS	<i>11 credits</i>
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio. Corequisite: 403. Planned teaching experience in schools selected and supervised by the Office of Field Experience.		
487	STU TEACH: MOD/INT EDUC NEEDS	<i>11 credits</i>
Prerequisites: Approval of the Student Teaching Committee, considered based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio. Corequisites: 403 and 470. Planning teaching experience in schools selected and supervised by the office of Field Experience.		
488	STU TCHG: EARLY CHLD/EARLY INT	<i>6 credits</i>
Approval of the Student Teaching Committee, based upon approved application to student teaching, passing PRAXIS II subject test, and approved portfolio. Corequisites: 5200:495, 5610:403, 5610:470. Planned teaching experience in schools selected and supervised by the Office of Field Experience.		
490	W: SPECIAL EDUCATION	<i>1-3 credits</i>
(May be repeated for a total of six credits) Designed to explore special topics in in-service or preservice education on a needs basis.		
491	W: SPECIAL EDUCATION	<i>1-3 credits</i>
(May be repeated for a total of six credits) Designed to explore special topics in in-service or preservice education on a needs basis.		
492	W: SPECIAL EDUCATION	<i>1-3 credits</i>
(May be repeated for a total of six credits) Designed to explore special topics in in-service or preservice education on a needs basis.		
493	W: SPECIAL EDUCATION	<i>1-3 credits</i>
(May be repeated for a total of six credits) Designed to explore special topics in in-service or preservice education on a needs basis.		
497	INDP STUDY: SPECIAL EDUCATION	<i>1-3 credits</i>
Specific area of investigation determined in accordance with student's needs.		
540	DEV CHARACT OF EXCEPTNL INDIV	<i>3 credits</i>
A survey course covering the identification, developmental characteristics, and intervention strategies for exceptional children and youth across education and community settings. (1 field hour)		
544	DEV CHAR INTELLECT GIFTD INDV	<i>3 credits</i>
Prerequisite: 540. Survey of etiology, diagnosis, classification and developmental characteristics of intellectually gifted individuals.		
547	INDV-MLD/MOD ED NEEDS:CH & IMP	<i>4 credits</i>
Survey of the etiology, identification, classification, developmental characteristics of, and intervention strategies for individuals with mild/moderate educational needs.		
548	INDV-MOD/INT ED NEEDS:CH & IMP	<i>4 credits</i>

Prerequisites: 540. Survey of the etiology, identification, classification, and developmental characteristics of individuals with moderate/intensive educational needs.

550	SPEC ED PROG: EARLY CHILDHOOD	<i>3 credits</i>
Prerequisite: 540. Developmental patterns of young children with disabilities and developmentally/exceptionally appropriate practices with respect to programming and adaptations. (20 field hours)		
551	SPEC ED PROG: MILD/MODERATE I	<i>3 credits</i>
Prerequisites: 540 or 547. 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)		
552	SPEC ED PROG: SECD/TRANSITION	<i>3 credits</i>
Study of diagnostic prescriptive service delivery systems designed to accommodate developmental patterns of secondary level students with exceptionalities. (20 field hours)		
553	SPEC ED PROG: MOD/INTENSIVE I	<i>4 credits</i>
Prerequisite: 548. Development of the programming strategies including assessment, inter/transdisciplinary models, family involvement, IFSP/IEP/IP development, instructional practices based upon legal/ethical principles for individuals with moderate/intensive educational needs. (20 field hours)		
554	SPEC ED PROG: MOD/INTENSIVE II	<i>4 credits</i>
Prerequisites: 448/548, 453/553. Advanced 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)		
557	SPEC ED PROG: MILD/MODERATE II	<i>4 credits</i>
Prerequisites: 447/547, 451/551. 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	COLL & CONSULT IN SCH & COMM	<i>3 credits</i>
Prerequisites: 540 and 547 or 548, or permission of instructor. Provides professional educators/intervention specialists with skills in collaboration and consultation for working with parents of exceptional individuals and other professionals within school/community settings.		
560	FAMILY DYN & COMM IN EDUC PROC	<i>3 credits</i>
Prerequisites: 440/540, 447/547 or 448/548. A study of family theory and structure along with beginning techniques for working with families of students with exceptionalities, in educational and community settings.		
561	SP ED PRG: ERLY CHLDHD MOD/INT	<i>3 credits</i>
Prerequisites: 440/540, 448/548. Developmental patterns of young children with moderate/intensive needs (ages 3-8) and developmentally appropriate practices in programming and adaptations. (20 field hours)		
563	ASSESSMENT IN SPECIAL EDUC	<i>3 credits</i>
Prerequisites: 440/540, 447/547 or 448/548. Prepares student to select, administer and interpret formal and informal assessment procedures and use resulting data in planning educational programs for exceptional individuals.		
564	ASSESS&EVAL ERLY CHLDH SPEC ED	<i>3 credits</i>
Prerequisites: 440/540, 448/548. The assessment of children (three to eight) and their environment who are at risk for disabilities or currently in special education.		
567	MGMT STRATEGIES IN SPEC EDUC	<i>3 credits</i>
Prerequisites: 440/540, 447/547 or 448/548. Content emphasizing the development of application strategies with a variety of behavior management models for mediation of behaviors with exceptional individuals		
568	ADVANCED BEHAVIOR MANAGEMENT	<i>3 credits</i>
Prerequisites: 567. Advanced techniques for remediating problematic behavior; establishing effective repertoires and evaluating research relevant to classroom management will be covered. Behavioral theory will be stressed.		
570	CLINICAL PRACT IN SPECIAL EDUC	<i>3 credits</i>
Prerequisite: Departmental Consent Required. Provides a pre-student teaching experience for students in the areas of assessment, program planning, instructional planning and presentation, classroom management, adaptations, and collaboration with parents and other educational professionals.		
579	SEM: INVIT STDS IN SPECIAL ED	<i>1-2 credits</i>
(May be repeated for a total of four credits) Topical study with a varied array of disciplinary input. Staffing will be invited members of allied and contributing professions active in management of exception children.		
590	W: SPECIAL EDUCATION	<i>1-3 credits</i>
See department for course description.		
591	W: SPECIAL EDUCATION	<i>1-3 credits</i>
See department for course description.		
592	W: SPECIAL EDUCATION	<i>1-3 credits</i>
See department for course description.		
593	W: SPECIAL EDUCATION	<i>1-3 credits</i>
See department for course description.		
601	SEM: SPEC EDUC CURRIC PLANNING	<i>3 credits</i>
Prerequisite: certification 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	<i>3 credits</i>
Study of administration and supervisory practices unique to special education classes and services.		
604	COLLAB & CONSUL SKILL-SPEC ED	<i>3 credits</i>
Advanced consideration of the roles and responsibilities of parents, professionals and individuals with disabilities in the development and implementation of educational interventions and related issues.		
605	INCLUSION MODELS & STRATEGIES	<i>3 credits</i>
History, theory, philosophy, legislative mandates, models, strategies, curriculum modifications, methods/materials adaptations which support the inclusion of students with disabilities. Emphasis on collaboration and teaming. (3 field hours)		
606	RSCH APPLICATION IN SPECIAL ED	<i>3 credits</i>
Prerequisites: admission to graduate program in special education and 5100:640. An examination of quantitative and qualitative research/methodology and its application to the field of special education. Applied research is an essential component of the course.		
607	CH&NDS-IND DEM PRVS DEV DISORD	<i>3 credits</i>
This course provides a survey of the etiology, diagnoses, characteristics and needs of individuals with pervasive developmental disorders.		
609	PROG ISS-IND W/PRVS DEV DISORD	<i>3 credits</i>
This course provides the educator with a comprehensive examination of the educational practices and intervention strategies necessary when providing interventions for individuals demonstrating pervasive developmental disorders.		
610	CH&NDS-IND W/BHV & EMTN DISORD	<i>3 credits</i>
This course provides a survey of the etiology, diagnoses, classification, and developmental (birth through adult) characteristics of individuals in need of behavioral support.		
611	SEM: LEGAL ISSUES IN SPEC EDUC	<i>3 credits</i>
Prerequisites: admission to graduate program in special education and 5170:720 or permission of instructor. A culminating seminar for graduate students in special education designed to study, examine and reflect upon the legal aspects of historical and current trends, issues and practices.		
612	SEM: SOC/ETH ISSUES SPEC EDUC	<i>3 credits</i>
A culminating seminar for graduate students in special education designed to study, examine and reflect upon the social and ethical aspects of historical and current trends, issues and practices.		
627	ST: SPECIAL EDUCATION	<i>1-4 credits</i>
Prerequisite: permission of advisor or department chair. In-depth examination of current critical research on issues in Special Education.		
690	STUDENT TEACHING: SPECIAL EDUC	<i>11 credits</i>
Prerequisite: Permission of advisor or department chair; Corequisite: 570. Directed teaching under supervision of a special teacher and a university supervisor.		
691	SCH-BSD EXTERN SEMINAR	<i>1 credits</i>
Taken concurrently with School-based Externship in Audiology or Speech-Language Pathology. Review and discussion of issues raised during externship experience.		
692	SCH-BSD EXTERN: SCH AUDIOLOGY	<i>6 credits</i>
Directed professional experience under the supervision of a licensed and certified Audiologist and a University supervisor.		
693	SCH-BSD EXTERN: SPCH LANG PATH	<i>6 credits</i>
Directed professional experience under supervision of a licensed and certified Speech-Language Pathologist and a University supervisor.		
694	RES PROJ: SPECIAL AREA	<i>3 credits</i>
An in-depth study of an identified topic in a scholarly paper.		
695	FLD EXP: MASTERS	<i>1-4 credits</i>
(May be repeated for a total of eight credits) Designed to provide on-the-job experience in a special education program on an individual basis.		
697	INDP STUDY: SPECIAL EDUCATION	<i>1-3 credits</i>
(May be repeated for a total of nine credits) Specific area of investigation determined in accordance with student's needs.		
698	MASTERS PROBLEM	<i>2-4 credits</i>
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.		
699	MASTERS THESIS	<i>4-6 credits</i>
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.		



School Psychology (5620)

490	W: SCHOOL PSYCHOLOGY	<i>1-2 credits</i>
Prerequisite: permission of instructor. Opportune topical experience provided periodically as needed and/or as resources become available.		
491	W: SCHOOL PSYCHOLOGY	<i>1-3 credits</i>
Prerequisite: permission of instructor. Opportune topical experience provided periodically as needed and/or as resources become available.		
492	W: SCHOOL PSYCHOLOGY	<i>1-3 credits</i>
Prerequisite: permission of instructor. Opportune topical experience provided periodically as needed and/or as resources become available.		
494	SCHOOL PSYCHOLOGY INSTITUTES	<i>1-4 credits</i>
Prerequisite: permission of instructor. Specifically designed learning experience for program graduate focusing on critical topics.		
590	W: SCHOOL PSYCHOLOGY	<i>1-2 credits</i>
Prerequisite: permission of instructor. Opportune topical experience provided periodically as needed and/or as resources become available.		
591	W: SCHOOL PSYCHOLOGY	<i>1-3 credits</i>
Prerequisite: permission of instructor. Opportune topical experience provided periodically as needed and/or as resources become available.		
592	W: SCHOOL PSYCHOLOGY	<i>1-3 credits</i>
Prerequisite: permission of instructor. Opportune topical experience provided periodically as needed and/or as resources become available.		
594	SCHOOL PSYCHOLOGY INSTITUTES	<i>1-4 credits</i>
Prerequisite: permission of instructor. Specifically designed learning experience for program graduate focusing on critical topics.		
600	SEM: ROLE & FNCTN OF SCH PSYCH	<i>3 credits</i>
Prerequisite: permission of instructor. Seminar on role and function of school psychologist. The course, tailored to meet individual needs of trainees, is a consideration of professional standards of school psychology practice.		
601	COGN FUNCT MDLS PRESCR ED PLAN	<i>3 credits</i>
Prerequisite: permission of instructor. Consideration of cognitive development theories and their application for educational programming.		
602	BEHAVIORAL ASSESSMENT	<i>3 credits</i>
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.		
603	CONSULTN STRAT IN SCHOOL PSYCH	<i>3 credits</i>
Prerequisite: permission of instructor. A consideration of consultant roles in the practice of school psychology as related to consultant process and with school and agency personnel, parents and children.		
610	EDUC DIAG FOR SCHOOL PSYCHLGST	<i>4 credits</i>
Prerequisites: permission of instructor. Clinical study and application of current assessment approaches applicable in assessment of children's learning problems.		
611	PRACT: SCHOOL PSYCHOLOGY	<i>4 credits</i>
Prerequisite: permission of instructor. Laboratory experience in psycho-educational study of individual children who have learning problems in school. (Repeat requirement).		
630	INTERN: SCHOOL PSYCHOLOGY	<i>3 credits</i>
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. Additional readings required.		
631	INTERN: SCHOOL PSYCHOLOGY	<i>3 credits</i>
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. Additional readings required.		
640	FLD SEM I: CUR PRF T/I SCH PSY	<i>3 credits</i>
Prerequisite: permission of instructor. Consideration of pertinent topics/issues in practice of school psychology with emphasis upon field-based concerns of a practicing school psychologist.		
641	FLD SEM II: LOW INCID/REL INQ	<i>3 credits</i>

Prerequisite: permission of instructor. Consideration of pertinent topics/issues in practice of school psychology with emphasis on field-based concerns of a practicing school psychologist.

694	RES PROJ: SPECIAL AREAS	<i>1-3 credits</i>
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Prerequisite: permission of advisor. Study, analysis and reporting of school psychology problem.

695	FLD EXP: MASTERS	<i>1-3 credits</i>
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Prerequisite: permission of instructor. Practical school psychology-related experience in school setting.

697	INDP STUDY: SCHOOL PSYCHOLOGY	<i>1-4 credits</i>
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Prerequisites: permission of advisor and supervisor of the independent study. Documentation of specific area of investigation. Nature of the inquiry to be determined by student-supervisor agreement.

698	MASTERS PROBLEM	<i>2-4 credits</i>
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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 school psychology.

699	MASTERS THESIS	<i>4-6 credits</i>
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Prerequisite: permission of instructor. Thorough study, analysis and reporting in depth of an educational problem; field projects in special areas; synthesis of existing knowledge in relationship to specific topic.



Special Education Programs (5800)

492	W: READING	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.		
493	W: EXCEPTIONAL CHILDREN	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.		
494	INTERNATIONAL SCHOOL STUDY	<i>3-6 credits</i>
On-the-scene study of education in foreign countries, usually by concentrating on the study of schools in one restricted geographical area.		
590	W: ECONOMIC ED OR SOCIAL STDS	<i>1-3 credits</i>
Individual work under staff guidance on curriculum problems; utilization of community resources; planning of curriculum units.		



College of Business Administration

- [Cooperative Education \(6000\)](#)
- [General Business \(6100\)](#)
- [Finance for Non-Business Students \(6140\)](#)
- [Accountancy \(6200\)](#)
- [Entrepreneurship \(6300\)](#)
- [Finance \(6400\)](#)
- [Management \(6500\)](#)
- [Marketing \(6600\)](#)
- [Professional** \(6700\)](#)
- [International Business \(6800\)](#)



Cooperative Education (6000)

301

COOPERATIVE EDUCATION

0 credits

(May be repeated) For cooperative education students only. Work experience in business, industry, or governmental agency. Comprehensive performance evaluation and written report required.



General Business (6100)

100	CAREER PLANNING IN BUSN ADMN	<i>1 credits</i>
Examines the academic, professional, and personal skills required for a successful business career. Develops student career plan. Provides exposure to the variety of career opportunities available in public and private sector organizations.		
101	GLOBAL BUS CONCPPTS & PRACTICES	<i>3 credits</i>
An introductory course presenting the business firm throughout the world as an integrative unit that uses information from various functional fields in decision-making.		
201	INTRODUCTION TO E-BUSINESS	<i>3 credits</i>
Prerequisite: 24 credits. Provides a broad overview of e-business strategies, products and technologies. Discusses transformation of marketing, production and other business functions; and related legal, political, ethical and cultural issues.		
350	ST: BUSINESS	<i>1-3 credits</i>
Opportunity to study special topics and current issues in business. May be repeated with a change of subject.		
495	INTERNSHIP IN BUSINESS ADMN	<i>3 credits</i>
Prerequisite: permission of designated faculty member. On-the-job experience with public or private sector organizations in the student's major field of study. Individual assignments are approved and supervised by the designated member of the faculty in the student's major field. Periodic reports and term papers are required.		
497	HONORS PROJECT IN BUSINESS ADM	<i>2-3 credits</i>
Prerequisite: senior standing in Honors Program. Individual directed research relevant to the student's major. Group integrated symposium or an individualized study format available.		
499	INDP STUDY: BUSINESS ADMN	<i>3 credits</i>
Prerequisite: permission of designated faculty member. Provides a means for individualized study of a problem(s) or issue in the student's major field of study.		



Finance for Non-Business Students (6140)

131	PERSONAL FINANCE	<i>3 credits</i>
<small>(For non-College of Business Administration students.) A survey analysis of personal financial decisions related to budgeting, insurance, credit, and investments.</small>		
300	INTRODUCTION TO FINANCE	<i>3 credits</i>
<small>(For non-College of Business Administration students.) Studies the sources and uses of funds for business.</small>		
341	CONTEMPORARY INVESTMENTS	<i>3 credits</i>
<small>(For non-College of Business Administration students.) Fundamentals of investing in stocks, bonds, derivatives, mutual funds, and closed-end investment companies for the individual investor.</small>		



Accountancy (6200)

201	ACCOUNTING PRINCIPLES I	<i>3 credits</i>
Prerequisite: 24 hours of college credit. Introduction to accounting principles including accounting for revenues, expenses, assets, liabilities, equity, accounting standards and financial statements.		
202	ACCOUNTING PRINCIPLES II	<i>3 credits</i>
Prerequisite: 201. Information needs of management. Analysis of cash flow and financial statements. Study of product costing systems; standard costs; planning, budgeting, and control systems; overhead cost allocation; cost-volume-profit analysis; relevant costing; and capital budgeting.		
250	SPRDSHT MODEL & DECISION ANALY	<i>3 credits</i>
Prerequisite: Spreadsheet proficiency and either 201 or 24 semester credit hours completed. In-depth study of spreadsheet applications and databases to support decision-making and problem-solving in business and accounting.		
301	COST MANAGEMENT AND CONTROL	<i>3 credits</i>
Prerequisites: Admission to College of Business; 3250:200, and grades of not less than "C" in 201, 202, and 250. Product cost accumulation, cost management strategies, performance evaluation, and application of cost in business decisions.		
316	FINANCIAL APPLICATIONS DEVLPMT	<i>3 credits</i>
Prerequisite: 201, 6500:315. Analysis, design and development of financial and control applications. Integration of intelligent agents into financial information systems for risk assessment, control, and assurance of businesses processes.		
320	ACCOUNT SYSTMS & INTERNAL CONT	<i>3 credits</i>
Prerequisites: admission to College of Business Administration and grade of not less than "C" in 201 and 250. Covers analysis design, implementation, governance and evaluation of accounting systems; business process modeling and accounting transaction cycles; and internal control.		
321	FINANCIAL REPORTING & ANALYS I	<i>3 credits</i>
Prerequisite: admission to College of Business Administration, a grade of not less than a "C" for accounting majors in 201 or permission. Financial reporting and analysis of cash, receivables, inventories, property, plant and equipment, intangibles and liabilities. Covers U.S. GAAP, IFRS, SEC reporting, and corporate financial reporting policy. Emphasizes professional accounting research.		
322	FINANCIAL REPORTING & ANALY II	<i>3 credits</i>
Prerequisite: admission to College of Business Administration and a grade of not less than a "C" in 321 or permission. Financial reporting and analysis of owners' equity, investments, revenue recognition, tax allocations, pensions, leases, accounting changes, cash flows, segments, and interim periods. Covers U.S. GAAP, IFRS, SEC reporting, and corporate financial reporting policy. Emphasizes professional accounting research.		
408	INTERNTL FIN REPORT & ANALYS	<i>3 credits</i>
Prerequisites: admission to the College of Business Administration, a grade of not less than a "C" in 201 and 202, and an international business major (6800) or 321. Covers international accounting standards, analysis of foreign financial statements, international tax issues, accounting for foreign currency, transfer pricing and international auditing standards.		
410	TAXATION FOR FINANCIAL PLAN	<i>3 credits</i>
Provides students preparing for careers in financial planning with the necessary knowledge of federal tax law as applied to individuals and businesses. Not to be used as an accounting elective.		
420	ADV FINANCIAL REPORT & ANALYS	<i>3 credits</i>
Prerequisite: Admission to College of Business Administration and 322. Examination of accounting theory and financial reporting practices for 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.		
430	CONTEMPORARY FEDERAL TAXATION	<i>3 credits</i>
Prerequisite: Admission to College of Business Administration and a grade of not less than a "C" in 201, 202 and 321 or permission. Examines current federal tax practices with an emphasis on individual taxes. Master of Taxation students will not be able to take this course to satisfy tax electives in the Master of Taxation program.		
431	BUSINESS ENTITY TAXATION	<i>3 credits</i>
Prerequisite: admission to College of Business Administration and 430/530 or permission. Federal income tax law related to partnerships, corporations, trusts and estates; also includes an overview of federal estate and gift tax law.		
440	ASSURANCE SERV & PROFES RESPON	<i>3 credits</i>
Prerequisites: admission to College of Business Administration, 320, 322 and 430. Examines assurance services including external auditing and professional responsibilities. Focuses on standards, professional ethics and independence requirements, and procedures used in conducting assurance services.		

441	INFORMATION SYS AUDIT & CONTRL	<i>3 credits</i>
Prerequisites: admission to College of Business Administration, 440 and 454 or permission. Learn the fundamental concepts and practices of information systems audit control. Use of contemporary control frameworks, objectives and standards to discuss integrity, control, governance, assurance and effectiveness of financial information systems.		
450	ADV SPRDSHT MODL & DECISN ANLY	<i>3 credits</i>
Prerequisites: Admission to the College of Business Administration, 202, 250, 322, 6400:301 and 6500:304 or permission. Study advanced topics in spreadsheet modeling and decision analysis in the context of accounting and finance, including security, control and quality assurance of spreadsheets.		
454	INFORMATION SYSTEMS SECURITY	<i>3 credits</i>
Prerequisites: admission to College of Business Administration and, 320 or 6500:310. Focus on information systems risk and security in distributed business environments; develop policies, practices and systems for security of computers and data in business with emphasis on financial information systems.		
460	ADVANCED MANAGERIAL ACCOUNTING	<i>3 credits</i>
Prerequisites: admission to the College of Business Administration and 301 and 320, 6500:330 or 6500:333. The use of financial and non-financial information in decision making, performance evaluation of business units, strategy and governance, and management control.		
470	GOVERNMENTAL ACCOUNTING	<i>3 credits</i>
Prerequisites: 321 or equivalent. Theory and procedures involved in application of fund accounting, budgetary control, appropriations and various accounting systems to governmental units, educational, medical and other non-profit institutions. Covers financial reporting for government and not for profit entities and GASB standards.		
490	ST: ACCOUNTING	<i>1-3 credits</i>
Prerequisite: Permission of instructor. Opportunity to study special topics and current issues in accounting. May be repeated with a change of subject.		
520	ADV FINANCIAL REPORT & ANALYS	<i>3 credits</i>
Prerequisites: 622 or equivalent. Examination of accounting theory and financial reporting practices for 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	<i>3 credits</i>
Prerequisite: 621 or equivalent or by permission. Examines current federal tax practices with an emphasis on individual taxes. Includes a research component. Master of Taxation students will not be able to take this course to satisfy tax electives in the Master of Taxation program.		
531	BUSINESS ENTITY TAXATION	<i>3 credits</i>
Prerequisite: admission to College of Business Administration and 530 or permission. Federal income 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 tax electives in the Master of Taxation program.		
540	ASSURANCE SERV & PROFES RESPON	<i>3 credits</i>
Prerequisite: 621 or equivalent. Examine 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.		
541	INFORMATION SYS AUDIT & CONTRL	<i>3 credits</i>
Prerequisite: 540 or permission of instructor. Learn the fundamental concepts and practices of information systems audit control. Use control objectives and standards by information systems control, audit and security organizations.		
554	INFORMATION SYSTEMS SECURITY	<i>3 credits</i>
Prerequisite: 603 or equivalent. Focus on information systems risk and security in distributed business environments; develop policies, practices, and systems for security of computers and data in business. Includes a research component.		
570	GOVERNMENTAL ACCOUNTING	<i>3 credits</i>
Prerequisites: 621 or equivalent. Theory and procedures involved in application of fund accounting, budgetary control, appropriations and various accounting systems to governmental units, educational, medical and other non-profit institutions. Covers financial reporting for government and not for profit entities and GASB standards. Includes a research component.		
580	ACCOUNTING PROBLEMS	<i>3 credits</i>
Prerequisite: 322. Independent research on advanced accounting problem in student's specific area of interest.		
591	W: ACCOUNTING	<i>1-3 credits</i>
(May be repeated) Prerequisite: permission of instructor. Group study of accounting under faculty guidance. May not be used to meet undergraduate or graduate accounting major requirements, but may be used for elective credit only with permission of instructor or department.		
601	FINANCIAL ACCOUNTING	<i>3 credits</i>
Introductory course for student with no accounting background. Examines accounting principles as applied to financial problems of firm.		
603	ACCTNG DECISION SUPPORT SYSTEM	<i>3 credits</i>
Introduction to basic financial statement information; coverage of databases, electronic spreadsheets, and other information technology tools that support accounting and assurance services.		
607	FIN DATA COMM & ENTRPRSE INTEG	<i>3 credits</i>

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 & COST MGMT	<i>3 credits</i>
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, planning, decision making, and performance evaluation.		
615	ERP & FINANCIAL DATA COMM	<i>3 credits</i>
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	CORP ACCT & FINANCIAL REPORT I	<i>3 credits</i>
Prerequisite: 601 or graduate accounting status. An examination of generally accepted accounting principles in theory and application, as well as financial statement preparation. Not open to students who have taken Intermediate Accounting I.		
622	CORP ACCT & FINANC REPORT II	<i>3 credits</i>
Prerequisite: 621 or permission of the instructor. A continuation of 6200:621 which examines generally accepted accounting principles in theory and practice, as well as financial statement preparation. Not open to students who have taken Intermediate Accounting II.		
627	FEDERAL TAXATION	<i>3 credits</i>
Survey of federal taxation of entities, tax research, and individual taxation. Tax cases, projects, and problems will be assigned.		
628	TAX RESEARCH	<i>3 credits</i>
Prerequisite: admission to Masters of Tax program or special permission. Designed to develop basic research competence involving federal income, estate, and gift tax laws.		
629	TAX CRIMES AND FORENSICS	<i>3 credits</i>
Prerequisites: 531 or 627 or equivalent or permission. In-depth study of tax and tax related crimes charged under provisions of the IRS code and titles 18 and 31 of the U.S. code.		
631	CORPORATE TAXATION I	<i>3 credits</i>
Prerequisite: Admission to Master of Tax program or special permission. Detailed examination of tax problems of corporations and their shareholders. Formation, distribution, redemption, and liquidation.		
632	TAXATION OF TRANS IN PROPERTY	<i>3 credits</i>
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	<i>3 credits</i>
Prerequisite: admission to Master of Tax program or special permission. Analyzes provisions of federal estate and gift tax laws and tax consequences of testamentary and lifetime transfers.		
637	CONTEMPORARY ACCOUNTING ISSUES	<i>3 credits</i>
Prerequisite: 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	<i>3 credits</i>
Prerequisite: 540 or equivalent or permission. Conceptual foundations and current research on professional and internal auditing. Includes government regulation and litigation, statistics, computer systems as well as current and prospective developments in auditing.		
641	TAXATION OF PARTNERSHIPS	<i>3 credits</i>
Prerequisite: admission to Master of Tax program or special permission. Examines intensively provisions of subchapters K and S of Internal Revenue Code and uses of partnerships for tax planning.		
642	CORPORATE TAXATION II	<i>3 credits</i>
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	<i>3 credits</i>
Prerequisite: admission to Master of Tax program or special permission. Attention focused on timing of income and expenses for individual businesses and its relation to tax planning..		
644	INC TAX- DEC, ESTATES & TRUSTS	<i>3 credits</i>
Prerequisite: 633. An in-depth examination of the decedent's last income tax return along with the analysis of income taxation of trusts and estates and their creators, fiduciaries and beneficiaries.		
645	ADVANCED INDIVIDUAL TAXATION	<i>3 credits</i>
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	CONSOLIDATED TAX RETURNS	<i>3 credits</i>
Prerequisite: 631. Intensive study of tax provisions concerning use of consolidated tax returns.		
647	QLFD PENSIONS & PROFIT SHARING	<i>3 credits</i>
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 & PROCEDURE	<i>3 credits</i>

Prerequisite: admission of Master of Tax program or special permission. In-depth study of administration and procedures of Internal Revenue Service and responsibilities of tax practitioner.

649	STATE & LOCAL TAXATION	<i>3 credits</i>
Prerequisite: admission to Master of Tax program or special permission. Examines common types of taxes imposed by state and local governments and includes taxation of multistate businesses.		
650	ESTATE PLANNING	<i>3 credits</i>
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	<i>3 credits</i>
Prerequisite: 631. 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	<i>3 credits</i>
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	INDP STUDY: TAXATION	<i>1-3 credits</i>
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	<i>3 credits</i>
Prerequisites: 603 or equivalent and 610. Advanced study of accounting information system theory, elements, principles, design and implementation. Practical data processing and networks to control flow of information.		
658	ENTERPRISE RISK ASSESS & ASSUR	<i>3 credits</i>
Prerequisites: 540 or equivalent . An examination of the risks, controls, and assurance services in contemporary organizations.		
659	ASSURANCE SERVC & DATA MINING	<i>3 credits</i>
Prerequisite: 603 or equivalent. Application of data mining and quantitative techniques to fraud risk assessment, error detection, financial distress, going concern, and information risk assessment.		
660	ACCOUNTING & ASSURANCE PROJECT	<i>3 credits</i>
Prerequisites: 540 or equivalent, 658, or special permission. Comprehensive accounting and assurance project and a project management module completed in the final semester of the MSA program.		
661	ADVANCED TAX RESEARCH & POLICY	<i>3 credits</i>
Prerequisite: 628 and completion of four other tax courses in Phase II. Extensive research involving federal income, estate, trust and gift taxes as well as tax policy.		
662	S CORP TAXATION	<i>3 credits</i>
Prerequisite: 631 or special permission. This course involves an in depth study of Subchapter S of the Internal Revenue Code.		
664	RSCH & QUAN METHODS IN ACCT	<i>3 credits</i>
Prerequisites: 6200:610, 6500:601 or equivalent. Survey of research techniques, statistical methods, and data bases with applications to accounting and business functional areas.		
670	CORP PERF EVAL & CONTROL SYS	<i>3 credits</i>
Prerequisite: 610. 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	<i>3 credits</i>
Prerequisite: 610. Examination of accounting theory and practice from international perspective with emphasis on multinational investment, business and auditing activities and reporting problems.		
690	SEM: TAXATION	<i>3 credits</i>
(May be repeated for a total of six credits.) Prerequisites: completion of M.Tax foundation courses. Program of studies in the tax area of student's choice, in which a finished report is required.		
693	SEL T: TAXATION	<i>1-3 credits</i>
(May be repeated for a total of six credits.) Prerequisites: 631 or special permission. Provides study in contemporary issues in taxation that are not covered in current courses.		
695	GRADUATE INTERNSHIP IN ACCT	<i>3 credits</i>
Prerequisites: 621, 610. This course provides an opportunity for graduate accounting students to apply classroom instruction to practice problems in a professional working environment.		
697	INDP STUDY: ACCOUNTING	<i>1-3 credits</i>
(May be repeated for a total of six credits) Focus on special topics of study and research in accounting on an independent basis.		



Entrepreneurship (6300)

201	INTRO: ENTREPRENEURSHIP	<i>3 credits</i>
Students are exposed to career options in entrepreneurship where they learn skills related to starting or buying a small business, working for a fast growth business or corporation, family business, and franchising. Open to all university students. 3 credits.		
301	NEW VENTURE CREATION	<i>3 credits</i>
Prerequisite: 201 or by permission of instructor. Students work on the development of a business plan based on their chosen career path in the field of entrepreneurship (starting or buying a small business, working for a fast growth business or corporation, new product, family business, or franchising). Open to all university students.		
360	ENTREPRENEURIAL FIELD PROJECT	<i>3 credits</i>
Prerequisites: 201 or permission of the instructor. A practical field experience where students work in a consulting role on an actual entrepreneurial project involving a small business development center, a small business incubator, or an existing small business.		
450	BUSINESS PLAN DEVELOPMENT	<i>3 credits</i>
Prerequisite: 301. Students will work independently, with mentoring from the instructor, on an entrepreneurial project. Students will gain hands-on experience in developing a business plan for starting, acquiring, or expanding a business.		



Finance (6400)

200	FOUNDATNS OF PERSONAL FINANCE	<i>3 credits</i>
Prerequisites: 3250:200; 3450:145. Explores application of finance concepts in personal finance with emphasis on the personal financial planning process.		
220	LEGAL & SOC ENVIRON BUSINESS	<i>3 credits</i>
Prerequisite: completion of 32 credits. Explores the legal and social environment in which modern business must function. The legal system, public and private law, and contemporary social and ethical issues are addressed.		
301	PRINCIPLES OF FINANCE	<i>3 credits</i>
Prerequisites: 3250:200; 3450:145; 6200:201 and 250. An overview of the financial system and the major decision areas of the financial manager such as capital budgeting, financing, and working capital management.		
310	CORPORATE FINANCIAL MANAGEMENT	<i>3 credits</i>
Prerequisites: 6200:250, 6200:201. The objective of this course is to build on the foundation of your initial business finance course, expanding your financial analysis skills and deepening your knowledge of finance theory.		
321	BUSINESS LAW I	<i>3 credits</i>
Prerequisite: completion of 64 credits. Discussions designed to develop legal reasoning within substantive areas of contractual obligation, agency relationships, partnerships, corporations, accountant's legal responsibility, federal securities regulation and antitrust law.		
322	BUSINESS LAW II	<i>3 credits</i>
Prerequisite: completion of 64 credits. Applications of Uniform Commercial Code in sales, commercial paper and secured transactions. Additional discussions include property, wills, estates, trusts, bailments, insurance, suretyship, bankruptcy, and labor law.		
323	INTERNATIONAL BUSINESS LAW	<i>3 credits</i>
The law and international commercial transactions. Among the subjects covered are sovereignty; treaties; agreements; antitrust practices; property rights; international arbitration.		
338	FINANCIAL MARKETS & INSTITUTNS	<i>3 credits</i>
Prerequisites: 200; 301 or 310 or 6140:370; or permission of instructor. Studies the flows of funds. Analyzes major financial intermediaries. Money and capital markets reviewed with emphasis on interest rates and their impact upon administration of specific financial intermediaries.		
343	INVESTMENTS	<i>3 credits</i>
Prerequisites: 200, 6500:221 or 6500:304; 6400:301 or 6400:310 or 6140:300; or permission of instructor. Range of security investment media explored, alternative investment programs considered and role of securities markets through which goals can be achieved studied.		
389	ADVANCED FINANCIAL ANALYTICS	<i>3 credits</i>
Prerequisites: 200, 301, 6500:221 or 6500:304. Analysis of financial models using advanced spreadsheet techniques. Models from personal finance, corporate finance and investments are incorporated, with applications in financial planning, forecasting, portfolio theory and security valuation, option valuation, capital investment and cost of capital.		
390	REAL EST PRINC: VALUE APPROACH	<i>3 credits</i>
A study of real estate: the profession, the process, and the product. Emphasis is on real estate as a product and the valuation process. The measurement of value requires tool abilities in accounting, statistics and finance.		
402	INCOME PROPERTY APPRAISAL	<i>3 credits</i>
Prerequisites: at a minimum must have been admitted to a four year degree granting college; 200 and 301 or 310 or 6140:300; or permission of instructor. Advanced course in real property appraisal and valuation. Techniques and concepts will be covered along with the theory underlying such techniques.		
403	REAL ESTATE FINANCE	<i>3 credits</i>
Prerequisites: at a minimum must have been admitted to a four year degree granting college; 200 and 301 or 310 or 6140:300; or permission of instructor. Advanced course in real estate covering financing of and investment in real property. Included are investment techniques, methods, institutions, instruments, valuation, appraisal and policy issues.		
414	RISK MGMT: PROPERTY & CASUALTY	<i>3 credits</i>
Prerequisite: at a minimum must have been admitted to a four year degree granting college; 301 or 310 or permission of instructor. Addresses tools for managing risk, legal concepts of insurance contracts, personal insurance and commercial property and casualty insurance policies as well as other risk issues.		
415	RISK MGT:LIFE & HLTH INSURANCE	<i>3 credits</i>
Prerequisites: at a minimum must have been admitted to a four year degree granting college; 200 and 301 or 310 or 6410:300; or permission of instructor. Concepts of life and health insurance and risk management are addressed.		
416	ENTERPRISE RISK: DERIVATIVES	<i>3 credits</i>

Prerequisite: at a minimum must have been admitted to a four year degree granting college; 301 or 310 or permission. Explores risk issues at the firm level with emphasis upon identification and management of risk to enhance firm value.

417	RETIREMENT PLANNING	<i>3 credits</i>
Prerequisites: at a minimum must have been admitted to a four year degree granting college; 200 and 301 or 310 or 6140:300; or permission of instructor. An in-depth examination of retirement and estate planning objectives, methods, and strategies including the study of employee benefits plans, public and private pension funds, and lifetime strategies for maximization of estate assets.		
424	LEGAL CONCEPTS OF REAL ESTATE	<i>3 credits</i>
Prerequisite: at a minimum must have been admitted to a four year degree granting college. Study of concepts of law governing the many interests in real estate including acquisition, encumbrance, transfer, rights and obligations of parties, and the various state and federal regulations. The legal concepts of the business of real estate are likewise examined. Emphasis is on a managerial approach utilizing the case method.		
432	SEM: FINANCIAL PLANNING	<i>3 credits</i>
Prerequisites: at a minimum must have been admitted to a four year degree granting college; 200 and 301 or 310 or 6140:300; or permission of instructor. Corerquisites: 6200:410 and 430; 6400:343 and 415. Explores financial planning function, including contact, data acquisition, plan development and implementation; addresses planning techniques and financial planning ethical issues.		
436	COMMERCIAL BANK MANAGEMENT	<i>3 credits</i>
Prerequisites: at a minimum must have been admitted to a four year degree granting college; 6200:250 and 200 and 301 or 310 or 6140:300; or permission of instructor. Study of administrative policy determination and decision making within the commercial bank. Analysis of policy making in areas of liquidity, loan and security investment and sources of funds.		
438	INTERNATIONAL BANKING	<i>3 credits</i>
Prerequisite: at a minimum must have been admitted to a four year degree granting college; 301 or 310; or permission of instructor. Examination of recent trends in the expansion of international banking activities and associated revenue maximizing strategies.		
447	SECURITY & PORTFOLIO ANALYSIS	<i>3 credits</i>
Prerequisites: at a minimum must have been admitted to a four year degree granting college; 343 and 6200:250; or permission of instructor. Application of quantitative and qualitative techniques of analysis to fixed income and equity securities, and their composition weights in portfolios during different time periods.		
448	ADVANCED PORTFOLIO MANAGEMENT	<i>3 credits</i>
Prerequisite: 343. Advanced Portfolio Management is a semester long case course. The case is the management of the UA Student-Managed Investment Fund. This course's primary activity will be the active management of the Fund. Current and selected topics relating to investments and financial markets will be discussed as needed in the rapidly changing world economy. The course will give the student practical experience in portfolio construction, management and evaluation by managing real money on a real time basis.		
473	FINANCIAL STATEMENT ANALYSIS	<i>3 credits</i>
Prerequisites: at a minimum must have been admitted to a four year degree granting college; 200 and 301 or 310 or 6140:300; or permission of instructor. Analysis and interpretation of the financial position and performance of the business firm from the perspective of the credit and financial analyst. Emphasizes mechanics and art of financial analysis.		
478	TREASURY MANAGEMENT	<i>3 credits</i>
Prerequisites: at a minimum must have been admitted to a four-year degree granting college; 6400:200 and 301 and 6200:250 or permission of instructor. Material covered includes developing a conceptual framework upon which to base decisions in treasury and working capital management and provide advanced knowledge of techniques for analyzing financial data.		
481	INTERNATIONAL BUSINESS FINANCE	<i>3 credits</i>
Prerequisite: at a minimum must have been admitted to a four year degree granting college; 301 or 310 or 6410:300; or permission of instructor. Theory and practice of financial wealth maximization in the international business enterprise.		
485	FINANCIAL STRATEGY	<i>3 credits</i>
Prerequisites: at a minimum must have been admitted to a four year degree granting college; senior standing; 343, 338 and 473. Capstone course with applications of financial management theories and tools to make decisions in capital budgeting, capital structure, and working capital management.		
490	SEL T: FINANCE	<i>1-3 credits</i>
Prerequisites: at a minimum must have been admitted to a four year degree granting college; 200 and 6200:250 and 301 or 310; or permission of instructor. Provides opportunity for study of special topics not covered in current finance courses.		
499	INDP STUDY: FINANCE	<i>1-3 credits</i>
Prerequisite: permission of department head. Provides means for individualized in-depth study of finance problem or problems from which student can derive significant benefit.		
538	INTERNATIONAL BANKING	<i>3 credits</i>
Prerequisite: 602 or permission of instructor. Examination of recent trends in the expansion of international banking activities and associated revenue maximizing strategies.		
602	MANAGERIAL FINANCE	<i>3 credits</i>

Prerequisite: 6200:601 or equivalent. 6400:602 may be taken concurrently with 6200:601. Emphasis on financial decision making related to goal of firm; specifically, the investment decision, the financial decision and the dividend decision.

603	BUS SYSTEMS W/ PROCESSING APPL	<i>3 credits</i>
See department for course description.		
623	LEGAL ASPECTS-BUS TRANSACTIONS	<i>3 credits</i>
(Not open to students with six credits of undergraduate business law.) Advanced legal analysis of contracts, UCC, debtor-creditor relationships, business organizations, property, and government regulation.		
631	FINANCIAL MRKTS & INSTITUTIONS	<i>3 credits</i>
Prerequisite: 602 or equivalent. A study of major financial markets and financial institutions with an emphasis on the decision making processes within a rapidly changing, but regulated operating environment.		
645	INVESTMENT ANALYSIS	<i>3 credits</i>
Prerequisite: 602 or equivalent. Study of the economic and market forces that influence security prices. Techniques of analysis used in evaluating limited income and equity securities.		
650	TECHNIQUES-FINANCIAL MODELLING	<i>3 credits</i>
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.		
655	GOVERNMENT & BUSINESS	<i>3 credits</i>
Public policy with regard to business institutions and issues are considered from an economic, legal, ethical, political framework.		
674	STRATEGIC FIN DECISION MAKING	<i>3 credits</i>
Prerequisite: 602. Examines the role of financial decision makers as strategic consultants to other business units/ functions with integrative risk management as a unifying theme.		
678	CAPITAL BUDGETING	<i>3 credits</i>
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.		
681	MULTINATIONL CORPORATE FINANCE	<i>3 credits</i>
Prerequisite: 602 or equivalent. Financial policies and practices of companies involved in multinational operations. Considers management of working capital and permanent assets, return on investment and capital budgeting for the global firm.		
685	E-BUSINESS: LEGAL ISSUES	<i>3 credits</i>
Study of the application of law to emerging e-commerce form of business with concentration on emerging law and policy.		
690	SEL T: FINANCE	<i>3 credits</i>
(May be repeated for a total of six credits) Prerequisite: 602 or equivalent. Provides study of contemporary issues and areas not covered in current finance graduate courses.		
691	INTL FIN MRKTS & INVESTMENTS	<i>3 credits</i>
Prerequisites: 602 or equivalent. A study of international financial markets with an emphasis on international investments and risks in a rapidly changing global economy.		
697	INDP STUDY: FINANCE	<i>1-3 credits</i>
(May be repeated for a total of six credits) Focus on special topics of study and research in finance on an independent basis.		



Management (6500)

222	QUANT BUSINESS ANALYSIS II	<i>3 credits</i>
Prerequisite: 221. Two sample hypothesis testing; ANOVA; Chi-square tests; simple and multiple linear regression; nonparametric procedures; forecasting. Case analysis with written individual and team reports will be used.		
301	MGMT: PRINCIPLES & CONCEPTS	<i>3 credits</i>
Prerequisites: 48 completed credit hours. An interdisciplinary approach to the study of the basic principles of general management theory and practice.		
302	ORGANIZ BEHAVR & LDRSHP SKILLS	<i>3 credits</i>
Prerequisite: 301. Investigation of applications of behavioral and social sciences as they relate to individual, group behavior in organizations.		
304	BUSINESS STATISTICS	<i>3 credits</i>
Prerequisite: 3450:145 and 6200:250. Introduces statistical methods to support quantitative decision analysis for solving business problems. Includes probability, sampling, estimation, hypothesis testing, analysis of variance, and linear regression.		
305	BUSINESS ANALYTICS	<i>3 credits</i>
Prerequisites: 304. Studies core statistical techniques; data retrieval, analysis and mining; and decision modeling to effectively persuade in the project-oriented world of data-driven decisions.		
310	BUSINESS INFORMATION SYSTEMS	<i>3 credits</i>
Prerequisites: 48 completed credit hours and 6200:250 or equivalent. Provides a technical and organizational foundation for understanding the use and importance of information systems and information technology in today's business environment.		
315	APPL DEVLPMNT FOR BUS PROCESSES	<i>3 credits</i>
Prerequisite: 6200:250 and 48 completed hours. Analysis and automation of business operations and processes. Development of applications based on a simulated enterprise-wide database.		
324	DATABASE MGMT FOR INFO SYSTEMS	<i>3 credits</i>
Prerequisites: 6200:250 and 48 completed hours. An introduction to database design and management, including data modeling, relational theory, Structured Query Language, and database applications, development, using database management systems.		
325	ANALYSIS,DESIGN,DEVL -INFO SYS	<i>3 credits</i>
Prerequisites: 324. An introduction to the techniques of business modeling, systems design, and implementation, including the application of software engineering tools in support of modeling and code generation.		
330	PRIN OF SPLY CHAIN & OPER MGMT	<i>3 credits</i>
Prerequisites: Completion of 48 credit hours. An overview of the terminology, fundamental concepts and scope of responsibility encountered in the fields of supply chain and operations management.		
333	SUPPLY CHAIN & OPER ANALYSIS	<i>3 credits</i>
Prerequisites: 222 or 304; and 330. Application of quantitative models in the analysis and design of systems in the supply chain and in manufacturing and service operations environments.		
334	SERVICE OPERATIONS MANAGEMENT	<i>3 credits</i>
Prerequisite: 330. An overview of the fundamental terminology, principles, concepts and problem solving methods encountered in the contemporary field of service operations management.		
341	HUMAN RESOURCE MANAGEMENT	<i>3 credits</i>
Prerequisite: one course in psychology or sociology and corequisite 301. Principles, policies, and practices in administering functions of recruiting, selecting, training, compensating, and appraising human resources of organizations.		
342	LABOR RELATIONS	<i>3 credits</i>
Prerequisite: 64 completed credit hours. Corequisite: 6500:341 if not previously completed. Analysis of management, union and employee objectives, attitudes and strategy, as they affect conduct of business and economy. Stress placed on group assigned readings and reports.		
350	FUND ENTERPRISE RESOURCE PLAN	<i>3 credits</i>
Prerequisites: 6200: 250 Computer Applications for Business and 48 completed credit hours. The enterprise wide process of decreasing operating costs, rationalizing the supply chain, improving management control, and decreasing cycle time by implementing ERP based solutions		
390	SUPPLY CHN MODELNG & DECIS MAK	<i>3 credits</i>
Prerequisite: 6200:250, 6500:304 or 6500:221 and 6200:250. Spreadsheet based, example-driven approach to develop models and methodologies for supply chain analysis and decision making.		

410	SEL T: ENTREPRENEURSHIP	<i>1-3 credits</i>
Prerequisites: Must be admitted to a 4-year degree granting college; upper-college or graduate standing and 301 or 600 or equivalent. Facilitates comparative international study of entrepreneurship, introduction of entrepreneurship to large organizations, or application of student's entrepreneurial skills. Six hour limit.		
420	MANAGEMENT OF DATA NETWORKS	<i>3 credits</i>
Pre-requisites: Must be admitted to a 4-year degree granting college; 310 and 64 completed hours. Principles of the design and management of data networks for business communications.		
421	OPERATIONS RESEARCH	<i>3 credits</i>
Prerequisite: Must be admitted to a 4-year degree granting college; 330. Examines the use of operations research techniques in managerial decision-making processes; constrained linear optimization, non-linear optimization, network analysis, queuing theory, simulation.		
425	DECIS SUPP W DATA WRHS/MINING	<i>3 credits</i>
Prerequisite: Must be admitted to a 4-year degree granting college; 324 and 305 or (221 and 222). Examines managerial and technical aspects of business decision-making based on the use of data warehouses, on-line analytical processing (OLAP) and data mining.		
426	E-BUS APPLICATION DEVELOPMENT	<i>3 credits</i>
Prerequisite: Must be admitted to a 4-year degree granting college; 6200:250 and 64 completed credit hours. Students will gain an understanding of issues and skills related to web application design and development.		
427	SYSTEMS INTEGRATION	<i>3 credits</i>
Prerequisite: Must be admitted to a 4-year degree granting college; 6500:315. The course provides an understanding of issues and underlying application integration. Topics include coverage of middleware technologies, B2B standards and XML.		
433	SUPPLY CHAIN LOGISTIC PLANNING	<i>3 credits</i>
Prerequisite: 64 completed credit hours and 330. Emphasizes the importance of planning in the development of the domestic and global supply chain logistics system that includes transportation, inventory, warehousing and procurement.		
434	PRODUCTION PLANNING & CONTROL	<i>3 credits</i>
Prerequisite: Must be admitted to a 4-year degree granting college; 64 completed credit hours and 333. Coverage of materials management, production planning, scheduling and control. Integrates material from previous courses, provides overall framework including use of computer and quantitative methods.		
435	QUALITY MANAGEMENT & CONTROL	<i>3 credits</i>
Prerequisites: Must be admitted to a 4-year degree granting college; 64 completed credit hours and 330. Emphasis on statistical techniques essential to controlling product quality for both measurement and attribute data. Includes control chart methods and acceptance sampling plans.		
442	COMPENSATION MANAGEMENT	<i>3 credits</i>
Prerequisite: Must be admitted to a 4-year degree granting college; 64 completed credit hours and 341. Focus on the design, implementation and evaluation of employee compensation and benefits programs.		
443	HUMAN RESOURCE SELECT & STAFF	<i>3 credits</i>
Prerequisite: Must be admitted to a 4-year degree granting college; 64 completed credit hours and 341. Advanced study of selection and staffing within business organizations. Emphasis on current research and practice. Activities include projects, case studies, interaction with human resource professionals.		
457	INTERNATIONAL MANAGEMENT	<i>3 credits</i>
Prerequisites: Must be admitted to a 4-year degree granting college; upper-college standing and 301 or equivalent. Management practices and techniques of international business organizations. Focus on structure and processes of resource allocation, design and technology, and the impact of culture.		
458	ST: MANAG ARBIT, MED, & CONCIL	<i>1-3 credits</i>
Prerequisites: Must be admitted to a 4-year degree granting college; upper-college or graduate standing and 301 or 600 or equivalent. Study of the various methods and mechanisms by which management can understand and deal with internal and external conflict. Six hour limit.		
459	SEL T: INTERNATIONAL MANAGEMNT	<i>1-3 credits</i>
Prerequisites: Must be admitted to a 4-year degree granting college; upper-college standing; 301 or equivalent; and 457; or permission of instructor. Selected topics in international management focus on historical or contemporary managerial, production and organizational issues. Includes international simulation game. Six hour limit.		
460	ST: MANAGEMENT	<i>3 credits</i>
Prerequisite: Must be admitted to a 4-year degree granting college. Exploration of advanced topics of interest both to the student and professor. Many special applications, case studies, outside speakers, projects in conjunction with local industries.		
471	MANAGEMENT PROJECT	<i>3 credits</i>
Prerequisites: Admission to College of Business Administration, Human Resource Management option: 342, 442, 443*; Supply Chain/Operations Management option: 333, 390, 433; Information Systems Management option; 325, 420, 425, 427 and one from 333, 341, 426, 6200:454**; e-Business Technologies option: 324, 420, 426, 6100:201 and two from 341, 390, 425, 6600:425, 6200:454*. Students develop skills in field-based management problem solving, project management, and requirements analysis under conditions of uncertainty in a collaborative interdisciplinary team environment.		
476	SUPPLY CHAIN SOURCING	<i>3 credits</i>

Prerequisite: Must be admitted to 4-year degree granting college; 330. Introduces the student to fundamental sourcing concepts as well as the scope of responsibility and critical roles of the sourcing function within the principal organization in a supply chain network.

477	MANAGEMENT SIMULATION	<i>1 credits</i>
Prerequisite: 301. Simulation of management practices through computerized game or experiential exercise.		
478	HUMAN RESOURCE SIMULATION	<i>1 credits</i>
Prerequisite: 341. Simulation of human resource practices through computerized or experiential exercises.		
479	OPERATIONS SIMULATION	<i>1 credits</i>
Prerequisite: Must be admitted to a 4-year degree granting college; 333. Simulation of operations management practices through computerized or experiential exercises.		
480	INTRO: HEALTH-CARE MANAGEMENT	<i>3 credits</i>
Prerequisites: Must be admitted to a 4-year degree granting college; upper-college or graduate standing (Students who are required to take 301 or 600 or have completed 301 or 600 or equivalent are ineligible to take this course for credit). Introductory course for health professionals covering principles and concepts of management applied to health services organizations. For those registered for graduate credit, a major paper is required.		
482	HEALTH SERVICES OPERATIONS MGT	<i>3 credits</i>
Prerequisites: Must be admitted to a 4-year degree granting college; upper-college standing and 301 or 480 or equivalents, or graduate standing and 580 or 600 or equivalent, or permission of instructor. (Students who have completed 330 are ineligible to take this course for credit). Application of production and operations management concepts and techniques in health services organizations.		
485	ST: HEALTH SERVICES ADMINSTRTN	<i>1-3 credits</i>
Prerequisite: Must be admitted to a 4-year degree granting college; permission of instructor. Special topics in health services administration (e.g., management) focusing on historical and/or contemporary managerial organizational and/or policy/strategy issues as related to health-care organizations and health-care systems. Separate topics may be repeated for a maximum of six credits. For those registered for graduate credit, a major research paper is required.		
490	STRATEGIC MANAGEMENT	<i>3 credits</i>
Prerequisites: Admission to College of Bus Admin, 97 credits in which 15 crd hrs, or half of major crsework must be completed, along with the CORE; and 6200:202, 250; 6400:301 or 310, 220 or (321 and 322); 6500:305 or 222, 330 and 301; 6600:300; 6800:305. Capstone course. Integrates the core business disciplines (accounting, economics, finance, management, marketing) through the use of case analysis. Objective and strategy formulation from an administrative viewpoint and international dimension. Emphasis on oral and written communications.		
491	W: MANAGEMENT	<i>1-3 credits</i>
Prerequisite: Must be admitted to a 4-year degree granting college. (May be repeated with permission of instructor or department) Group studies of special topics in management. May not be used to meet undergraduate major requirements in management. May be used for elective credits only.		
510	SEL T: ENTREPRENEURSHIP	<i>1-3 credits</i>
Prerequisites: upper-college or graduate standing and 301 or 600 or equivalent. Facilitates comparative international study of entrepreneurship, introduction of entrepreneurship to large organizations, or application of student's entrepreneurial skills. Six hour limit.		
520	MANAGEMENT OF DATA NETWORKS	<i>3 credits</i>
Prerequisite: 601. Principles of the design and management of data networks for business communications.		
533	SUPPLY CHAIN LOGISTIC PLANNING	<i>3 credits</i>
Prerequisites: 675. Emphasizes the importance of planning in the development of the domestic and global supply chain logistics system that includes transportation, inventory, warehousing and procurement.		
571	MANAGEMENT PROJECT	<i>3 credits</i>
Prerequisite: 670. Students develop skills in field-based management problem solving, project management, and requirements analysis under conditions of uncertainty in a collaborative interdisciplinary team environment.		
580	INTRO: HEALTH-CARE MANAGEMENT	<i>3 credits</i>
Prerequisite: graduate standing. Introductory course for health professionals covering principles and concepts of management applied to health services organizations.		
582	HEALTH SERVICES OPERATIONS MGT	<i>3 credits</i>
Prerequisite: 580 or 600 or equivalent or permission of instructor. Application of operations and systems analysis to health services organizations.		
585	ST: HEALTH SERVICES ADMINSTRTN	<i>1-3 credits</i>
Prerequisite: permission of instructor. Special topics in health services administration (e.g., management) focusing on historical and/or contemporary managerial organizational and/or policy/strategy issues as related to health-care organizations and health-care systems. Separate topics may be repeated for a maximum of six credits. For those registered for graduate credit, a major research paper is required.		
600	MANAGEMENT & ORGANZTNL BEHAVR	<i>3 credits</i>
Course examines management principles, concepts, functions and process, as well as human behavior in organizations.		
601	BUS ANALYTICS & INFO STRATEGY	<i>3 credits</i>
Covers information systems foundations, strategic use of core analytical techniques including statistics and data mining to enable firms to better compete.		
602	COMPUTER TECHNIQUES FOR MGMT	<i>3 credits</i>

Introduction to the use of integrated spreadsheet software, database management software and the analysis and design of management information systems.

605	BUSINESS APPLICATIONS DEVLPMNT	<i>3 credits</i>
The analysis and automation of standard business processes with examples from diverse business functions. Students will integrate these applications for business decision making.		
608	ENTREPRENEURSHIP	<i>3 credits</i>
Prerequisite: Graduate Standing. Students develop new products and work with entrepreneurial businesses in the development of business plans that are presented to investors and entrepreneurs in local and international business plan competitions.		
620	E-BUSINESS FOUNDATIONS	<i>3 credits</i>
Provides an understanding of the foundation of Electronic Business focusing on business and application issues.		
622	E-BUSINESS TECHNOLOGIES	<i>3 credits</i>
Prerequisite: 620 or 602. This course provides a foundation in internet related technologies for successfully managing an e-business. Students will be required to design and implement a functional e-business prototype.		
640	INFO SYSTEMS AND IT GOVERNANCE	<i>3 credits</i>
Prerequisite: 601. Covers issues, strategies, tactics for managing organizational use of information technology and systems. Includes strategic alignment, project management, offshoring, security, application systems, and emerging technologies		
641	BUSINESS DATABASE SYSTEMS	<i>3 credits</i>
Prerequisite: 601. Introduction to issues underlying the analysis, design, implementation, and management of business databases.		
643	ANALY & DESIGN OF BUS SYSTEMS	<i>3 credits</i>
Prerequisite: 601. A hands-on treatment of the methods used to develop different types of business information systems.		
644	KNOWLEDGE MGT & BUS INTELLIGNC	<i>3 credits</i>
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.		
645	SOFTWARE DEVL & QUAL ASSURANCE	<i>3 credits</i>
Prerequisite: 601. Introduction to business software development and quality assurance. Students teams will work on projects with an emphasis on implementation of business systems.		
646	ENTERPRISE SYS IMPLEMENTATION	<i>3 credits</i>
Prerequisite: 602. The configuration and implementation of Enterprise Systems to support the cross functional integration of business processes.		
648	MGMT OF TELECOMMUNICATION	<i>3 credits</i>
Prerequisite: 602 or 6200:603. An introduction to the use and management of telecommunications resources to support the activities of the organization.		
650	HUMAN RESOURCE SYS FOR MANAGER	<i>3 credits</i>
Prerequisite: 652. A broad survey of the fundamental principles, research findings and practices related to the acquisition, development, maintenance and effective utilization of a business firm's human resources.		
651	ORGANIZTNL TRANSFORMATION	<i>3 credits</i>
Prerequisite: 652. A comprehensive study of innovations in organizations designed to increase human satisfaction and productivity through changes in human management.		
652	MANAGING PEOPLE IN ORGANIZATNS	<i>3 credits</i>
Introduction to the employee issues that managers face in organizations. The aspects of organizational behavior that influence performance, and issues related to managing human resources will be examined.		
653	ORGANIZATIONAL THEORY	<i>3 credits</i>
Prerequisite: 600. Examines the structure, design and overall effectiveness of a business organization from a macro-perspective.		
654	MGT OF ORGANIZATIONAL CONFLICT	<i>3 credits</i>
Prerequisite: 600 or equivalent. Course emphasizes ensuring that the organization benefits from inevitable conflicts that occur, and provides skills in diagnosis, negotiation, and building trust and cooperative working relationships in organizations.		
655	COMPENSATION & PERFORMANCE MGT	<i>3 credits</i>
Prerequisite: 600 or equivalent. The development and analysis of systems of payments and rewards in business organizations with special attention placed on performance evaluation methods and productivity enhancement.		
656	MGT OF GLOBAL SUPPLY CHN & OPR	<i>3 credits</i>
Prerequisites: 6500:600 or equivalent or permission of instructor. Study and explore the elements and issues related to globalization of supply chain, production and service operations.		
657	LEADRSHP ROLE IN ORGANIZATIONS	<i>3 credits</i>
Prerequisite: 600. Analysis and development of leadership theory and thought. Identification of leaders in both formal and informal organizations. Training and development methods of leaders evaluated. Individual and small group field study assignments.		
658	MANAGING A GLOBAL WORKFORCE	<i>3 credits</i>

Prerequisites: 652. The formulation, design, and implementation of human resource practices designed to generate competitive cost advantages for business firms operating in domestic and/or international markets.

659	INTERNL HUMAN RESOURCE MGMT	<i>3 credits</i>
Prerequisite: 600. A survey course focused on the identification, analysis, and resolutions of human resource problems in business firms with global operations.		
660	STAFFING & EMPLOYMENT REGULATN	<i>3 credits</i>
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 function.		
661	COMPARTV SYST EMPLOYEE & LABOR	<i>3 credits</i>
Prerequisite: 600. A survey course examining how industrial relations systems and employment practices across national boundaries impact upon the employment relationship of business firms with global operations.		
662	SUPPLY CHAIN ANALYSIS	<i>3 credits</i>
Prerequisites: 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 MANAGERS	<i>3 credits</i>
Prerequisite: 601 or equivalent. Design, evaluation and interpretation of research in business and organizations. Integrates quantitative and behavioral concepts and processes encountered in conducting such research, including ethical issues.		
665	MANAGEMENT OF TECHNOLOGY	<i>3 credits</i>
Survey of the principles and management practices of technology driven organizations are discussed with concepts, models and case studies for managers of technology intensive operations.		
669	POLYMER MANAGEMENT DECISIONS	<i>3 credits</i>
Introduces major polymer concepts, production processes, and uses of polymeric materials in an easy-to-comprehend interdisciplinary instructional way. Industrial case studies will help integrate enterprise-wide innovation and technology management related decisions.		
670	MGMT OF SUPPLY CHAINS & OPER	<i>3 credits</i>
Prerequisites: 601. An overview of the issues directly related to the management of supply chains and operations at the strategic, tactical, and operational levels of the organization.		
673	QUAL & PRODUCTIVITY TECHNIQUES	<i>3 credits</i>
Prerequisite: 601. Introduction to techniques 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	<i>3 credits</i>
Prerequisite: Graduate Standing. Focuses on the integration of activities and information/material flows across multiple organizations that comprise the supply chain, and the relationships among those organizations.		
677	SUPPLY CHAIN SOURCING	<i>3 credits</i>
Prerequisite: 670 or 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 organization in a supply chain network.		
678	PROJECT MANAGEMENT	<i>3 credits</i>
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 MGT	<i>3 credits</i>
Prerequisite: 670 or 675. Emphasizes the importance of planning and operation of supply chain logistics systems that includes transportation, inventory and warehousing, with particular emphasis on international logistics, regulations and documentation.		
683	HEALTH SERVICES SYSTEMS MGMT	<i>3 credits</i>
Prerequisite: Graduate Standing. Study of health services organizations, comparative delivery systems, the roles of third-party payors and government policy in health care. Seminar format: major research paper required.		
685	BIOINNOVATION AND DESIGN	<i>3 credits</i>
Bring together students with different academic backgrounds to work in teams and identify and develop new medical technologies and solutions to health care problems.		
686	HEALTH SERVICES RSCH PROJECT	<i>3 credits</i>
Prerequisites: 683 or permission of instructor. In-depth field study in health services administration with applications of research and analysis skills. Course requires review of literature and a major research paper.		
688	INDP STUDY: HEALTH SERV ADMN	<i>1-3 credits</i>
(May not 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., management), chosen by the student in consultation with and under the supervision of the instructor.		
690	SEL T: MANAGEMENT	<i>3 credits</i>
(May be repeated for a total of six credits) Prerequisite: 652. Selected topics in historical, contemporary and/or operational and functional areas of management.		
695	ORGANIZATIONAL STRATEGY	<i>3 credits</i>

Prerequisite: Complete four classes: 6500:670, 6400:674, 6600:620, 6800:605 or Permission of Instructor. A case-oriented course which focuses on integration of theoretical and practical knowledge acquired in core business courses. Students analyze, evaluate, and formulate organization objectives and strategies within domestic and international environmental contexts.

697

INDP STUDY: 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 (6600)

275	PROFESSIONAL SELLING	<i>3 credits</i>
Prerequisite: 25 credits or permission from instructor. Builds communication skills while learning about buyer needs, persuasion and social influence, prospecting, making sales presentations, persuading, overcoming sales resistance, closing sales and building relationships.		
300	MARKETING PRINCIPLES	<i>3 credits</i>
Prerequisites: 48 hours of college credit; 3250:200 or 244. A general survey of marketing activities including analysis of markets, competition, consumer behavior, information systems, and the assessment of product, price, distribution, and promotion strategies.		
335	MARKETING RESEARCH	<i>3 credits</i>
Prerequisites: 300, 6500:221 or 6500:304. Student will gain hands-on experience in the understanding and use of appropriate tools and techniques for analyzing interpeting and presenting information derived from marketing databases. Includes problem definition and solution approach to marketing research decisions.		
355	BUYER BEHAVIOR	<i>3 credits</i>
Prerequisite: 300. Interdisciplinary approach to the analysis of the nature of consumer buying behavior. Economical, social, and psychological influences on consumers' decision-making processes are examined.		
375	MARKETING & SALES ANALYTICS	<i>3 credits</i>
Prerequisite: 335. Develop the skills to provide clients with actionable marketing intelligence gleaned from the customer, sales force, channel, promotion and competitor databases that are now pervasive in the business world.		
432	INTEGRATED MARKETING COMMUNCTN	<i>3 credits</i>
Prerequisite: Must be admitted to a four-year, degree granting college and 300 and 355. This course stresses the need for marketers to create consistent coordinated communication programs using all elements of the promotion mix including advertising, public relations, sales promotion, social media and personal selling.		
434	DIGITAL IMC	<i>3 credits</i>
Prerequisites: Must be admitted to a four-year, degree granting college and 300, 432. Focuses on the planning and execution of the promotion mix in the digital environment through online and mobile advertising, sales promotion, social media, blogging, website design and SEO.		
436	E-COMMERCE	<i>3 credits</i>
Prerequisites: 300, 355, 375. Commerce is shifting from a bricks & mortar to a bricks & clicks or clicks only delivery system. This course explores the growing role of E-commerce in firms' marketing mix and the complementary roles that customer relationship management and direct marketing play in this new environment.		
438	MEDIA STRATEGY	<i>3 credits</i>
Prerequisites: Must be admitted to a four-year, degree granting college and 300 and 432. A message delivery course that teaches students to develop, schedule and budget effective media plans that integrate different type of media (television, radio, print, direct mail, social media and the Internet) to maximize IMC effectiveness.		
440	BRAND MANAGEMENT	<i>3 credits</i>
Prerequisite: 300, 355. This course studies the process of building and evolving success brands. It focuses on brand equity development by creating a distinct brand identity, impeccable brand integrity and emotional resonance. It also emphasizes brand evolution through incremental and radical innovation.		
445	CREATIVE LABORATORY	<i>3 credits</i>
Prerequisites: 355, 432. The execution of communication strategy is essential to the success of IMC campaigns. This course focuses on the process of translating strategy into effective creative.		
460	B2B MARKETING	<i>3 credits</i>
Prerequisite: 300. This course provides a thorough grounding in industrial and business-to-business marketing. While many of the concepts are similar to those used in consumer marketing, there are major differences. This course will explore both the similarities and the differences.		
475	BUSINESS NEGOTIATIONS	<i>3 credits</i>
Prerequisite: 25 credits or permission from instructor and 6600:275. Examines business negotiation principles and practices, and builds skills in the process of negotiating business agreements within a global environment.		
478	ADVANCED PROFESSIONAL SELLING	<i>3 credits</i>
Prerequisite: 275. Develop the skills to provide clients with actionable marketing intelligence gleaned from the customer, sales force, channel, promotion and competitor databases that are now pervasive in the business world.		
480	SALES MANAGEMENT	<i>3 credits</i>
Prerequisite: 300. Develops analytical and managerial skills through case studies and other learning activities relating to the organization, selection, training, motivation, and control of a domestic or global sales force.		
491	PROFESS WORKSHOPS IN MARKETING	<i>1-3 credits</i>

Prerequisites: 275, 335, 355, 375. Special topics in marketing taught primarily by professionals with the objective of adding depth and an applied perspective to marketing concepts, issues, software & databases, problem solving and career planning.

496	ST: MARKETING	<i>1-3 credits</i>
Prerequisite: 300. (May be repeated for a total of three credits.) Provides an opportunity to examine special topics and/or current issues in the fields of marketing, sales retailing or advertising.		
499	MARKETING CAPSTONE PROJECT	<i>3 credits</i>
Prerequisites; For all Marketing Majors: 275, 335, 355, 375 PLUS: For Sales Management majors: 475, 480 For IMC majors: 432, 438 For Marketing Management majors: 440, 460. Student teams comprised of members from each marketing major will refine a live client's marketing strategy (product, price, distribution and promotion) and develop complementary integrated marketing communication and sales force plans.		
575	BUSINESS NEGOTIATIONS	<i>3 credits</i>
Examines business negotiation principles and practices and builds skills in the process of negotiating business agreements within a global environment.		
600	MARKETING CONCEPTS	<i>3 credits</i>
Introductory course examining buyer behavior, environmental influences, target marketing, product development, distribution, promotion, and pricing for business firms and nonprofit organizations within a global context.		
615	DATABASE MARKETING	<i>3 credits</i>
Prerequisite: 600. This course examines the information-driven process that is managed by database technology in an effort to develop, test, implement, measure and create customized marketing programs and strategies. Database marketing focuses on better decision making relative to customer selections and customer relationships.		
620	STRATEGIC MARKETING	<i>3 credits</i>
Review of Marketing terminology and concepts. Managerial assessments of opportunities, threats are explored as are the development and management of appropriate strategic marketing plans and their tactical implementation.		
625	BRAND MANAGEMENT	<i>3 credits</i>
Prerequisite: 620. 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.		
630	CUSTOMER RELATIONSHIP MGMT	<i>3 credits</i>
Prerequisite: 600 or permission of instructor. Investigation of the marketing concept and practice of making the customer the focus of the firm's business model. Examining the strategies and tactics for successful customer acquisition and retention is the focus of the course		
635	E-COMMERCE & INTERACTIVE MARKET	<i>3 credits</i>
Prerequisites: 620. Covers the impact of electronic technology on marketing strategy and tactics. Investigations include: vendor/dealer relations, website traffic designs, database applications, and web appraisal metrics.		
640	BUSINESS RESEARCH METHODS	<i>3 credits</i>
Prerequisites: 6500:601 and 602. Covers the scientific methods as well as the gathering and analysis of information to identify opportunities and solve problems within a business organization.		
655	INTEGRATED MARKETING COMMUNCTN	<i>3 credits</i>
Prerequisite: 600. The total range of marketing communication tools are examined individually and in the context of planning, developing, and implementing a systematic and integrated communications program.		
670	COMPETITIVE BUSINESS STRATEGY	<i>3 credits</i>
Prerequisites: 600. Investigation of competitive business strategy from an industry perspective. The course presents a framework which can be used to understand and develop competitive strategies.		
681	SALES MANAGEMENT	<i>3 credits</i>
Prerequisite: 620. Develops analytical and managerial skills through case studies and other learning activities relating to the organization, selection, training, motivation, and control of a domestic or global sales force.		
697	INDP STUDY: MARKETING	<i>1-3 credits</i>
(May be repeated for a total of six credits) Focus on special topics of study and research in marketing on an independent basis.		



Professional** (6700)

689	LEADING AND INFLUENCING	<i>1 credits</i>
The main topics of the course are authentic leadership and influence within collaborative structures. The emphasis of course is on self-awareness and development of leadership and collaborative competencies.		
691	PROFESSIONAL INTEGRITY	<i>1 credits</i>
This course is designed to examine the issues of integrity, ethics, and business social responsibility facing business professionals in today's world of business globalization.		
693	NEGOTIATIONS IN THE WORKPLACE	<i>1 credits</i>
This course introduces students to the skills necessary to successfully navigate career and life negotiations. Contexts covered include job interviews, job offers and promotions. This course is taught from a practical perspective, with hands-on experience and interactions.		
695	INTERN: BUSINESS	<i>1-3 credits</i>
Prerequisite: permission of instructor. On-the-job experience with cooperating private and public sector organizations. Individual assignments made by supervising faculty member. Periodic reports and research papers required. Credit/noncredit.		
696	ST: PROFESSIONAL DEVELOPMENT	<i>1 credits</i>
Special topics and current issues in the MBA program Professional Courses. May be repeated with a change in subject, not to exceed 6 credits.		
698	COLLOQUIUM IN BUSINESS	<i>1-3 credits</i>
Prerequisite: permission of graduate director. Study of business administration through a seminar of several lectures in business research and practice. A broad range of topics in business research and issues will be discussed by guests, faculty and graduate students. May be repeated, but will not satisfy degree requirements (Credit/non-credit.)		

** Graduate-level courses only. See Graduate Bulletin.



International Business (6800)

305	INTERNATIONAL BUSINESS	<i>3 credits</i>
Prerequisites: 48 hours of college credit. A basic course in international business which can also provide a platform for more specialized business courses.		
406	TRAVEL ABROAD	<i>0 credits</i>
Prerequisite: Must have been admitted to a four-year, degree granting college. Approved travel to a foreign country per the requirements of the International Business major.		
421	FOREIGN MARKET ENTRY	<i>3 credits</i>
Prerequisite: Must have been admitted to a four-year, degree granting college and 305 or permission of instructor. A study of the business processes and procedures associated with successful foreign market entry. International Business practices around the world related to successful and unsuccessful entry are compared and contrasted. Letters of Credit, Import/Export Documentation and Global Shipping Standards are examined.		
496	ST: INTERNATIONAL BUSINESS	<i>1-3 credits</i>
(May be repeated for a total of three credits) Prerequisite: Permission of instructor. Provides the opportunity to study special topics and current issues in international business. Note: Other international business courses are offered under departmental course numbers. They are 6200:408, 6400:323, 6400:481, 6500:457, 6500:459 and 6600:385.		
506	INTER BUS WITH STDY ABROAD REQ	<i>3 credits</i>
Prerequisites: Admission into a graduate program of study. A basic course in international business which can also provide a platform for more specialized international business courses. Students majoring in IB are required to participate in an approved Study Abroad Program. Foreign students must choose a country other than their home country to satisfy the study abroad requirement. Students will prepare and submit a detailed examination of the business environment visited.		
605	INTERNATL BUS ENVIRONMENTS	<i>3 credits</i>
Prerequisites: all MBA foundation courses. This course is intended to develop an understanding of the global business environment and the integrated functions of the multinational corporation.		
630	INTERNATIONAL MARKETING POLICY	<i>3 credits</i>
Explores the problems of formulating and implementing marketing strategies and tactics within complex and changing multinational organizations and international markets. A planning framework is emphasized.		
685	MULTINATIONAL CORPORATIONS	<i>3 credits</i>
A course designed to develop an understanding of global businesses, their functions, structures, and strategic operations.		
690	SEM: INTERNATIONAL BUSINESS	<i>3 credits</i>
A course covering major issues in international business.		
697	INDP STUDY: INTERNATL BUSINESS	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisites: Graduate standing and permission of instructor. Focus on special topics of study and research in international business on an independent basis.		



The University of Akron
Undergraduate Bulletin

College of Health Professionals

- [Speech-Language Pathology and Audiology \(7700\)](#)
- [Social Work \(7750\)](#)
- [Nutrition and Dietetics \(7760\)](#)
- [Cooperative Education \(8000\)](#)
- [Nursing \(8200\)](#)
- [Master of Public Health \(8300\)](#)



Speech-Language Pathology and Audiology (7700)

101	AMERICAN SIGN LANGUAGE I	<i>3 credits</i>
Introduction to American Sign Language: vocabulary building, beginning development of fingerspelling skills, receptive/expressive conversational skills.		
102	AMERICAN SIGN LANGUAGE II	<i>3 credits</i>
Prerequisite: 101. Continued development of skills in American Sign Language: vocabulary building, further development of fingerspelling skills, receptive/expressive conversational skills.		
110	INTRO TO DISORDERS OF COMMUNIC	<i>3 credits</i>
Overview of various types of speech disorders; their incidence, etiology and characteristics. Basic concepts and principles underlying speech pathology.		
201	AMERICAN SIGN LANGUAGE III	<i>3 credits</i>
Prerequisite: 102. Continued development of skills in American Sign Language: vocabulary building, fingerspelling skills, receptive/expressive conversational skills, and linguistic features of ASL.		
202	AMERICAN SIGN LANGUAGE IV	<i>3 credits</i>
Prerequisite: 201. Further fluency development of expressive/receptive communication, fingerspelling, and linguistic features of ASL.		
210	INTRO TO CLINICAL PHONETICS	<i>4 credits</i>
Introduction to International Phonetic Alphabet. Transcription of normal speech. Overview of articulatory and acoustic phonetics. Introduction to distinctive features.		
215	INTRO:HEARING & SPEECH SCIENCE	<i>4 credits</i>
Prerequisite: 210. Introductory course covering the human hearing system and acoustics of hearing as well as principles involved in the production, transmission, and reception of the speech signal.		
222	SURVEY DEAF CULTURE IN AMERICA	<i>2 credits</i>
The deaf experience in America including historical, educational, legal, social, and occupational developments.		
230	LANGUAGE SCIENCE & ACQUISITION	<i>4 credits</i>
Prerequisite: Speech-Language Pathology and Audiology majors only. An introduction to language science and the study of the language acquisition process. The characteristics and explanations of language development will be presented.		
245	FRST RESPOND TO THE DEAF COMM	<i>4 credits</i>
Prerequisites: 101, 102, 201. Completion of ASL 201 with C or better. This course is required for the HSHS Manual Communication Certificate. It will emphasize ASL skills practical to first responders' needs.		
321	ARTICULATORY & PHONOLGIC DISRD	<i>4 credits</i>
Prerequisites: 110, 210. Study of disorders of articulation/phonology, including normal phonological developments, and assessment and remediation of phonological disorders.		
330	LANGUAGE DISORDERS	<i>4 credits</i>
Prerequisite: 230. Etiology, identification, evaluation, intervention, remediation of symbolic, cognitive, interpersonal language disorders of children. Disorders viewed as correlates or sequelae of central nervous system dysfunction or emotional disturbance.		
335	PRINCIPLES OF AUDIOLOGY	<i>4 credits</i>
Prerequisite: 215. Introduction to basic audiometric tests, principles of speech audiometry, masking, and impedance audiometry, "test battery" approach.		
345	AUDIOLOGIC TREATMENT	<i>4 credits</i>
Prerequisite: 215. Introduction to philosophy and methods of aural rehabilitation for children and adults. Includes methods of speech reading, auditory training, speech conservation, hearing aid use and combined visual and auditory approaches.		
365	ANATOMY & PHYS OF SPCH & HEAR	<i>3 credits</i>
Prerequisites: 3100:265. Corequisites: 366. Study of the anatomy and physiology of organs directly and indirectly responsible for production of speech and perception of acoustical signals.		
366	ANATOMY & PHYSIOLOGY LAB	<i>1 credits</i>
Corequisites: 365. Laboratory to accompany lecture, includes hands-on experience with a variety of laboratory materials, primarily models and virtual dissection.		
422	ORGANIC DISORDERS OF COMMUN	<i>4 credits</i>

Prerequisites: 110 and 3100:265, or permission of instructor. Surveys communication disorders that accompany acquired neurological impairments and neurodevelopmental syndromes. Introduces neurological and genetic models, classification systems, diagnostic and treatment procedures.

430	ASPECTS OF NORMAL LANGUAGE DEV	<i>3 credits</i>
(Not open to speech-language pathology and audiology majors) Introduction to acquisition and development of comprehension and production of language phonologically, semantically and syntactically. Relates language acquisition to perceptual development of child and looks at function of language in individual, family and school.		
445	MCULT CONS AUD & SP-LANG PATH	<i>3 credits</i>
Prerequisites: 110 or graduate standing. This course introduces the multicultural considerations faced by audiologists and speech-language pathologists providing services to families and individuals with communication disorders.		
446	OBSERVATION & CLINICAL TECHNQ	<i>4 credits</i>
Prerequisites: 110, 210, 215, 230, "B" average in 235, 321, and 330 AND overall GPA of at least 3.2. Introduction to concepts and processes of clinical practice in speech-language pathology and audiology. Includes clinical observation and case study.		
480	SEM: SPCH-LANG PATH/AUDIO	<i>2 credits</i>
Prerequisite: senior standing. Provides a vehicle for detailed study and discussion of various communicative disorders.		
481	SPEC PRO: SP-LANG PATH/AUD	<i>1-3 credits</i>
(May be repeated for a total of four credits) Prerequisite: permission of instructor. Individual or group projects related to any of the problems of communicative disorders.		
485	TCH & LRN STRATEG SP-LANG PATH	<i>2 credits</i>
Current practice related to clinical intervention designed for individuals with developmental disabilities. Explores the use of the natural environment and the computer as intervention tools.		
496	SEN HNRS P:SP.PATH & AUDIOLOGY	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisites: enrollment in the Honors Program, senior standing and major in speech-language pathology and audiology.		
530	ASPECTS OF NORMAL LANGUAGE DEV	<i>3 credits</i>
(Not open to communicative disorders major) Introduction to acquisition and development of comprehension and production of language - phonologically, semantically and syntactically. Relates language acquisition to perceptual development of child and looks at function of language in individual, family and school.		
540	AUGMENTATIVE COMMUNICATION	<i>3 credits</i>
Prerequisite: Graduate standing in speech-language pathology. Overviews augmentative communication systems-candidates, symbol systems, devices, vocabulary, funding. Considers interdisciplinary issues in assessment/intervention.		
545	MCULT CONS AUD & SP-LANG PATH	<i>2 credits</i>
Prerequisite: 7700:110 or graduate standing. This course introduces the multicultural considerations faced by audiologists and speech-language pathologists providing services to families and individuals with communication disorders.		
560	SP-LANG & HRNG DISORD PUB SCHL	<i>2 credits</i>
(Not open to communicative disorders major) Nature, causes and treatment of speech, hearing and language disorders in public schools. Special reference to role of classroom teacher in identifying and referring student with suspected problems and in working with school clinician.		
561	O & A: PUB SCH SP-LNG&HRNG PRG	<i>2 credits</i>
Prerequisites: Senior or graduate standing or permission. For clinicians who plan to work in public school systems. Covers program requirements and professional/ethical issues imposed by PL 94-142 and IDEA legislation.		
580	EARLY INTERVENTION PRESCH	<i>2 credits</i>
Prerequisite: graduate status. This course explores model programs currently being offered to the three to five year old population, with and without disabilities at two different levels.		
585	DEVELOPMENTAL DISABILITIES	<i>2 credits</i>
Prerequisite: graduate status. Current practice related to clinical intervention designed for individuals with developmental disabilities. Explores the use of the natural environment and the computer as intervention tools.		
590	W: SP-LANG PATHOLOGY&AUDIOLOGY	<i>1-3 credits</i>
(May be repeated for a total of four credits) Prerequisite: permission. Group investigation of particular phase of speech pathology and/or audiology not offered by other courses.		
610	INSTRUM SPCH PATH & AUDIOLOGY	<i>2 credits</i>
Principles and use of clinical and research instrumentation in speech and hearing.		
611	RES METH: COMMUNICATV DISORD I	<i>3 credits</i>
Prerequisite: Full admission to the SLP program or permission of the school director. Introduction to experimental design in field of communicative disorders.		
620	ARTICULATION/PHONOLOGY	<i>2 credits</i>
Prerequisite: Full admission to the SLP program or permission of the school director. Historical background, current theories and research related to etiology, evaluation and treatment of articulation and phonology disorders.		
623	SUPRT SYS INDIV & FAM COMM DIS	<i>2 credits</i>

Prerequisite: Full admission to the SLP program or permission of the school director. Enhances students' abilities to interview, provide educational information, and create support systems for persons with communicative handicaps and their families.

624	NEURO SPEECH/LANG DISORDERS	<i>3 credits</i>
Prerequisite: Full admission to the SLP program or permission of the school director. Course presents current theories and research related to neuroanatomical etiology, diagnosis, classification and treatment of adults with neurologically based communication disorders.		
626	VOICE & CLEFT PALATE	<i>3 credits</i>
Prerequisite: Full admission to the SLP program or permission of the school director. Background and current research related to normal vocal and velopharyngeal function as well as the etiology, diagnosis, and treatment of voice and cleft palate.		
627	STUTTERING: THEORIES&THERAPIES	<i>2 credits</i>
Pre-requisite: Full admission to the SLP program or permission of the school director. This course provides information and discussion on theories, classification, diagnosis, and treatment of fluency disorders.		
628	T: DIF DIAGNOSIS SP&LANG DISOR	<i>2 credits</i>
(May be repeated for a total of four credits) Pre-requisite: Full admission to the SLP program or permission of the school director.		
630	CLIN ISSUES IN CHILD LANGUAGE	<i>4 credits</i>
Prerequisite: Full admission to the SLP program or permission of the school director. Presents current research perspectives on child language disorders and clinical methodologies in language assessment and intervention.		
631	ACQUIRED BRAIN INJURY	<i>3 credits</i>
Prerequisite: Full admission to the SLP program or permission of the school director. A study of behavioral deficits, stages of recovery, assessment techniques, and principles of cognitive rehabilitation related to closed head injury.		
632	DYSPHAGIA	<i>3 credits</i>
Prerequisite: Full admission to the SLP program or permission of the school director. Outlines etiology, assessment, and treatment for infants, children, and adults with feeding and swallowing disorders (dysphagia). It provides actual experiences in diagnosis and feeding techniques.		
633	PROFESSIONAL ISSUES	<i>2 credits</i>
Prerequisite: Full admission to the SLP program or permission of the school director. Ethical, moral, and legal processes within current SLP professional issues are discussed. Students are encouraged to develop personal professional viewpoints and identity.		
639	AUDIOLOGY FOR SP-L PATHOLOGIST	<i>3 credits</i>
Prerequisite: Full admission to the SLP program or permission of the school director. Advanced information on hearing loss and concomitant communication problems with special orientation toward the speech-language pathologist.		
640	SPEC TESTS/MEDICAL AUDIOLOGY	<i>4 credits</i>
Prerequisite: 639 or permission of instructor. Underlying psychoacoustic principles of administration and interpretation of site-of-lesion tests. Relationship between otology and audiology; application of clinical audiology in medical environment.		
642	PEDIATRIC AUDIOLOGY	<i>2 credits</i>
Prerequisite: 639 or permission of instructor. Etiology of hearing loss in children, techniques for testing preschool and school-age children and other difficult-to-test clients.		
643	INDUSTRIAL AUDIOLOGY	<i>2 credits</i>
Prerequisite: 639 or permission of instructor. Theoretical principles of noise measurement; etiology of noise-induced hearing loss and acoustic trauma; industrial hearing conservation programs; Occupational Safety and Health Act (O.S.H.A.) regulations.		
644	AURAL REHABILITATION	<i>4 credits</i>
Prerequisite: permission of instructor. Review of current methodologies employed in aural rehabilitation of children and adults as well as current and potential areas of research.		
645	EVOKED POTENTIALS	<i>2 credits</i>
Prerequisite: permission of instructor. A study of auditory, visual and somatosensory evoked potentials and their clinical applications in audiology and neuro-otology.		
649	ELECTRONYSTAGMOGRAPHY	<i>2 credits</i>
Prerequisite: permission of instructor. Study of the anatomy and physiology of the vestibular system; nystagmus; electronystagmographic (ENG) recording procedures; ENG protocols; interpretation of ENG results.		
650	ADV CLIN PRACT: SPCH-LANG PATH	<i>1-6 credits</i>
Prerequisite: Full admission to the SLP program or permission of the school director. Supervised clinical practicum in evaluation and treatment of speech and language disorders; includes preparation of written reports.		
654	ADV CLIN PRACT: AUDIOLOGY	<i>1-6 credits</i>
Prerequisite: Permission (may be repeated). Supervised clinical practicum in evaluation and treatment of hearing disorders; includes preparation of written reports.		
695	EXTERNSHIP: SP LANG PATHOLOGY	<i>6 credits</i>
Prerequisite: Full admission to the SLP program or permission of the school director. Clinical practicum in a selected speech-language pathology or audiology facility.		
696	EXTERNSHIP SEMINAR	<i>1 credits</i>

(May be repeated once) Corequisite: 695. Prerequisite: Full admission to the SLP program or permission of the school director. Taken concurrently with externship in speech-language pathology. Review and discuss issues raised during extern experience.

697	SP: SPCH PATH &/OR AUDIOLOGY	<i>1-3 credits</i>
(May be repeated for total of six credits.) Prerequisite: Full admission to the SLP program or permission of the school director. Guided research or reading in selected topics in speech pathology, audiology, or language disorders.		
699	MASTERS THESIS	<i>4-6 credits</i>
(May be repeated for a total of six credits.) Prerequisite: permission of School Director.		
701	BASIC & APP PHYS ACOUSTICS-AUD	<i>4 credits</i>
Prerequisites: Admission to the Au.D. Program or permission of instructor. Study of physical acoustics, basis electricity and electronics, as well as principles, methodology, calibration, and maintenance of audiologic equipment. (includes 1 credit hour lab).		
702	ANTMY&PHYS-PERIPHRL AUD&VESTIB	<i>3 credits</i>
Prerequisites: Admission to the Au.D. program or permission of instructor. A study of the anatomy, biophysics, and physiology of the auditory and vestibular systems.		
703	ACOUSTIC PHONETICS	<i>3 credits</i>
Prerequisites: Admission to the Au.D. program or permission. Study of the acoustics, measurement, and nomenclature of speech sounds and theoretical and acoustic bases of speech perception (include 1 hour lab).		
704	CRITICAL ONLY OF RSCH-AUD I	<i>2 credits</i>
Prerequisites: Admission to the Au.D. program or permission. 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	<i>2 credits</i>
Prerequisite: admission to the Au.D. program or permission. Study of conditions/diseases that can affect the auditory system.		
706	ANTMY & PHYS UNDR NEURO-OTOLGY	<i>4 credits</i>
Prerequisite: 702. An in depth study of the anatomy and physiology of the central auditory and vestibular nervous systems (include 1 hour lab).		
707	PSYCHOACOUSTICS	<i>3 credits</i>
Prerequisites: Admission to the Au.D. program or permission. Study of the principles, procedures, and research of psychoacoustics: the relationships between the physical dimensions of auditory stimuli and the resultant perceptual experience with normal and impaired hearing.		
708	CRITICAL ONLY OF RSCH-AUD II	<i>2 credits</i>
Prerequisite: 704. Development of a reading knowledge of research and the ability to evaluate the quality of research studies.		
709	AUDIOLOGIC ASSESSMENT	<i>3 credits</i>
Prerequisite: 705. Corequisite: 743. Theoretical basis for the tests underlying basic audiologic assessment.		
710	INDUSTRIAL & COMMUNITY NOISE	<i>3 credits</i>
Prerequisite: Admission to the Au.D. program. Theoretical principles of noise measurement; etiology of noise-induced hearing loss and acoustic trauma; industrial hearing conservation programs; Occupational Safety and Health Act; community and recreational noise evaluation and management.		
711	SPCH-LANG PATH FOR AUDIOLOGIST	<i>3 credits</i>
Prerequisite: admission to the Au.D. program or permission of instructor. Examination of normal and abnormal aspects of speech and language including their impact on auditory function and testing.		
712	DIAGNOSIS OF AUDITORY DISORDER	<i>3 credits</i>
Prerequisite: 709. Underlying theory and principles of administration and interpretation of site-of-lesion tests.		
713	HEARING AID TECHNOLOGY	<i>4 credits</i>
Prerequisite: 701. Study of amplification systems for the hearing impaired.		
714	GERONTLGCL ISSUES IN AUDIOLOGY	<i>3 credits</i>
Prerequisites: Admission to the Au.D. program or permission. Physiological, psychological, and sociological theories of aging with a focus on the etiology, symptomatology, assessment, and rehabilitation of older adults with hearing impairments.		
715	CNTRL AUDITORY PROC: EVAL & MGT	<i>3 credits</i>
Prerequisites: 705, 706. Study of audiologic evaluation and habilitation/rehabilitation procedures for people having central auditory disabilities.		
716	ADULT HEARING AID FIT & SELECT	<i>3 credits</i>
Prerequisite: 713. Examination of the theory and practice of fitting hearing aids. Emphasis on special clinical procedures, research needs, and evolving technology in hearing instruments (include 1 hour lab).		
717	PEDIATRIC AUDIOLOGY	<i>3 credits</i>
Prerequisite: 709. Study of audiologic diagnostic and auditory habilitative protocols for the birth to 3 population. Both assessment and management strategies will be emphasized.		
718	COCHLEAR IMPLANTS	<i>2 credits</i>
Prerequisites: Admission to the Au.D. program or permission. Study of cochlear implants in children and adults including equipment, candidacy, mapping, and an overview of (re)habilitation.		

719	COUNSELING IN AUDIOLOGY	<i>3 credits</i>
Prerequisites: Admission to the Au.D. program or permission. Focus on interviewing, counseling and interacting with individuals with hearing impairments, their families, and significant others.		
720	PEDIATRIC AMPLIFICATION	<i>3 credits</i>
Prerequisites: 713, 716, 717. The focus of study is on amplification systems and fitting techniques for the pediatric population.		
721	Eval & Mgt of Balance Disorder	<i>3 credits</i>
Prerequisites: Admission to the Au.D. program or permission. Study of the balance mechanism; differential diagnostic assessment of balance disorders including electronystagmography, posturography and rotation testing; rehabilitation of the balance disordered patient.		
722	Audiologic Mgt of Schl-Age Child	<i>3 credits</i>
Prerequisite: 717. Focus on educational audiology. Features delivery of audiologic services designed to access the school environment for children ages 4-21.		
723	Audiologic Rehabilitation-Adults	<i>3 credits</i>
Prerequisite: 716. Study of current methodologies employed in the audiologic rehabilitation of adults with hearing impairments. Implementation of remedial strategies is emphasized.		
724	HISTORY OF AUDIOLOGY	<i>1 credits</i>
Prerequisites: Admission to the Au.D. program or permission. An examination of the history of deafness/hearing impairment and the profession of audiology.		
725	MEDICAL MGT-AUDITORY DISORDERS	<i>2 credits</i>
Prerequisite: 712. A study of the multidisciplinary approach to medical/surgical management of patients with auditory and vestibular disorders.		
726	ELECTROPHYS TECH IN AUDIOLOGY	<i>3 credits</i>
Prerequisites: 706 or permission. Study of evoked responses used in diagnostic audiology, including ABR, MLR, EChocG, ENOG, ALR, P300, VER, and SSER.		
727	CULTURAL ISSUES IN DEAFNESS	<i>2 credits</i>
Prerequisites: Admission to the Au.D. program or permission. An introduction to Deaf Culture and the audiologist's roles and responsibilities in planning treatment with a member of the deaf community.		
728	SEMINAR IN AUDIOLOGY	<i>2 credits</i>
Prerequisites: Admission to the Au.D. program or permission of instructor. Selected current topics in audiology with emphasis on review of current literature. Course may be repeated up to 6 credits.		
729	RESEARCH PROJECT IN AUDIOLOGY	<i>3 credits</i>
Prerequisites: Admission to the Au.D. program or permission. Completion of a Doctoral Research Project including data collection, analysis, write-up, and oral presentation.		
730	PRACTICE MGMT IN AUDIOLOGY	<i>4 credits</i>
Prerequisites: Admission to the Au.D. program or permission. Study of issues which impact the management of audiological practices, including establishing a private practice, reimbursement, marketing, record keeping and professional liability.		
731	FOURTH YEAR SEMINAR	<i>1-6 credits</i>
Prerequisite: Admission to the Au.D. program or permission from the instructor. Corequisite: 749 or 750 or permission of instructor. In-depth consideration of topics/issues in the practice of audiology with emphasis upon issues related to clinical rotation issues. Repeatable up to 6 credits.		
741	DIRECTED OBSERV-AUDIOLOGY I	<i>1 credits</i>
Prerequisites: Admission to the Au.D. program or permission of instructor. Introduction to clinical practicum in Audiology. Directed observation of clinical practice including audiologic diagnosis and audiologic rehabilitation are required. (Repeatable up to 6 credits)		
742	DIRECTED OBSERV-AUDIOLOGY II	<i>1 credits</i>
Prerequisites: 741. Introduction to clinical practicum in audiology. Directed observation of clinical practice including audiologic diagnosis and audiologic rehabilitation are required. (Repeatable up to 6 credits)		
743	CLERKSHIP I	<i>1 credits</i>
Corequisite: 709 or permission. Clinical practicum in audiology during which students perform discrete tasks under supervision. Repeatable up to six credits.		
744	CLERKSHIP II	<i>1 credits</i>
Prerequisite: 743. Supervised clinical practicum in audiology during which students will perform discrete tasks while under supervision. Repeatable up to six credits.		
745	INTERNSHIP IN AUDIOLOGY I	<i>2 credits</i>
Prerequisites: 744 and permission. Supervised practicum in audiology requiring the independent performance of basic audiologic procedures, including hearing aid management. (Repeatable up to 8 credits)		
746	INTERNSHIP IN AUDIOLOGY II	<i>2 credits</i>
Prerequisites: 745 and permission. Supervised clinical practicum in audiology requiring the independent performance of diagnostic audiology, hearing aids, and audiologic rehabilitation procedures. (Repeatable up to 8 credits)		
747	GRADUATE AUDIOLOGIST I	<i>3 credits</i>
Prerequisite: 746. Supervised clinical practicum in audiology which encompasses audiologic assessments and audiologic rehabilitation. Repeatable up to nine credits.		

748	GRADUATE AUDIOLOGIST II	<i>3 credits</i>
Prerequisites: 747 and permission. Supervised clinical practicum in audiology requiring the independent performance of audiologic assessment procedures, audiologic rehabilitation, and vestibular assessment and rehabilitation. Repeatable up to nine credits.		
749	GRADUATE AUDIOLOGIST III	<i>8 credits</i>
Prerequisites: 748 and permission; successful completion of the PRAXIS Examination. Corequisite: 731. Supervised clinical practicum in audiology requiring the independent performance of audiologic assessment procedures, audiologic rehabilitation, and vestibular assessment and rehabilitation. Repeatable up to 24 credits.		
750	GRADUATE AUDIOLOGIST IV	<i>8 credits</i>
Prerequisites: 749, successful completion of the PRAXIS Examination; corequisite: 731. Supervised clinical practicum in audiology requiring the independent performance of audiologic assessment procedures, audiologic rehabilitation, and vestibular assessment and rehabilitation. Repeatable up to 24 credits.		
751	GRADUATE AUDIOLOGIST V	<i>3 credits</i>
Prerequisite: 750 and permission; Co-requisite: 731. Supervised clinical practicum in audiology requiring the independent performance of audiologic assessment procedures, audiologic rehabilitation, and vestibular assessment and rehabilitation. Repeatable up to 9 credits.		
899	DOCTORAL ENROLLMENT/RESIDENCY	<i>1-8 credits</i>
Prerequisite: Graduate standing in the Au.D. program and permission of instructor. Continuous enrollment course to maintain status in Au.D. program		



Social Work (7750)

270	DIVERSITY AND SOCIAL WORK	<i>3 credits</i>
Introductory course explores issues related to poverty and minority issues as they relate to at-risk populations.		
275	INTRO: SOCIAL WORK PRACTICE	<i>3 credits</i>
Introduces students to concepts, settings, and vulnerable populations related to the field of social work. Emphasis placed on purposes, values, ethics, knowledge, and skills that characterize the professional social worker. Provides an overview of theoretical and practical knowledge about the social work profession needed for entry levels of practice in social work.		
276	INTRODUCTION TO SOCIAL WELFARE	<i>3 credits</i>
Survey of field of social welfare; place of social work profession within human services institutions of United States. Introduction of basic concepts relating social welfare institutions and social work to society.		
401	SOCIAL WORK PRACTICE I	<i>3 credits</i>
Prerequisite: Social Work major; Corequisite 405. Basic concepts and methods of Generalist social work practice, with an emphasis on understanding and working with individuals.		
402	SOCIAL WORK PRACTICE II	<i>3 credits</i>
Prerequisite: 401, 405; or permission of instructor. Concepts and methods of social work practice particularly relating to understanding and working with groups in various settings in our society.		
403	SOCIAL WORK PRACTICE III	<i>3 credits</i>
Prerequisite: 401, 405, or permission of instructor. Development of understanding and practice methods for utilization of community organization and social planning as social work process in assessing problems and developing program to meet needs.		
404	SOCIAL WORK PRACTICE IV	<i>3 credits</i>
Prerequisite: 401, 405, or permission of instructor. Professional social work practice with families in social services; the dynamics of family systems, assessment of family function and dysfunction, professional helping processes.		
405	PRACTICE I SKILLS LAB	<i>3 credits</i>
Prerequisites: 270, 276, 427, 3100:103, 3700:100, 3750:100, 3850:100 and 3250:100 or 200 or 2040:247; corequisite: 401. Prepares students for beginning generalist social work practice and proves a context to apply and evaluate generic knowledge base, values, ethics, and skills common to practice with client systems.		
411	WOMENS ISS SOC WORK PRACTICE	<i>3 credits</i>
Prerequisite: 401 or permission of instructor. Social work practice, knowledge and skill, social welfare institutions and social policy in relation to women's issues and concerns in the United States.		
421	FIELD EXPERIENCE SEMINAR I	<i>2 credits</i>
Prerequisites: 401 and permission of the instructor. Corequisite: 493. The first of two consecutive courses that assists students in making the transition from classroom learning to experiential learning in the field practicum.		
422	FIELD EXPERIENCE SEMINAR II	<i>2 credits</i>
Prerequisites: 421 and 493; Corequisite: 494. The second of two consecutive courses, this course assists students in integrating, synthesizing, and applying classroom learning to field experiences and assignments.		
425	SOCIAL WORK ETHICS	<i>3 credits</i>
Prerequisite: Social Work major, permission of instructor. Social Worker's code of ethics as applied to practices, problems and issues in social work.		
427	HUMAN BEHVR & SOCIAL ENVIRON I	<i>3 credits</i>
Social work perspective on human development across the life cycle. Human diversity approach consistent with the needs of social work students preparing for practice.		
430	HUMAN BEHV & SOCIAL ENVIRON II	<i>3 credits</i>
Prerequisite: Social Work major, 427, or permission of instructor. Examination of larger social systems including families, groups, neighborhoods, and organizations. Focuses on the unique systemic characteristics of each system and its development.		
440	SOCIAL WORK RESEARCH I	<i>3 credits</i>
Prerequisites: Social Work major or permission of instructor. Overview of scientific inquiry and the research process as it applies to the field of social work. Emphasis is placed on the various social worker roles in relation to research.		
441	SOCIAL WORK RESEARCH II	<i>3 credits</i>
Prerequisite: 440 or permission of instructor. A continuation of Social Work Research I with a focus on applying research concepts. Includes content on the evaluation of practice outcomes and the use of computers in data analysis.		
445	SOC POLICY ANALY-SOCIAL WORKER	<i>3 credits</i>

Prerequisite: Social Work major, permission of instructor. Description, analysis and construction of social policy in social services; to understanding forces and processes which establish or change social policies, to predict consequences of social policies and to establish goals for social policy development; integrated into effective social work methodology.

450	SOCIAL NEEDS & SERVICES: AGING	<i>3 credits</i>
Prerequisite: 401 or permission of instructor. Application of knowledge and principles of professional social work practice to understanding, development and provision of social services to meet needs of aging and later mature individuals, families and communities and institutions serving them and their relatives.		
451	SOCIAL WORK IN CHILD WELFARE	<i>3 credits</i>
Prerequisite: 401 or permission of instructor. In-depth exploration of structure and functioning of social services designed to help children, and of practice of social work in child-welfare settings. Consideration of supportive, supplementary and substitutive services.		
452	SOCIAL WORK IN MENTAL HEALTH	<i>3 credits</i>
Prerequisite: 401 or permission of instructor. Issues, organization, development and methodologies of current professional social work practice in mental-health settings.		
454	SOCIAL WORK-JUVENILE JUSTICE	<i>3 credits</i>
Prerequisite: 401 or permission of instructor. The theory and practice of social work in the juvenile justice systems of the United States. Traditional procedures and recent developments, prevention, diversion and community outreach, legal concerns, case management, institutional functioning.		
455	SOC WRK PRAC WITH AFR AMER FAM	<i>3 credits</i>
Prerequisite: 401 or permission of instructor. Contemporary problems facing African American families; male-female relationships, single parent households, African American teens and elderly, public policy, theoretical models, explaining development of the African American family.		
456	SOCIAL WORK IN HEALTH SERVICES	<i>3 credits</i>
Prerequisite: 401 or permission of instructor. Policies, programs and practice in health-care settings: short-term, intermediate and long-term hospitals, out-patient services, emergency services, clinics, visiting nurse services, nursing homes, pediatric services, self-help organizations.		
459	SOC WRK WITH MENTALLY RETARDED	<i>3 credits</i>
Prerequisite: 401 or permission of instructor. Application of social work principles in the provision of social services to meet the needs of the mentally retarded and developmentally disabled and their families.		
470	LAW FOR SOCIAL WORKERS	<i>3 credits</i>
Prerequisite: 401 or permission of instructor. Basic terminology, theories, principles, organization and procedures of law will be explored along with the relationships between social work and law and comparisons of the theoretical bases of the two professions.		
475	SUBSTAN ABUSE & SOC WORK PRACT	<i>3 credits</i>
Prerequisites: 401 or permission of instructor. Provides students with the essential knowledge and skill for successful social work practice with people involved in substance abuse.		
480	ST: SOC WORK & SOC WELFARE	<i>1-3 credits</i>
Prerequisite: permission of instructor. Analysis of current social work and social welfare theory and policy, settings, innovative interventions, and trends in delivery systems in relation to selected areas of concern. Topics and credits variable.		
493	FLD EXP: SOCIAL AGENCY I	<i>3 credits</i>
Prerequisites: 401, 402, 427, and permission of instructor. Corequisite: 421. First of two consecutive courses of supervised internship in a social service setting. Facilitates acquisition of generalist practice skills. Student must receive permission to take the course with the Field Coordinator during early part of semester preceding enrollment. For senior social work majors.		
494	FLD EXP: SOCIAL AGENCY II	<i>3 credits</i>
Prerequisites: 493, 421 and permission of instructor; corequisite: 422. Second of two consecutive courses of supervised internship in a social service setting. Facilitates the continued acquisition of generalist practice skills. For senior social work majors only.		
497	I.I.: SOCIAL WORK	<i>1-3 credits</i>
Prerequisites: permission and prearrangement with instructor. Individual readings, research or projects in area 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.		
499	SR HONORS PROJECT: SOCIAL WORK	<i>1-3 credits</i>
(May be repeated for a total of six credits) Prerequisites: senior standing in Honors Program and approval of honors preceptor in department. Open only to social work major enrolled in Honors Program. Independent study leading to completion of senior honors thesis or other original work resulting in writing of research paper in proper scholarly form, supervised by student's honors project adviser within the department.		
558	ADULT DAY CARE	<i>3 credits</i>
Prerequisite for 458: 276 or permission of instructor; for 558: permission of instructor. Planning, development, implementing, evaluating, and delivery of adult day-care services.		
580	ST: SOC WORK & SOC WELFARE	<i>1-3 credits</i>
Prerequisite: permission of instructor. Analysis of current social work and social welfare theory and policy, settings, innovative interventions and trends in delivery systems in relation to selected areas of concern. Topics and credits variable.		

597	I.I.: SOCIAL WORK	<i>1-3 credits</i>
Prerequisites: permission and prearrangement with instructor. Individual readings, research or projects in area 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.		
601	FOUNDATION FIELD PRACTICUM	<i>3 credits</i>
Prerequisites: 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.)		
602	FOUNDATION FIELD PRACTICUM	<i>3 credits</i>
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. Credit/Noncredit. (Offered only Spring Semester.)		
603	ADVANCED FIELD PRACTICUM	<i>3 credits</i>
Prerequisites: 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.)		
604	ADVANCED FIELD PRACTICUM	<i>3 credits</i>
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.)		
605	SOC WRK PRACTICE W/SMALL SYSTM	<i>3 credits</i>
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.		
606	SOC WRK PRACTICE W/LARGE SYSTM	<i>3 credits</i>
Prerequisite: 605. Provides the basic knowledge, skills, and strategies of social work practice with task groups, organizations and communities.		
607	ADV PRACT W/SMALL SYSTMS I	<i>3 credits</i>
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.		
608	ADV PRACT W/SMALL SYSTMS II	<i>3 credits</i>
Prerequisite: 704 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.		
611	DYNAMICS OF RACISM & DISCRIMNT	<i>3 credits</i>
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.		
622	FUNDAMENTALS OF RESEARCH I	<i>3 credits</i>
Prerequisite: graduate status or permission of instructor. This course provides an Introduction to the logic of scientific inquiry, the research process, and the relationship between research and social work practice.		
623	FUNDAMENTALS OF RESEARCH II	<i>3 credits</i>
Prerequisite: 622; statistics course; or permission of instructor. Provides students with an understanding of quantitative and qualitative methodologies and the use of descriptive and inferential statistics in analyzing research data.		
631	HUM BEH &SO ENV: SML SOC SYSTS	<i>3 credits</i>
Prerequisite: graduate status or permission of instructor. This course focuses on understanding the human behavior and life cycle development of people as individuals and as members of families and other small groups.		
632	HUM BEH & SO ENVR: LARGE SYSTS	<i>3 credits</i>
Prerequisites: 631 or permission of instructor. This course focuses on the human behavior of people as members of larger social systems including formal and informal organizations, communities and institutions.		
646	SOCIAL WELFARE POLICY I	<i>3 credits</i>
Prerequisite: graduate status or permission of instructor. Examines the historical, philosophical and value bases of social welfare as well as the relationship between social work practice, policy and service delivery.		
647	SOCIAL WELFARE POLICY II	<i>3 credits</i>
Prerequisite: 646 or permission of instructor. This course prepares students with the beginning skills to engage in social problem/policy analysis.		
650	ADV STANDING INTEGRATIVE SEM	<i>6 credits</i>
Prerequisite: advanced standing. Provides an integrative view of social work practice with an emphasis on values, foundation knowledge and skills, and evaluation of professional interventions.		
656	SOC WRK PRACT W/GAY & LESBIANS	<i>3 credits</i>
Prerequisite: second level graduate status or permission of instructor. This course examines gay and lesbian culture and lifestyles, discrimination based on sexual orientation, and intervention strategies appropriate to practice with gays and lesbians.		
663	PSYCHOPATHOLOGY & SOCIAL WORK	<i>3 credits</i>
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.		
665	SUPERVISION & STAFF DEVELOPMNT	<i>3 credits</i>

Prerequisite: second level graduate student or permission of instructor. An examination of the purpose, functions, and theories of supervision; the impact of cultural, ethnic and racial differences in supervision/staff development; and problems encountered.

671	SOCIAL WORK ADMINISTRATION	<i>3 credits</i>
Prerequisite: second level graduate student or permission of instructor. This course focuses on supervisory and managerial roles and functions as they are carried out at different hierarchical levels in human service organizations.		
672	COMMUNITY ORGANIZTN & PLANNING	<i>3 credits</i>
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.		
673	STRATEG COMMUNITY ORGANIZATION	<i>3 credits</i>
Prerequisite: second level graduate student or permission of instructor. Emphasizes the historical development and application of several community strategies used to identify community problems, and how to organize and empower diverse community groups.		
674	COM,ECON SYS & SOC POLCY ANALY	<i>3 credits</i>
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.		
675	PROGRAM EVALUATION	<i>3 credits</i>
Prerequisite: second level graduate student or permission of instructor. This course provides students with methods of evaluating programs in agencies, including approaches, measurement, design, data collection and analyses employed in program outcome research.		
676	FISCAL MGMT OF SOCIAL AGENCIES	<i>3 credits</i>
Prerequisite: second level graduate student or permission of instructor. This elective course concentrates on the financial management of social administration, financial planning and management, principles of economic and fiscal exchange, accountability and fiscal accounting.		
680	AGING & SOCIAL WORK PRACTICE	<i>3 credits</i>
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.		
681	AGING: POLICIES & PROGRAMS	<i>3 credits</i>
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.		
685	SOC WRK PRACT: FAMILY & CHILD	<i>3 credits</i>
Prerequisite second level graduate student or permission of instructor. Examines the major problems encountered by children and families in the life cycle and explores intervention strategies and programs to address their needs and strengths.		
686	SOC WLF POL & SVCS FMLY & CHLD	<i>3 credits</i>
Prerequisite: second level graduate student or permission of instructor. Examines the federal and state laws, policies, and services governing children and families, including the supportive, supplemental and substitutive aspects of services.		
690	ADV PRCT & POL SBSTNC ABUSE	<i>3 credits</i>
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.		
691	SOCIAL WORK VALUES AND ETHICS	<i>3 credits</i>
Prerequisite: Full admission to Graduate program in social work. 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.		
692	GROUP WORK PRACTICE	<i>3 credits</i>
Prerequisite: Full admission to the graduate program in social work. Examines the fundamental knowledge and skills required for social work practice with groups across multiple client systems. Knowledge of social work values and ethics is applied as it relates to all aspects of group work. Dynamics of working with special populations will be emphasized (e.g., the effect of the addictive processes on group therapy, age-appropriate communication with children).		
693	ST: ADV SOCIAL WORK PRACTICE	<i>1-3 credits</i>
Prerequisite: admission to the MSW Program or permission of the program director. Detailed analysis and study of current practice issues and considerations faced by social work practitioners providing services and interventions at advanced levels.		
694	THEORIES & PROC IN ADDICTN STU	<i>3 credits</i>
Prerequisite: Full admission to the graduate program in social work. Explores historical perspective of substance abuse in society, models and theories that describes addiction and the effects of addiction on individuals and families; effects of addition in individuals; techniques and practices that have positive outcomes in treatment and prevention fields; and professional issues facing the addiction field.		
695	HLTH CARE: PLAN & POL ISSUES	<i>3 credits</i>
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.		
696	EPIDEM ANALY HLTH & SOC PROBS	<i>3 credits</i>

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.



Nutrition and Dietetics (7760)

421

SP: NUTRITION AND DIETETICS

1-3 credits

Additional study or apprentice experience in specialized field or preparation; group and individual experimentation.



Cooperative Education (8000)

301

COOPERATIVE EDUCATION

0 credits

(May be repeated). For cooperative education students only. Work experience in business, industry, or governmental agency. Comprehensive performance evaluation and written report required.



Nursing (8200)

100	INTRODUCTION TO NURSING	<i>1 credits</i>
Introduces students to influences of past, present, and future political, legal, social, and cultural processes on the nursing profession and the roles of nurses.		
101	INTRO TO BACCALAUREATE NURSING	<i>1 credits</i>
Prerequisite: Licensed Practical Nurse. Introduces L.P.N./B.S.N. students to the purposes of baccalaureate nursing education. Explores philosophy, nursing theories, research, emerging roles, decision making, and the health care system.		
211	FOUND OF NURSING PRACTICE I	<i>5 credits</i>
Prerequisite: Admission to the College. This course focuses on basic concepts and skills needed by novice nursing students in order to care for clients. This course will focus on nurse-client relationships, communication, nursing process, psychomotor skills, and beginning pharmacology. Clinical experiences will reflect these concepts and skills.		
212	FOUND OF NURSING PRACTICE II	<i>5 credits</i>
Prerequisite: 211. Builds on Foundations of Nursing Practice I focusing on promoting holistic well being across the lifespan. Clinicals are with children and adults, acute and non-acute settings.		
215	PROFESSIONAL ROLE DEVELOPMENT	<i>2 credits</i>
Prerequisite: Admission to the College. This foundational course explores the professional role of the nurse and nursing's impact on multiple levels of health care and health outcomes. An overview of the art and science of nursing are discussed along with strategic nursing initiatives.		
216	TRANSITION TO BACC NURSING	<i>3 credits</i>
Prerequisite: Admission to College of Nursing. This course emphasizes the transition from Licensed Practical Nurse to professional nurse. The LPN is introduced to the discipline of nursing from the baccalaureate perspective.		
217	PATHOPHYSIOLOGY FOR NURSES	<i>3 credits</i>
Prerequisite: Admission to the College of Nursing. Develop understanding of basic concepts related to pathophysiologic mechanisms of health, illness as applied to nursing. Emphasis on application to nursing using the nursing process.		
225	HEALTH ASSESSMENT	<i>3 credits</i>
Prerequisite: Admission to the College. The skills of taking health histories and performance of basic physical assessment. Supervised practice in the Learning Resource Center.		
230	NURSING PHARMACOLOGY	<i>3 credits</i>
Prerequisite: Admission to the College of Nursing. Emphasis on fundamental concepts of pharmacology as applied to major drug classes, actions and effects. Application of nursing process to drug therapy across the lifespan.		
325	CULTURAL DIMENSIONS OF NURSING	<i>2 credits</i>
Prerequisites: Satisfactory completion of all required Sophomore level nursing courses. Nursing care of clients of diverse ethnicities is emphasized. Special attention is given to selected ethnic groups' communication patterns, spirituality, health beliefs and practices.		
336	CONCEPTS OF PROFESSIONAL NURSING	<i>4 credits</i>
Prerequisite: Admission to the RN/BSN sequence. Introduces the RN to baccalaureate nursing. Focuses on the relationship of concepts and theories to the role of the professional nurse. Offered Summer only.		
337	HEALTH ASSESSMENT/RN	<i>3 credits</i>
Prerequisite: admission to RN program. This three hour health assessment course is designed for the registered nurse. The course consists of both theory and supervised clinical laboratory practice.		
350	NURSING OF CHILDBEARING FAMILY	<i>5 credits</i>
Prerequisite: Satisfactory completion of Sophomore level nursing courses. A theoretical and clinical basis for care of the childbearing family in varying degrees of health and in a variety of settings.		
360	NURSING CARE OF ADULTS	<i>5 credits</i>
Prerequisite: Satisfactory completion of Sophomore level nursing courses. Acute nursing care of adults with nutrition, elimination, metabolic, sexual, reproductive, and immunological concerns. Includes theory and practice at the advanced beginner level.		
370	NURSING CARE OF OLDER ADULTS	<i>5 credits</i>
Prerequisite: Satisfactory completion of Sophomore level nursing courses. Acute nursing care of older adults with mobility, perception, circulation, and oxygenation concerns. Includes theory and practice at the advanced beginner level.		
380	MENTAL HEALTH NURSING	<i>5 credits</i>
Prerequisite: Satisfactory completion of Sophomore level nursing courses. Assists students in developing knowledge and skills for providing care to individuals with mental health needs in a variety of settings.		

405	NRSNG CARE HEALTHY INDVDL/FAM	<i>3 credits</i>
Prerequisites: 336, 337. Health care concepts across the lifespan with emphasis on health promotion and illness prevention for individuals, families, and groups are discussed.		
406	PALLIATIVE NURSING CARE	<i>3 credits</i>
Prerequisite: 336. Dimensions of end of life nursing care, including family dynamics, grief and loss, ethical considerations, physiologic changes and community resources are examined.		
409	INTERNATIONAL HEALTH	<i>2-3 credits</i>
Prerequisite: Junior standing. Study in an international location. Focuses on comparisons of education, ethics, government, demography and geography on health care and nursing roles and responsibilities.		
410	NURSING FAMILIES WITH CHILDREN	<i>5 credits</i>
Prerequisite: Satisfactory completion of Junior level nursing courses. Theoretical and clinical nursing course focused on the child within a family context. Health problems of both acute and chronic nature are explored.		
412	GLOB PERSPCT OF HLH & HLH CARE	<i>2-3 credits</i>
Prerequisites: senior status. 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.		
415	CMPLX CARE AGING FAMLS/RN ONLY	<i>3 credits</i>
Prerequisites: 336, 337, 405, 445. Complex nursing issues related to care of aging individuals and families are explored. The nurse's role in physiological, emotional and psychosocial care is discussed.		
430	NURSING CMPLX/CRTCL SITUATIONS	<i>5 credits</i>
Prerequisite: Satisfactory completion of all Junior level nursing courses. Introduces advanced beginners to the complexity of nursing care in acute complex and critical situations of patients with multi-system failures.		
435	NURSING RESEARCH	<i>2 credits</i>
Prerequisite: Satisfactory completion of all Junior level nursing courses. Exploration of the effects of nursing research on the profession, become a knowledgeable consumer of research.		
436	NURSING RESEARCH/RN ONLY	<i>3 credits</i>
Prerequisite: 336. Exploration of the effects of nursing research on the profession and becoming a knowledgeable consumer of research.		
440	NURSING OF COMMUNITIES	<i>5 credits</i>
Prerequisite: Satisfactory completion of all Junior level nursing courses. A synthesis of nursing skills applied among various community populations. Health and illness care strategies within diverse population groups.		
444	NURSING OF COMM PRACTM-RN ONLY	<i>2 credits</i>
This clinical practicum provides experiences related to community health nursing in a variety of traditional and nontraditional community environments.		
445	NURSING OF COMMUNITIES/RN ONLY	<i>3 credits</i>
Prerequisites: 336, 337, 405. This course provides a theoretical foundation for community, including public health nursing, to individuals and families in a variety of settings to diverse populations.		
446	PROFESSIONAL NRSNG LEADERSHIP	<i>3 credits</i>
Prerequisite: 445. Issues related to nursing leadership, management, policy, and economic issues within the healthcare system that influence nursing practice are discussed.		
447	PROF NURS LEADERSHIP PRACTICUM	<i>2 credits</i>
This clinical course offers the opportunity to implement leadership and management skills in a health care setting.		
448	PROFESSIONAL NURSING CAPSTONE	<i>2 credits</i>
Prerequisites: 415 and 446. Opportunities to synthesize information and reflect on ethical, legal, cultural, and political dimensions of employment and patient care within the health care system are provided.		
450	SR PRACTICUM & NURS LEADERSHIP	<i>5 credits</i>
Prerequisite: Completion of all Junior level courses. This course focuses on the application of leadership and management principles to the practice of nursing. Political, social, cultural, legal and ethical issues are explored.		
453	SCHOOL NURSE PRACTICUM I	<i>5 credits</i>
Prerequisite: 5570:421/521, 5570:423/523, 225 or 650. Corequisites: 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 on family, community, school contexts.		
454	SCHOOL NURSE PRACTICUM II	<i>5 credits</i>
Prerequisite: 5570:421/521, 5570:423/523, 225 or 650, 453/553 or waiver. Emphasis on primary health care nursing to enhance positive health behavior outcomes of children/adolescents with minor common health or behavioral problems and chronic illnesses.		
480	SENIOR HONORS PROJECT	<i>3 credits</i>
Prerequisites: Senior standing in Honors Program and nursing major. Completion and presentation of an original investigation of a significant topic or creative work which must meet high standards of scholarship.		
489	ST: NURSING	<i>1-4 credits</i>
(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.		
493	W: NURSING	<i>1-4 credits</i>

(May be repeated as new topics are presented) Selected topics in nursing. May be used to meet undergraduate or graduate major requirements at the discretion of the college.

497	INDP STUDY: NURSING	<i>1-3 credits</i>
Prerequisite: permission of Director of Nursing Education, and good academic standing. Provides opportunity to develop greater depth in an area of nursing through methodology specific to discipline of nursing.		
509	INTERNATIONAL HEALTH	<i>2-3 credits</i>
Prerequisite: Admission to MSN program. A comparison of nursing roles and responsibilities in an international environment. The influence of education ethics, government, demography and geography on health care will be considered.		
512	GLOB PERSPCT OF HLH & HLH CARE	<i>0 credits</i>
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.		
553	SCHOOL NURSE PRACTICUM I	<i>5 credits</i>
Prerequisite: 5570:521, 523 and 8200:225 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, community, school contexts.		
554	SCHOOL NURSE PRACTICUM II	<i>5 credits</i>
Prerequisite: 5570:521, 523; 8200:225 or 650; 8200:553. Emphasis on primary health care nursing to enhance positive health behavior outcomes of children/adolescents with minor common health or behavioral problems and chronic illnesses.		
561	ADV PHYS CNCPTS-HEALTH CARE I	<i>3 credits</i>
Prerequisite: admission to MSN program. This course presents an in-depth study of physiological processes in the areas of neurological, neuromuscular and cardiovascular physiology and their interrelationship with therapeutic agents.		
562	ADV PHYS CNCPTS-HEALTH CARE II	<i>3 credits</i>
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 therapeutic agents.		
589	ST: NURSING	<i>1-4 credits</i>
(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	W: NURSING	<i>1-4 credits</i>
(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.		
602	ADVANCED ADULT/GERO ASSMNT/FNP	<i>2 credits</i>
Prerequisites: 608 and admission into the Post MSN FNP Certificate Program for the Pediatric Nurse Practitioner. Advanced adult/gerontological assessment and clinical reasoning for primary health care nursing of adults, with introduction to differential diagnosis and clinical management.		
603	THEORETICAL BASIS FOR NURSING	<i>3 credits</i>
Prerequisite: admission to MSN program. Overview of extant nursing science. Evaluation and critique of nursing conceptual models. Analysis of the relationships of theory, research, and practice.		
604	FAMILY ASSESSMENT PROC IN NURS	<i>2 credits</i>
Prerequisite: Admission in Graduate Program. Provides advanced practice nurses with information regarding Nursing assessment and interventions techniques that can be used with families in a variety of health care settings.		
606	INFO MGMT IN ADV NURS PRACTICE	<i>3 credits</i>
Prerequisites: Admission to the MSN Program, Completion of Graduate Statistics and/or co-requisite 613. This course is focused on nursing informatics to support clinical-decision making in advanced practice and administration.		
607	POLICY ISSUES IN NURSING	<i>2 credits</i>
Prerequisite: admission to MSN program. Analysis of policy issues that impact on nursing and health care delivery to diverse population(s). Examine methods to shape policy, distribution, and allocation of resources.		
608	PATHOPHYSIOL CNCPTS NRSNG CARE	<i>3 credits</i>
Prerequisite: admission to MSN program. In-depth study of pathological conditions and related treatment modalities. The course focuses on specific nursing interventions related to these pathophysiological abnormalities.		
609	PATHOPHY FOR NURSE ANESTHETIST	<i>3 credits</i>
Prerequisite: admission to the Nurse Anesthesia Program. Course focuses on pathophysiological abnormalities and their anesthetic implications. Normal anatomy and physiology, labs, diagnostic including selected major alterations of physiologic function and major anesthetic implications are covered.		
610	ADV AD/GERON ASSESSMNT W PRACT	<i>3 credits</i>
Prerequisites: admission to one of the Advanced Practice Nursing tracks or permission of instructor, 608. Advanced adult/gerontological assessment and clinical reasoning in primary health care nursing with introduction to differential diagnosis and clinical management.		
611	ADV MENTAL HEALTH ASSESSMT	<i>3 credits</i>
Prerequisite: 608 or permission of instructor. Concepts related to psychoneuroimmunology will be examined with application to differential diagnosis of behavioral health disorders commonly used by advanced practice behavioral health nurses.		

612	ADV CLINICAL PHARMACOLOGY	<i>3 credits</i>
Prerequisites: admission to MSN program, 608. Examines principles of pharmacology and therapeutics for major pharmacological agents used by Advanced Practice Nurses to manage adult/gerontological problems in primary health care settings.		
613	NURSING INQUIRY I	<i>3 credits</i>
Prerequisites: admission to MSN program. Concepts and ethical issues relating to scientific inquiry are examined, emphasizing the phases of the research process. Students participate in critical analysis of nursing research.		
616	ADV PEDTRC/ADLSNT ASSMNT/FNP	<i>2 credits</i>
Prerequisites: 608. Ohio Certificate of Authority as an Adult Nurse Practitioner. Advanced pediatric/adolescent assessment and clinical reasoning for primary health care nursing with introduction to differential diagnosis and clinical management for FNP practice.		
617	ADV PHMLGY:CHD/ADOL HLH NR/FNP	<i>2 credits</i>
Prerequisites: 608 or equivalent course. Certified Adult or Gerontological Nurse Practitioner with Certificate of Authority to practice in Ohio. Emphasis on major categories of pharmacological agents, class of agents, influencing developmental outcomes of children/adolescents in ambulatory, acute and chronic care environments for FNPs.		
618	NURSING INQUIRY II	<i>3 credits</i>
Prerequisite: 613 or permission of instructor. Emphasis on development of competencies in scientific inquiry. Research practicum will involve a) a pilot study; or b) participation in faculty research.		
620	ADULT/GERON HLTH NRSNG NP I	<i>2 credits</i>
Prerequisite: Admission to the Adult/Gerontological Nurse Practitioner track or Post-MSN certificate program; prerequisite or corequisite: 610. Research and theory integral to advanced nursing practice of adults/older adults/families with selected common health problems. Emphasis on comprehensive assessment, health promotion, and risk reduction.		
621	ADULT/GERON HLTH NRSNG NP II	<i>2 credits</i>
Prerequisites: 610, 620 or its equivalent for the Post-MSN, 627; prerequisite or corequisite: 612, corequisites: 628, 690. Focuses on problems common to acute illness in adults, older adults in acute, episodic care settings. Multidisciplinary care planning and coordination are emphasized, including transition to community-based care.		
622	ADULT/GERON HLTH NRSNG NP III	<i>2 credits</i>
Prerequisites: 621 or the equivalent for the Post-MSN, 628, 690; corequisites: 629, 692. Focuses on nursing care of middle aged/older adults and their families experiencing chronic illness. Emphasizes management of problems common to chronic care and rehabilitation.		
624	ADULT/GERON HLTH NRSNG NP IV	<i>1 credits</i>
Prerequisites: 622, 629, 692, or permission of instructor; corequisites: 623, 694. Integration of knowledge and skills for a population of adults/older adults with emphasis on problems of increasing complexity. Issues integral to APN practice are addressed.		
625	PRIM CARE OF THE OB PATNT/FNP	<i>1 credits</i>
Prerequisites: 5600:648, 8200:602, 612. Application of evidence-based knowledge in the promotion of health and wellness of women during normal pregnancy. Emphasis is on assessment and clinical management of pregnancy.		
626	ADULT/GERO NP RESIDENCY	<i>1-4 credits</i>
Prerequisites: 602, 612 or its equivalent. Corequisites: 620, 622 or permission of instructor. Intensive clinical residency to enhance competencies in primary care of adults/elders. Emphasis on positive health behavior outcomes and complex primary health care problems.		
627	AD/GER HEALTH NURS NP I PRACT	<i>2 credits</i>
Prerequisite: admission to the Adult/Gerontological Nurse Practitioner Program or Post-MSN certificate program; prerequisite or corequisite: 610; corequisite: 620 or its equivalent for Post MSN. Practicum with emphasis on comprehensive assessment, health promotion, and risk reduction of the adult/older adult.		
628	ADULT/GERONTOL NP II PRACTICUM	<i>2 credits</i>
Prerequisites: admission to Adult/Gerontological NP track or Post-MSN certificate program, 620 or its equivalent to Post-MSN, 627; corequisites: 621 or its equivalent for the Post-MSN, 690. Practicum with emphasis on health appraisal/risk reduction and common, uncomplicated acute or chronic illness states of the adult/older adult/families.		
629	AD/GER HLTH NURS NP III PRACT	<i>2 credits</i>
Prerequisites: 628, 690. Corequisite: 692. Practicum with emphasis on complex chronic illness states and Comorbidities of the adult/older adult.		
630	RESOURCE MGMT NURSING SETTINGS	<i>3 credits</i>
Prerequisite: Admission to Graduate Program or permission of instructor. Examines management of fiscal and human resources in nursing service settings; analyzes impact of economics and labor relations on health and nursing care.		
631	ADULT/GERO HLTH NRS NP IV PRAC	<i>3 credits</i>
Prerequisites: Admission to the Adult/Gerontological Nurse Practitioner track or Post-Master's certificate program, 622, 629, 692. Corequisites: 624, 694. Synthesis of Adult/Gerontological Nurse Practitioner content. Emphasis on implementation and evaluation of program interventions. Practicum emphasizes severe acute and chronic illness states.		
632	FISCAL MGMT FOR NURSING ADMN	<i>3 credits</i>
Prerequisite: Admission to Graduate Program or permission of instructor. Examines management of fiscal resources in nursing service settings.		
633	LEADERSHIP IN NURSING ORG I	<i>3 credits</i>

Prerequisites or corequisites: 630, 632, 635. Leadership and management theories are utilized to guide practice in the role of nurse administrator.

634	LEADERSHIP IN NURSING ORG II	<i>3 credits</i>
Prerequisites: 633, 638. Leadership and management theories are utilized to guide study of the role of nurse administrator.		
635	ORGZTNL BEHAV NURSING SETTINGS	<i>3 credits</i>
Prerequisites: Admission to Graduate Program or permission of instructor. Examines organizational behavior theories/principles related to systems analysis and assessment of organizational structure in nursing settings.		
636	ADULT/GER HLTH NURS CNS RSDNCY	<i>2-4 credits</i>
Prerequisite: 673, 679. This clinical residency focuses on components of influencing change, systems thinking, leadership within a multidisciplinary collaborative environment using outcome measurement and evaluation.		
637	NURSE ANESTHESIA RESIDENCY I	<i>4 credits</i>
Prerequisites: 644, 645. This course introduces the second year student to the art and science of both obstetrical and pediatric anesthesia related theory, research, and practice.		
638	PRACT: NURSING ADMINISTRATN I	<i>2 credits</i>
Prerequisites: Admission to Graduate Program or permission of instructor. Corequisite: 633. Leadership and management theories are utilized to guide practice in the role of nurse administrator.		
639	PRACT: NURSING ADMINISTRATN II	<i>2 credits</i>
Prerequisite: 633, 638. Corequisite: 634. Leadership and management theories are utilized to guide study of the role of nurse administrator.		
640	SCIENTF CMPNT NURSE ANESTHESIA	<i>3 credits</i>
Prerequisite: admission into the Nurse Anesthesia program. The course presents content dealing with the chemical and physical components of anesthesia agents.		
641	PHARMACLGY NURSE ANESTHESIA I	<i>3 credits</i>
Prerequisite: 640. The study of intravenous induction agents, injectable analgesics and inhaled anesthetics commonly used in the administration of general anesthesia. Includes use of muscle relaxants.		
642	INTRODUCTION NURSE ANESTHESIA	<i>2 credits</i>
Prerequisite: admission into the Nurse Anesthesia program. This course provides a general overview of anesthetic concepts and prepares students for their in-hospital residency. The course includes a lecture component and selected laboratory experiences.		
643	PRINCIPLES OF ANESTHESIA I	<i>4 credits</i>
Prerequisite: 640. This course focuses on the acquisition of basic skills related to nursing anesthesia care and administration of anesthesia agents, with a focus on equipment.		
644	PHRMCLGY NURSE ANSTHSA II	<i>3 credits</i>
Prerequisite: 641. Focuses on mechanisms of drug transport within the human body for inhaled and injected medications. The effects of accessory drugs are also discussed.		
645	PRINCIPLES OF ANESTHESIA II	<i>4 credits</i>
Prerequisite: 643. Emphasis on pre-operative anesthesia care including induction techniques. Discusses airway management, fluid therapy, and ventilator use.		
646	NURSE ANESTHESIA RESIDENCY II	<i>4 credits</i>
Prerequisite: 637. Concentration on the theoretical basis for specific nursing interventions and the rationale for their use in thoracic anesthesia, cardiac anesthesia, vascular anesthesia, and neurosurgical anesthesia management.		
647	PROFESSIONAL ROLE SEMINAR	<i>2 credits</i>
Prerequisites: 644, 645. Discusses issues, concepts and theories related to the professional role of nurse anesthetists. Focuses on leadership/management content as well as professional ethical issues.		
648	NURSE ANESTHESIA RESIDENCY III	<i>4 credits</i>
Prerequisite: 646. Focuses on the understanding of physiologic and pathophysiologic principles of particular organ systems and the relevant implication that govern anesthetic management.		
649	NURSE ANESTHESIA RESIDENCY IV	<i>4 credits</i>
Prerequisite: 648. Comprehensive review of basic and advanced anesthetic concepts important to the entry-level nurse anesthetist.		
650	ADV PEDTRC/ADLSNT ASSMNT	<i>3 credits</i>
Prerequisites: acceptance to Child and Adolescent Health Nursing track or permission of faculty and 608; corequisite: 651. Advanced pediatric/adolescent assessment and clinical reasoning for primary health care nursing with introduction to differential diagnosis and clinical management.		
651	CHLD & ADLSNT HLTH NRSNG I	<i>3 credits</i>
Primary health care nursing to enhance positive health behavior outcomes of well children/adolescents and those with minor health disruptions and problems in family/community contexts.		
652	CHILD & ADOL HLTH NRSG I PRACT	<i>2 credits</i>
Prerequisite: Admission into Child and Adolescent Health Nursing NP track or Post-MSN Child and Adolescent Health NP program. Clinical practicum course emphasizing primary health care nursing to enhance positive health behavior outcomes of well children/adolescents and those with minor health disruption/problems in family/community contexts.		
653	CHILD & ADOL HLH NRSG II PRACT	<i>2 credits</i>

Prerequisite: 651. Clinical practicum course emphasizing primary health care nursing to enhance positive health behavior outcomes of children, adolescents with acute and/or chronic health disruption in family/community contexts.

654	CHILD & ADOL HLH NRG III PRACT	<i>2 credits</i>
Prerequisite: 655. Clinical practicum course emphasis on advanced practice in primary health care using consultation and program development, marketing related to development and health behavior outcomes of children, adolescents and families.		
655	CHLD & ADLSNT HLTH NRSNG II	<i>3 credits</i>
Emphasis on primary health care nursing to enhance positive health behavior outcomes of children/adolescents with acute and/or chronic health disruptions in family/community contexts.		
656	PHRMCLGY CHLD & ADLSNT HLTH NR	<i>3 credits</i>
Prerequisite: Admission to Graduate Program. Emphasis on major categories of pharmacological agents, that influence developmental outcomes of children/adolescents in ambulatory, acute and chronic care environments.		
657	CHLD & ADLSNT HLTH NRSNG III	<i>3 credits</i>
Emphasis on advanced practice in primary health care using consultation and program development/marketing related to developmental and health behavior outcomes of children/adolescents and families.		
658	CHLD & ADLSCNT HLTH NP RESDNCY	<i>1-4 credits</i>
Prerequisites/corequisites: Post-MSN CAH certification program students--651 and 655 or MSN CAH students: 655 and 657. Opportunity for the advanced graduate nursing practitioner in Child and Adolescent Health.		
659	CHLD & ADLSN HLTH NRSNG IV PRAC	<i>2 credits</i>
Prerequisite: 657. Clinical practicum empasizing integration of knowledge and skills with specific populations of vulnerable children/adolescents and their families. Emphasis on implementation of programmatic interventions and evaluation.		
660	PSYCH MENTAL HLTH, APN I PRACT	<i>2 credits</i>
Prerequisite: 608; corequisite: 661. Development of clinical competencies and therapeutic techniques in the delivery of behavioral health care to individuals.		
661	PSYCHIATRIC MENTAL HLTH, APN I	<i>3 credits</i>
Prerequisites: admission to Behavioral Health track, 608; corequisite: 660. Focuses on the theories, concepts, and techniques utilized in the delivery of behavioral health care to individuals. Theoretical frameworks for direct intervention are examined.		
662	CLINICAL PSYCHOPHARMACOLOGY	<i>3 credits</i>
Prerequisite: 608 or permission of instructor; corequisite: 612. Examines principles of neuroscience, pharmacology and therapeutics for psychopharmacologic agents used to manage adult mental health problems in variety of treatment settings.		
663	PSYCH MENTAL HLTH APN INTRNSHP	<i>1-4 credits</i>
Prerequisites: 661, 665. Focuses on behavioral health interventions with families and groups. Theoretical frameworks for direct intervention are examined.		
664	PSYCH MTL HTH-ACUTE APN II PRA	<i>2 credits</i>
Prerequisites: 610, 660, 661; corequisite: 665. Development of clinical competencies in direct intervention therapies with families/groups experiencing the stress of actual or potential health problems.		
665	PSYCH MNTL HLTH-ACUTE, APN II	<i>3 credits</i>
Prerequisites: 610, 660, 661; corequisite: 664. Focuses on advanced practice behavioral health nursng with families/groups experiencing the stress of actual or potential health problems. Theoretical frameworks for direct intervention are examined.		
666	PSYCH MNTL HLTH POST MSN RES	<i>1-4 credits</i>
Prerequisites: 662, 665; Corequisites: 665, 667. This clinical residency focuses on influencing leadership within a multidisciplinary collaborative environment in complex health systems providing individuals/clients, families and groups with psychiatric mental health care.		
667	PSCYH MNTL HLTH-CHRON, APN III	<i>3 credits</i>
Prerequisites: 664, 665; corequisite: 668. Focuses on consultation, collaboration, and program development in behavioral health nursing. Frameworks for practice in psychiatric and non-psychiatric settings are discussed.		
668	PSYCH MTL HTH-CHRN APNIII PRAC	<i>2 credits</i>
Prerequisites: 664, 665; corequisite: 667. Development of clinical competencies in consultation, collaboration, and program development in behavioral health nursing practice. Practice is in psychiatric and non-psychiatric settings.		
669	PSYCH MTL NRSNG-SYN APN IV PRAC	<i>2 credits</i>
Prerequisites: 667, 668. Integration of knowledge and skill related to behavioral health nursing: emphasizes integration of advanced practice nursing roles and implementation and evaluation of a programmatic intervention.		
670	PSYCH MENTAL HLTH-SYNTH APN IV	<i>3 credits</i>
Prerequisites: 667, 668; Corequisite: 669. Students choose clinical settings to develop expertise in providing care to selected populations and to advance career goals.		
671	ADULT/GERON HLTH NRSNG CNS I	<i>2 credits</i>
Prerequisites: admission to Adult/Gerontological CNS track or permission of instructor, 608; prerequisite/corequisite: 610; corequisite: 674. Research and theory integral to advanced practice nursing of adults/older adults/families with selected common health problems. Emphasis is on comprehensive assessment, health promotion, and risk reduction.		
672	INDP STUDY: NURSING	<i>1-4 credits</i>

Opportunity for advanced graduate nursing practice in a selected area of specialization.

673	ADULT/GERON HLTH NRSG CNS IV	<i>1 credits</i>
Prerequisites: 677, 678 or permission of instructor; corequisite: 679. Integration of knowledge and skills for a population of adults/older adults with emphasis on problems of increasing complexity. Issues integral to APN practice are addressed.		
674	AD/GER HLTH NRSG CNS I PRACT	<i>2 credits</i>
Prerequisite: admission to Adult / Gerontological CNS track; prerequisite/ corequisite: 610; corequisite: 671. Development of clinical competencies integral to advanced practice nursing of adults/older adults/families with selected common health problems with focus on comprehensive assessment, health promotion and risk reduction.		
675	ADULT/GER HLTH NRSG CNS II	<i>2 credits</i>
Prerequisites: 671, 674; prerequisite/corequisite: 612; corequisite: 676. Focuses on problems common to acute illness in adults/older adults in acute/episodic care settings. Multidisciplinary care planning and coordination are emphasized, including transition to community-based care.		
676	AD/GER HLTH NRSG CNS II PRACT	<i>2 credits</i>
Prerequisites: 671, 674; prerequisite/corequisite: 612; corequisite: 675. Development of clinical competencies in care of adults/older adults with acute illness in acute/episodic care settings emphasizing multidisciplinary care planning and coordination and transition to community-based care.		
677	ADULT/GER HLTH NRSG CNS III	<i>2 credits</i>
Prerequisites: 612, 675, 676; Corequisite: 678. Focuses on nursing care of middle aged/older adults and their families experiencing chronic illness. Emphasizes management of problems common to chronic care and rehabilitation.		
678	AD/GER HLTH NRSG CNS III PRACT	<i>2 credits</i>
Prerequisites: 612, 675, 676; corequisite: 677. Development of clinical competencies in care of middle aged/ older adults and their families experiencing chronic illness with emphasis on management of problems common to chronic care and rehabilitation.		
679	AD/GER HLTH NRSG CNS IV PRACT	<i>3 credits</i>
Prerequisites: admission to Adult/Gerontological Health Nursing Clinical Nurse Specialist track, 677 or permission of instructor, 678; corequisite: 673. Integration of knowledge and skills with a specified population of adults and their families. Emphasis on implementation of programmatic interventions and evaluation.		
680	CHILD & ADOL HLTH NURSING IV	<i>3 credits</i>
Prerequisite: 657. Integration of evidenced based knowledge and skills related to programmatic interventions and evaluation in primary health care nursing with a specified population of vulnerable children/adolescents and their families.		
681	INSTRUCT METHODS IN NURSING ED	<i>3 credits</i>
Prerequisites: admission to the Advanced Role Preparation in Nursing Education certificate program. Study of a variety of instruction methods used in nursing education. Includes teaching and learning methods used in classroom, laboratory, and clinical settings.		
682	NURSING CURRICULUM DEVELOPMENT	<i>3 credits</i>
Prerequisite: admission to the Advanced Role Preparation in Nursing Education certificate program or permission of instructor. Examines curriculum development with a focus on teaching-learning strategies. Emphasis is on process of developing a curriculum.		
683	EVALUATION IN NURSNG EDUCATION	<i>3 credits</i>
Prerequisites: admission to the Advanced Role Preparation in Nursing Education certificate program or permission of instructor. Application of principles of evaluation and measurement to situations in nursing education. Emphasizes evaluation as a process. Includes evaluation of teacher, learner and program.		
684	PRACT: ACAD ROLE NURSE EDUCATR	<i>3 credits</i>
Prerequisites: 681,682, 683. Precepted study and practice in the role of a nurse educator. Each student presents lecture content and provides clinical supervision to a group of students.		
685	CHILD & ADOL HLTH - ACIII	<i>3 credits</i>
Prerequisites: 653 and 655. Advanced practice in acute/critical intensive care areas with children with complex acute/critical/chronic conditions, responding to rapidly changing clinical conditions, recognizing/ managing emerging crises, organ dysfunction and failure.		
686	CHILD & ADOL HLTH - ACIII PRAC	<i>2 credits</i>
Prerequisites: 653 and 655. Clinical practicum emphasizing advanced practice in acute/critical intensive areas with children with complex acute/critical/chronic conditions, responding to rapidly changing conditions, recognizing/ managing emerging crises, organ dysfunction and failure.		
687	CHILD & ADOL HLTH - ACIV	<i>3 credits</i>
Prerequisites: 685, 686. Integration of knowledge/skills in acute care with children with complex, acute/critical/ chronic conditions. Emphasis on stabilization, minimizing complications, providing physical/psychological care to restore maximal health potential and reduce health risks.		
688	CHILD & ADOL HLTH - ACIV PRAC	<i>2 credits</i>
Clinical practicum to integrate knowledge/skills in acute care with children with complex/acute/critical/chronic conditions. Emphasis on stabilization strategies to minimize complications, providing physical/psychological care, restoring maximal health to reduce health risks.		
690	CLINICAL MANAGEMENT I	<i>3 credits</i>

Prerequisites: admission to the Adult/Gerontological Nursing Practitioner track or the Post-MSN Adult/Gerontological NP certificate program, 620 or its equivalent for the Post-MSN, 627; corequisites: 621, 628. Clinical Management of common chronic and acute problems of adults in primary health care settings. Focus on episodic management using differential diagnosis and clinical reasoning.

691	ACUTE CARE NURS PRACTITIONER I	<i>4 credits</i>
Prerequisites: 608, 610, 612. Focuses on common chronic and acute problems of adults in primary/tertiary health care settings. Emphasis on health promotion and risk assessment.		
692	CLINICAL MANAGEMENT II	<i>3 credits</i>
Prerequisites: 621 or its equivalent for the Post-MSN, 628; corequisites: 622, 629. Clinical Management of complex, chronic health problems of adults in primary health care settings. Focus on long term management using differential diagnosis and clinical reasoning.		
693	ACUTE CARE NRS PRACTITIONER II	<i>4 credits</i>
Prerequisite: 691; corequisite: 692. Focus is on advanced nursing interventions related to system specific health care problems of adults in tertiary care settings.		
694	CLINICAL MANAGEMENT III	<i>3 credits</i>
Prerequisites: 622 or its equivalent for Post-MSN, 629; corequisites: 623, 624. Clinical Management of complex health problems of adults/older adults using consultation, collaboration, and referral in selected primary health care settings.		
695	ACUTE CARE NURS PRACTITNER III	<i>4 credits</i>
Prerequisite: 693; corequisite: 696. Focus of the course is on nursing management of patients with complex health care problems.		
696	CLINICAL REASONING	<i>1 credits</i>
Prerequisite: 693; corequisite: 695. Focus is on integration of abnormal laboratory, radiologic and morphologic findings as they relate to advanced nursing care of the acutely ill individual.		
699	MASTERS THESIS	<i>1-6 credits</i>
Prerequisite: 613. Supervised research in a specific area of advanced nursing.		
700	INFO MGMT IN HEALTH CARE	<i>3 credits</i>
Prerequisites: Doctoral standing or special approval from the college. This course focuses on nursing informatics to support clinical decision making in advanced nursing practice.		
701	ADV SEM: CLIN GENOMICS & HLTH	<i>3 credits</i>
Prerequisites: Admission to the DNP 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, therapies, and counseling in area of interest.		
705	CLINICAL NURSE SCHOLAR I	<i>3 credits</i>
Prerequisites: 603 and doctoral standing or approval from the college of nursing graduate program. Transition to clinical scholar leader role with emphasis on epistemology guiding advanced practice. Integration of theory and evidenced-based practice principles to achieve health outcomes.		
706	CLINICAL NURSE SCHOLAR II	<i>4 credits</i>
Prerequisites: 700, 705. Translation and integration of theory and scientific evidence guiding clinical practice using culturally sensitive approaches to design innovative interventions.		
707	CLINICAL SCHOLAR RESIDENCY	<i>3 credits</i>
Prerequisites: 706. Synthesis of components of clinical scholar leader role comprises residency. Advanced leadership and clinical scholarship skills used to develop and evaluate approaches to healthcare problems.		
708	DNP CAPSTONE PROJECT I	<i>2-6 credits</i>
Prerequisite: 705. Corequisite: 706. Faculty-preceptor-directed project that will contribute to nursing practice knowledge. Includes oral defense and publishable manuscript. May register for 2 to 6 hours.		
709	DNP CAPSTONE PROJECT II	<i>1-3 credits</i>
Prerequisite: 708. Capstone project students must continue registration until all degree requirements and a publishable manuscript are met.		
800	DOCTORAL DISSERTATION II	<i>1 credits</i>
Prerequisite: 899 and permission of the dissertation chairperson. Continuing enrollment to complete the doctoral dissertation research.		
810	HSTRY & PHILOS OF NRSG SCIENCE	<i>3 credits</i>
Prerequisite: Admission to the Ph.D. Program or permission of the professor. Examines the nature of metaphysics and epistemology and the influence of contemporary Eastern and Western philosophies on the developing epistemology of disciplinary nursing knowledge. (KSU 70710)		
815	THEORY CNSTR & DVLP IN NURSING	<i>3 credits</i>
Prerequisites: Admission to the Ph.D. Program and 810. Examines strategies for theory development including logical-empirical-deductive and inductive approaches. Emphasis will be on elements and strategies used in theory building. (KSU 70715)		
820	INTRO NRSG KNOWLEDGE DOMAINS	<i>3 credits</i>
Prerequisites: 810, 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	FOUND OF SCHOLARLY INQ IN NRSG	<i>3 credits</i>

Prerequisites: Admission to the Doctoral Program, 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	<i>3 credits</i>
Prerequisite: Admission to the Ph.D. Program or permission of the professor. An integrated approach to study of quantitative nursing research. Exploration of the interdependent relationship of methodology, design/measurement issues, including analysis and interpretation of findings. (KSU 70725)		
827	ADV HEALTHCARE STATISTICS I	<i>3 credits</i>
Prerequisite: Admission to the Ph.D. Program or permission of the professor; pre- or corequisite: 825. In-depth examination of descriptive statistics, correlation, regression, multiple regression sets, scaling, nonlinear transformation, missing data, and interactive effects; include initial manipulation of data, integrating understanding of inference and probability.		
830	QUALITATIVE RESEARCH METHODS	<i>3 credits</i>
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; evaluation of rigor; and ethical issues for major qualitative methods will be analyzed with regard to nursing phenomena. (KSU 70730)		
835	NURSING & HEALTH CARE POLICY	<i>3 credits</i>
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 issues, the political and legislative process, and contemporary policy dilemmas. (KSU 70735)		
836	ADV INTRDS LDRSHP FOR HLTH SCI	<i>4 credits</i>
Prerequisite: Admission to the PhD program or permission of instructor. Seminar on advanced leadership in healthcare and the health sciences to assist students to become leaders within practice, academe, and the community.		
837	ADV HEALTHCARE STATISTICS II	<i>3 credits</i>
Prerequisite: 827 and admission to the Ph.D. Program or permission of instructor. This course synthesizes and applies knowledge of advanced multivariate and statistical techniques commonly used in healthcare and nursing research.		
840	NURSING SCIENCE SEMINAR I	<i>3 credits</i>
Prerequisite: 820. 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. (KSU 86091, 86191, 86291, 86391)		
846	AMNR: MEASUREMENT IN NURS RESEARCH	<i>3 credits</i>
Prerequisite: 820. Theories and concepts related to measurement and nursing research including techniques for construction, testing, and refining of instruments with assessment of reliability and validity.		
847	AMNR: APPL OF QUALITATIVE METHODS	<i>3 credits</i>
Prerequisite: 820. Achieve an in-depth understanding of one qualitative research approach (chosen by the student according to his/her research plans), including associated philosophical foundations, key concepts, typical methods, and evaluative criteria.		
848	AMNR: PROGRAM EVAL IN NURSING	<i>3 credits</i>
Prerequisite: 820. Seminar and lecture: analysis of theories and models of program evaluation and their relationships to designs, processes, techniques, and outcomes in nursing-related evaluations.		
849	AMNR: GRANT DEVELOPMENT & FUNDING	<i>3 credits</i>
Prerequisite: 820. 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.		
850	NURSING SCIENCE SEMINAR II	<i>3 credits</i>
Prerequisite: 820, 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. (KSU 87091)		
883	EVALUATION OF NURSING EDUC	<i>3 credits</i>
Application of evaluation and measurement principles to nursing education. Emphasis on evaluation as both process and outcome. Includes evaluation of program, curriculum, course, and learner.		
884	PRACT: ACAD ROLE OF NURSE EDUC	<i>3 credits</i>
Prerequisites: 881, 882, 883. 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.		
892	FIELD EXPERIENCE IN NURSING	<i>1-12 credits</i>
Prerequisite: Admission to the Ph.D. program or permission of instructor. Individual enrollment in field experience, practicum, or internship settings related to nursing.		
895	SPECIAL TOPICS IN NURSING	<i>2-6 credits</i>
Study of important topics in nursing practice, research, or the profession. Offering in response to existing interests and opportunities. Topics will be announced when scheduled.		
896	INDIV INVESTIGATION IN NURSING	<i>1-3 credits</i>
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.		
898	RESEARCH IN NURSING	<i>1-15 credits</i>
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.		
899	DOCTORAL DISSERTATION	<i>1-15 credits</i>

Prerequisite: Advancement to candidacy. (May be repeated.) Independent dissertation research under the guidance of a faculty chairperson and a dissertation committee. (KSU 80199)



Master of Public Health (8300)

601	PUBLIC HEALTH CONCEPTS	<i>3 credits</i>
Prerequisite: Admission to the MPH program. Organizational structure, history, law, ethics, essential services, global problems, and future of public health.		
602	SOCIAL & BEHAV SCI IN PUB HLTH	<i>3 credits</i>
Prerequisite: Admission 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.		
603	EPIDEMIOLOGY IN PUBLIC HEALTH	<i>3 credits</i>
Prerequisite: 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.		
604	BIOSTATISTICS IN PUBLIC HEALTH	<i>3 credits</i>
Prerequisite: Admission to the MPH program. Biostatistics basics, statistical inference, central tendency tests, analysis of variance, regression analysis, survival analysis, and applications in public health. Epi Info and JMP statistical packages.		
605	HEALTH SERV ADMN IN PUB HEALTH	<i>3 credits</i>
Prerequisite: Admission to the MPH program. Management principles, planning and evaluation, grant-writing, economics, policy, data sources, and applications to public health.		
606	ENV HEALTH SCIENCE IN PUB HLTH	<i>3 credits</i>
Prerequisite: Admission to the MPH program. Air/water quality, food hygiene, sanitation, solid waste management, hazardous materials management, vector-borne disease, occupational health, legal issues, environmental hazard identification and response.		
608	PUBLIC HEALTH PRAC & ISSUES	<i>3 credits</i>
Prerequisite: 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 online practice-based course.		
610	GRANT WRIT IN PUBLIC HLTH PRACT	<i>3 credits</i>
Prerequisite: admission to the MPH Program. Methods and techniques for writing grant proposals to fund public health programs and operations.		
680	ST: PUBLIC HEALTH	<i>1-5 credits</i>
Special topic sections will focus on specific topics of current interest in public health.		
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682	ST: PUBLIC HEALTH	<i>1-5 credits</i>
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689	ST: PUBLIC HEALTH	<i>1-5 credits</i>
Special topic sections will focus on specific topics of current interest in public health.		
695	INDEPENDENT STDY:PUBLIC HEALTH	<i>1-3 credits</i>
Prerequisite: permission of academic advisor and instructor. Includes research or other individual projects designed jointly by student and instructor. Covers topics not available in electives listing. (May only be taken for a maximum of 3 credits).		
696	PRACT: MASTERS PUBLIC HEALTH	<i>1-3 credits</i>

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.

697	CAPSTONE PROJECT	<i>3-6 credits</i>
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A required culminating experience for MPH students to be taken after all core courses are completed. In partnership with a community organization/agency.

698	CAPSTONE PROJECT I	<i>3 credits</i>
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Prerequisite: 601, 602, 603 and 604. In depth assessment of public health competencies and preparation for the culminating community experience in Capstone II.

699	CAPSTONE PROJECT II	<i>3 credits</i>
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Prerequisite: 601, 602, 603, 604, 605, 606 and 698. A required culminating experience for MPH students completed in partnership with a community organization/agency.



The University of Akron
Undergraduate Bulletin

College of Polymer Science and Polymer Engineering

- [Polymer Science and Polymer Engineering \(9821\)](#)
- [Polymer Engineering \(9841\)](#)
- [Polymer Science \(9871\)](#)



Polymer Science and Polymer Engineering (9821)

281	POLYMER SCIENCE FOR ENGINEERS	<i>2 credits</i>
Prerequisites: 3150:151 and 152. Chemical bonds and structure of organic molecules, polymer chain structure, amorphous and crystalline morphology and structural characterization, polymerization and copolymerization, experimental demonstrations, typical solid-state and flow properties.		
381	POLYM MORPHOLOGY FOR ENGINEERS	<i>3 credits</i>
Prerequisites: 281, 3150:151, 3650:292. Fundamental understanding of solid structure, crystallography and morphology, processed polymers, co-polymers and their blends.		



Polymer Engineering (9841)

321	POLYMER FLUID MECHANICS	<i>3 credits</i>
Prerequisite: 4600:310 or equivalent. Rheological properties and flow characteristics of polymer fluid systems; non-Newtonian viscosity, viscoelasticity.		
422	POLYMER PROCESSING	<i>3 credits</i>
Prerequisites: 321 and 4600:315 or equivalent. Polymer processing technology. Basic studies of flow in extrusion, molding, and other processing methods.		
425	INTRO BLENDING & COMPND POLYM	<i>3 credits</i>
Prerequisites: 4200:321 or 4600:310 or permission. Nature of polymer blends and compounds and their applications. Preparation and technology using batch and continuous mixers, mixing mechanisms.		
427	MOLD DESIGN	<i>3 credits</i>
Prerequisites: 4200:321 or 4600:310 or permission. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.		
450	ENGNRG PROPERTIES OF POLYMERS	<i>3 credits</i>
Prerequisites: 4600:336 or permission. Introduction to engineering properties and polymer processing. Analyzing mechanical polymer tests in glassy, rubbery, and fluid states. Product design, rheology, rheometry and polymer processing concepts.		
451	POLYMER ENGINEERING LABORATORY	<i>2 credits</i>
Prerequisite: 4200: 321. Corequisite: 422. Laboratory experiments on the rheological characterization of polymer melts, fabrication of engineering products, structural investigation of polymeric parts.		
497	HONORS PROJECT	<i>2 credits</i>
Prerequisite: Senior standing in the Honors Program. Individual creative project in mechanical polymer engineering, supervised by faculty member of the department. This course must be designed oriented if used in place of 4700:499.		
499	POLYMER ENGR DESIGN PROJECT	<i>2 credits</i>
Corequisite: 4600:400 or permission of instructor. Analysis and design of mechanical polymer systems.		
525	INTRO TO BLDNG & COMPND POLYM	<i>3 credits</i>
Prerequisite: Permission of instructor. Nature of polymer blends and compounds and their applications. Preparation and technology using batch and continuous mixers. Mixing Mechanisms.		
527	MOLD DESIGN	<i>3 credits</i>
Prerequisite: permission of instructor. Molding methods to manufacture polymeric products. Machinery, materials, molds, equipment, computer-aided design.		
550	ENGR PROPERTIES OF POLYMERS	<i>3 credits</i>
Prerequisite: permission of instructor. Introduction to engineering properties and polymer processing. Analyzing mechanical polymer tests in glassy, rubbery, and fluid states. Product design, rheology, rheometry, and polymer processing concepts.		
551	POLYMER ENGINEERING LABORATORY	<i>3 credits</i>
Prerequisite: permission of instructor. Laboratory experiments on the rheological characterization of polymer melts, fabrication of engineering products, structural investigation of polymeric parts.		
601	SEM: POLYMER ENGINEERING	<i>1 credits</i>
Presentations of recent research on topics in polymer engineering by internal and external speakers.		
611	STR CHAR POLY W/ ELECTRMAG RAD	<i>2 credits</i>
Characterization of orientation, morphology, superstructure in polymers using x-ray, light scattering, birefringence, dichroism. Crystal-lography, unit cell determination.		
621	RHEOLOGY OF POLYMER FLUIDS	<i>3 credits</i>
Experimental methods of determination of rheological properties of polymer melts, solutions, elastomers. Structure-flow behavior relationships, viscoelastic fluid theory, application to extrusion, fiber, film processing molding. Structure development in processing.		
622	ANALY&DSGN: POLY PROC OPRNS I	<i>3 credits</i>
Prerequisite: 621. Mathematical modeling and engineering design analysis of polymer processing operations including extruder screws, injection molds, dies, fibers, film formation.		
623	ANALY&DSG: POLY PROC OPRNS II	<i>3 credits</i>
Prerequisite: permission of instructor. Basic studies on non-isothermal phenomena in polymer engineering emphasizing crystallization, vitrification, frozen-in orientation and residual stresses, applications, including fiber spinning and film extrusion.		
631	ENGR PROPRTS OF SOLID POLYMERS	<i>2 credits</i>

Transitions as a function of polymer structure, optical characteristics, mechanical including ultimate properties, viscoelastic behavior of elastomers and plastics, large strain behavior E emphasis on experimental methods.

641	POLYMERIC MATRLS ENGR SCIENCES	<i>2 credits</i>
Physioco-chemical properties of amorphous and crystalline polymers. Glass transitions, crystallization, molecular orientation and morphology of important commercial polymers, fabricated products and composite materials.		
650	BASIC ENGR FOR POLYMR ENGINEER	<i>3 credits</i>
Basic concepts of polymer engineering taught in lecture-laboratory format intended for orientation of new graduate students.		
651	POLYMER ENGINEERING LABORATORY	<i>3 credits</i>
Rheological characterization of polymer melts, rubber and plastic extrusion, extrudate swell, injection and compression molding, crystallization behavior, x-ray diffraction, film blowing, impact and tensile testing.		
661	POLYMERIZATION REACTOR ENGR	<i>3 credits</i>
Polymerization kinetics, classical reactor design, comparison of polymerization in batch and continuous stirred tank reactors, flow patterns around agitators, tubular reactors, reactor stability.		
675	CARBON-POLYMER NANOTECHNOLOGY	<i>3 credits</i>
Prerequisite: permission of instructor. This course focuses on the fundamental aspects of nanotechnology in general and basic knowledge of polymer/carbon nanoscience and nanotechnology in particular.		
680	POLYMER COATINGS	<i>3 credits</i>
Prerequisite: permission of instructor. This course is an introduction to coating science. The synthesis of polymeric binders and pigments used in commodity coatings will be the focus of the first part of the course. The second part of the course will focus on coatings formulation and end-use applications for commodity coatings.		
699	MASTERS THESIS	<i>1-6 credits</i>
(May be repeated) Supervised original research in specific area of polymer engineering.		
712	RHEO-OPTICS OF POLYMERS	<i>2 credits</i>
Applications of rheo-optical methods as means of determining stress fields in polymeric glasses and fluids during deformation, rheo-optical properties of polymers in glassy, rubbery and fluid states. Theory of dynamic birefringence and its application to mechanical relaxations of amorphous and semi-crystalline polymers, and recent experimental results.		
715	ADV CHAR OF FUNCTIONAL POLYMER	<i>3 credits</i>
Prerequisites: 611, 623 or equivalent (with permission of instructor). This course will focus on the advanced structural and functional property characterization techniques including optical, electrical, magnetic and others. A particular focus will be the influence of the history of polymer processing on these properties.		
720	MOLECLR ASPCT OF POLY RHEOLOGY	<i>2 credits</i>
Prerequisite: 621 or permission of instructor. Molecular theory for concentrated solutions and melts of flexible homopolymers, molecular rheology of miscible polymer blends, block copolymers, and liquid crystalline polymers.		
721	RHEOL & PROC 2-PHASE POLYM SYS	<i>2 credits</i>
Prerequisite: 622 or equivalent. Particle-particle interactions, mixing devices and design, theoretical hydrodynamics of suspensions of rigid particles, experimental studies of rheological behavior, phenomenological theories representing suspension behavior, dispersion of droplets to form an emulsion, phase morphology development and rheological properties of blends.		
722	ADV MODELLING POLYMER PROCNG	<i>2 credits</i>
Prerequisite: permission of instructor. Modelling of processing operations including extrusion molding, fiber and film processing, computer-aided design.		
723	RHEOLOGY & PROC OF ELASTOMERS	<i>2 credits</i>
Interpretation of rheological properties and critical study and analysis of processing operations including behavior in internal mixers, screw extruders, die systems and vulcanization molding.		
724	ADV EXTRUSION & COMPOUNDING	<i>2 credits</i>
Principles of operation and flow in single and twin screw extruders, screw design, characteristics of internal mixers, analysis and simulation of flow.		
725	CHEM & PROC OF THERMOSETS	<i>2 credits</i>
Prerequisites: 621 or 622, or permission of instructor. Rheological behavior of thermosets, vulcanization of rubbers, time-temperature-transition relationships in thermosets, reaction injection molding, compression/transfer molding, pultrusion.		
727	ADVANCED POLYMER RHEOLOGY	<i>2 credits</i>
Prerequisite: 621 or equivalent. Second level course in non-linear constitutive equation for viscoelastic, viscoplastic, viscoelastic-plastic polymeric materials. Utility and applicability to polymer processing problems.		
728	NUMERCL METHODS IN POLYMR ENGR	<i>3 credits</i>
Prerequisites: 621, 622,623, 631. Basics of generally accepted numerical methods. Numerical problems in polymer solid mechanics and technological applications. Numerical problems in polymer fluid mechanics and polymer processing. Commercial softwares.		
731	STRESS ONLY - POLYMERS & COMPO	<i>2 credits</i>
Prerequisite: 631. The design of rubber mounts, bearings and sandwich components with demonstration of finite element methods. Classical plates and shells theories with applications to composite structures.		
745	LIQUID CRYSTALS	<i>2 credits</i>

Prerequisite: permission of instructor. Structure of low molecular weight and polymeric liquid crystals, characterization, physical properties including optical properties, phase transitions, structure-property relationships, processing of polymeric species.

747 POLYMER COLLOIDS 3 credits

Prerequisite: permission of instructor. Colloidal dispersions, phase stability, aggregation structures, thermodynamics, kinetics of phase transitions in polymer colloids. Emulsion and solution polymerization, organic/inorganic hybrid materials, coating technology. Rheology of colloidal polymers.

749 PHASE TRANS-POLYMER BLND&ALLY 3 credits

Prerequisite: permission of instructor. Elucidating thermodynamics of polymer blends, block copolymers, crystalline/liquid crystalline polymers, and kinetics of phase transitions. Structure development and modeling of reactive polymer blends.

761 INJECT & COMPRESS MOLD FUNDMNT 2 credits

Prerequisite: permission of instructor. This course provides fundamental knowledge in physical, thermal and rheological properties required for injection and compression molding including theoretical and experimental aspects of various molding processes.

770 POLYMER NANOCOMPOSITES 3 credits

Prerequisite: permission of instructor. Develops understanding on synthesis, characterization, processing and properties of polymer nanocomposite materials involving nanoscale fillers in conjunction with thermosetting, thermoplastic, and elastomeric polymer matrices.

773 ADV POLYMER COATING TECHNOLOGY 2 credits

Prerequisites: 641, or equivalent, or permission of instructor. The polymeric binders used in radiation-curable coatings for electronic packaging and waterborne coatings will be stressed. The chemistry of dyes and the coatings science of pigments will be presented. The chemistry of polymer degradation will also be covered.

777 MODELING OF NANOSCALE MATERIAL 3 credits

Prerequisite: permission of instructor. Introduces molecular simulation methods (Monte Carlo, molecular dynamics) and their application to polymer-related materials at the molecular and coarse-grain levels.

778 ADVANCED FUNCTIONAL POLYMERS 2 credits

Prerequisites: 611, 641 or permission of instructor. This course focuses on the recent development of functional polymers for applications as advanced materials and smart devices, which requires the attendant to possess some prior knowledge of polymer science and polymer engineering from such 600 level course(s) as mentioned above.

797 ADV T: POLYMER ENG 2-3 credits

(May be repeated) Prerequisite: permission of instructor. Advanced special topics intended for Ph.D. students in polymer engineering.

898 PRELIMINARY RESEARCH 1-15 credits

(May be repeated) Prerequisites: completion of qualifying examination, approval of Student Advisory Committee. Preliminary investigation of Ph.D. dissertation subject.

899 DOCTORAL DISSERTATION 1-15 credits

(May be repeated) Prerequisite: completion of candidacy examination of Student Advisory Committee. Original research by a Ph.D. candidate.



Polymer Science (9871)

401	INTRODUCTION TO ELASTOMERS	<i>3 credits</i>
Prerequisites: physical chemistry (or equivalent) or permission. An introduction to the science and technology of elastomeric materials. Lecture and laboratory.		
402	INTRODUCTION TO PLASTICS	<i>3 credits</i>
Prerequisite: physical chemistry (or equivalent) or permission. An introduction to the science and technology of plastic materials. Lecture and laboratory.		
407	POLYMER SCIENCE	<i>4 credits</i>
Prerequisite: 3150:314 or 3650:301 or permission. Principles of polymerization processes and relationships between molecular structures and physical behavior of polymers. Molecular weight distributions of macromolecules discussed and methods of determining molecular weights utilized.		
497	HONORS PROJECT IN POLYMER SCI	<i>1-3 credits</i>
Prerequisites: Sophomore, junior, or senior standing in Honors College and permission of honors preceptor in the home department. Independent research leading to completion of honors thesis under guidance of project adviser. May be repeated for a total of 10 credits.		
499	RESEARCH PROBLEMS POLYMER SCI	<i>1-3 credits</i>
Prerequisite: permission. Faculty-supervised undergraduate research problems in polymer science, culminating in a written report.		
601	POLYMER CONCEPTS	<i>2 credits</i>
Prerequisite: Permission of instructor. Introduction to basic concepts in polymer science, including polymerization, copolymerization processes and naturally occurring polymers. Polymer nomenclature, definitions and classifications. Polymer stereochemistry and structure-property relationships.		
602	SYN & CHEM BEHAVIOR POLYMERS	<i>2 credits</i>
Prerequisite: 601 or instructor's permission. Introduction to fundamentals and practical aspects of polymer synthesis and reactions of polymers; general knowledge of laboratory and commercial methods for polymer preparation; practical examples.		
604	SPEC PRO: POLYMER SCI	<i>1-3 credits</i>
Prerequisite: permission. Research projects of limited nature assigned to student entering polymer science program. Intended to familiarize student with typical problems and techniques in this field.		
607	SEM: POLYMER SCIENCE I	<i>1 credits</i>
Prerequisite: limited to first-and second-year resident graduate students. Participants are to present a 25-minute lecture on some aspect of polymer science and to participate in discussions of lectures presented by other seminar participants.		
608	SEM: POLYMER SCIENCE II	<i>1 credits</i>
Prerequisite: limited to first-and second-year resident graduate students. Participants are to present a 25-minute lecture on some aspect of polymer science and to participate in discussions of lectures presented by other seminar participants.		
613	POLYMER SCIENCE LABORATORY	<i>3 credits</i>
Prerequisites or corequisites: at least one of the courses 601, 631, 674, or 701, or permission of instructor. Laboratory experiments in synthesis, characterization, physical properties and processing and testing of polymers.		
615	LAB COMP APPL: POLYMER SCIENCE	<i>3 credits</i>
Prerequisites: Basic knowledge of computer programming and permission of instructor. Laboratory use of computers in polymer science research for data acquisition, data analysis, graphing, and preparation of reports and thesis.		
631	PHYS PROPERTIES OF POLYMERS I	<i>2 credits</i>
Prerequisite: permission of instructor. Thermodynamic and molecular basis of rubber elastic behavior; time-dependent mechanical properties of polymeric materials; melt-flow and entanglements; the morphology of crystalline polymeric materials; fracture of polymers.		
632	PHYS PROPERTIES OF POLYMERS II	<i>2 credits</i>
Prerequisite: 631 or permission of instructor. Normal-coordinate theories of molecular motion and applications to time-dependent mechanical, electrical, and scattering properties of polymeric systems; time-temperature superposition; free volume, WLF relation; fracture; glass transition.		
674	POLYMER STRUCTURE & CHARACT	<i>2 credits</i>
Prerequisites: 3150:313 and 3150:314 or permission of instructor. Presentation of statistical description of polymer molecular properties including chain polymerization and degradation, characterization of conformation, molecular weight, local structure, crystal structures and ordering.		
675	POLYMER THERMODYNAMICS	<i>2 credits</i>

Prerequisite: 674 or permission of instructor. Presentation of the theories and experiments concerning polymer solutions, polymer phase equilibria, and polymeric phase transitions and dilute solution steady-state transport.

699	MASTERS THESIS	<i>1-6 credits</i>
Prerequisite: permission. For properly qualified candidate for master's degree. Supervised original research in polymer science, under direction of faculty member, followed by submission of thesis.		
701	POLYMER TECHNOLOGY I	<i>2 credits</i>
Principles of compounding and testing, processing principles and types of operation, design principles.		
702	POLYMER TECHNOLOGY II	<i>2 credits</i>
Prerequisite: 701 or permission of instructor. Rubber industry, rubber compounding and processing, vulcanization methods, physical testing, plastics preparation and compounding, manufacturing processes. Lecture/laboratory.		
703	POLYMER TECHNOLOGY III	<i>2 credits</i>
Prerequisite: 702 or permission of instructor. Flow properties, extrusion, calendaring and milling, molding, mixing, bond operations, engineering properties, rubber springs, viscoelastic analysis design consideration. Lecture/laboratory.		
704	CONDENSATION POLYMERIZATION	<i>2 credits</i>
Prerequisite: 3150:463/563 or permission of instructor. Survey of the theory and practice of condensation polymerization. Numerous commercial examples are presented with special emphasis being placed on the properties and applications of polymers prepared by this technique. Structure-property relationships are highlighted for each major polymer class.		
705	FREE RADICAL REACT POLYMER SCI	<i>2 credits</i>
Prerequisite: 3150:463/563 or permission on instructor. Covers the 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.		
706	IONIC & MONOMER INSRTN REACTNS	<i>2 credits</i>
Prerequisite: 3150:463/563 or permission of instructor. Covers the scope, kinetics and mechanisms of polymerizations initiation by anions, carbenium ions and onium ions as well as polymerizations induced by coordination catalysts. Living polymerizations, molecular weights, molecular weight distributions, stereo-chemistry, solvent effects, counterion effects, temperature effects, Ziegler-Natta catalysis, olefin metathesis, functionalization of polymers, graft and block copolymer synthesis.		
711	ST: POLYMER SCIENCE	<i>1-3 credits</i>
Prerequisite: permission. Topics of current interest in polymer science, encompassing chemistry, physics or technological aspects of macromolecular substances, including laboratory work where applicable.		
712	ST: POLYMER SCIENCE	<i>2 credits</i>
Prerequisite: permission. Topics of current interest in polymer science, encompassing chemistry, physics or engineering aspects of macromolecular science.		
899	DOCTORAL DISSERTATION	<i>1-16 credits</i>
Open to properly qualified students accepted as candidates for Doctor of Philosophy in Polymer Science depending on the availability of staff and facilities.		



The University of Akron
Undergraduate Bulletin

School of Law

- [Law \(9200\)](#)



Law (9200)

601	CIVIL PROCEDURE I	<i>3 credits</i>
Personal and subject matter jurisdiction; venue; ascertaining the applicable law; rulemaking; pleading; motions; joinder of claims and parties; discovery; pretrial; trial; judgments; appellate review; res judicata and collateral estoppel.		
602	CIVIL PROCEDURE II	<i>3 credits</i>
Prerequisite: 601. Continuation of 601. Personal and subject matter jurisdiction; venue; ascertaining the applicable law; rulemaking; pleading; motions; joinder of claims and parties; discovery; pretrial; trial; judgments; appellate review; res judicata and collateral estoppel.		
603	CONSTITUTIONAL LAW I	<i>3 credits</i>
Prerequisite: None. Governmental authority and its distribution under the Constitution with an introduction to individual rights and liberties.		
604	CONSTITUTIONAL LAW II	<i>3 credits</i>
Prerequisite: 603. Continuation of 603. Rights, privileges and immunities under the Constitution.		
605	CONTRACTS I	<i>1-4 credits</i>
Nature and purposes of contract law. Formation. Consideration. Contractual alternatives. Reality of consent. Capacity. Statute of Frauds. Construction. Breach and associated remedies. Resolution of disputes. Discharge of obligations. Third party interests.		
606	CONTRACTS II	<i>1-4 credits</i>
Prerequisite: 605. Nature and purposes of contract law. Formation. Consideration. Contractual alternatives. Reality of consent. Capacity. Statute of Frauds. Construction. Breach and associated remedies. Resolution of disputes. Discharge of obligations. Third party interests.		
607	CRIMINAL LAW	<i>3 credits</i>
Prerequisite: None. Nature and source of criminal liability studied in light of modern developments. The act. Mental conditions requisite to criminal responsibility. Specific crimes and defenses thereto.		
608	EVIDENCE	<i>3 credits</i>
Prerequisite: None. Covers basic evidence law with emphasis on the Federal Rules of Evidence and state rules patterned thereon.		
609	INTRO TO LAW & LEGAL SYSTEMS	<i>1 credits</i>
Prerequisite: None. Orients the beginning law student to the study of law, the United States legal system, and law in a broad context. Provides students with a framework within which to understand the basic premises of our system of law, both substantive and procedural, and the ways in which law is made, developed and applied, as well as the choices inherent in formulating law and a legal system.		
610	GENERAL WRITING REQUIREMENT	<i>0 credits</i>
Prerequisite: None. The General Writing Requirement is a 0 credit hour course required for graduation. This course may be repeated. Students must follow the rules and guidelines as outlined in the "General Writing Requirement ("GWR") Standards Requirements" available in the Dean's Office.		
612	PROFESSIONAL RESPONSIBILITY	<i>3 credits</i>
Prerequisite: None. Legal profession as an institution. Responsibilities of lawyers. Duties and privileges. Professional qualifications.		
613	PRO BONO SERVICE REQUIREMENT	<i>0 credits</i>
To provide positive experiences to law students that will promote their future involvement as practitioners and provide independent educational value (direct knowledge) concerning the plight of persons of limited means and their access to justice.		
614	PROPERTY I	<i>1-4 credits</i>
Possession, means by which title may be obtained; fixtures; emblements; estates in land; concurrent ownership; the deed; the mortgage; the land contract. History of land law. Statute of Frauds recording; title registration; covenants for title; adverse possession; landlord-tenant relationship; legislation restricting land use; easements; licenses; private restrictions; water rights.		
615	PROPERTY II	<i>1-4 credits</i>
Prerequisite: 614. Possession, means by which title may be obtained; fixtures; emblements; estates in land; concurrent ownership; the deed; the mortgage; the land contract. History of land law. Statute of Frauds recording; title registration; covenants for title; adverse possession; landlord-tenant relationship; legislation restricting land use; easements; licenses; private restrictions; water rights.		
616	TORTS I	<i>1-4 credits</i>

Survey of basic tort law and its function; allocating cost of unintentionally caused harm by negligence or strict liability; intentional wrongs; dignitary wrongs.

617	TORTS II	<i>1-4 credits</i>
Prerequisite: 616. Continuation of 616. Survey of basic tort law and its function; allocating cost of unintentionally caused harm by negligence or strict liability; intentional wrongs; dignitary wrongs.		
618	ADVANCED LEGAL RESEARCH	<i>1 credits</i>
Prerequisites: 619 and 620. The purpose of this course is to further develop the legal research skills of law students beyond basic legal research to prepare them for the practice of law, by covering legal research materials in greater depth and by introducing students to specialized legal sources.		
619	LARW I	<i>3 credits</i>
Introduction to the basic skills in legal research, particularly case law, statutes, and secondary authority; development of skills in legal analysis and writing through expository writing (research memoranda) and persuasive writing and oral advocacy (motions and appellate briefing and argument).		
620	LARW II	<i>2 credits</i>
Prerequisite: 619. Introduction to the basic skills in legal research, particularly case law, statutes, and secondary authority; development of skills in legal analysis and writing through expository writing (research memoranda) and persuasive writing and oral advocacy (motions and appellate briefing and argument).		
621	ACCT & FIN LAWYER'S PERSPECTIV	<i>3 credits</i>
Prerequisite: None. A study of the underlying assumptions and principles of financial information prepared in accordance with generally accepted accounting principles and the evaluation of such information in terms of its significance to users of such information. (May be taken for letter grade or credit/noncredit.)		
622	ADMINISTR OF CRIMINAL JUSTICE	<i>3 credits</i>
Prerequisite: None. Administration of criminal justice relating processes of criminal law to objectives of criminal correction. Effects of federal constitutional provisions on criminal procedure.		
623	ADMINISTRATIVE LAW	<i>3 credits</i>
Prerequisite: None. An examination of the role and operation of government agencies, including the procedures agencies are required to follow, public participation and hearing requirements, and the standards and mechanisms governing judicial review of agency decisions.		
624	CRIMINAL LAW/WRITING LAB	<i>2 credits</i>
This course covers formulating a rule of law from one or more legal authorities, placing the rule in a rule-structure, analyzing application of that rule to a set of facts, and organizing a legal discussion of that analysis.		
626	BASIC BUSINESS ASSOCIATIONS	<i>3 credits</i>
Prerequisite: None. Vicarious liability. Employment relationships and scope. Authority and apparent authority. Misrepresentation by an agent. Undisclosed principal. Ratification. Elements of partnership and other unincorporated business associations.		
627	COMM PAPER, SALES & LEASE TRAN	<i>3 credits</i>
Prerequisite: 629. The Law of Negotiable Instruments and Bank Collections under Articles 3 and 4 of the Uniform Commercial Code, the law of sales under Article 2, and UCITA.		
628	SEMINAR IN PRETRIAL ADVOCACY	<i>3 credits</i>
Prerequisite: 602. A practical course designed to simulate all of the necessary steps leading to trial, beginning with the client interview and up to and including the final pretrial statement.		
629	SECURED TRANSACTIONS	<i>3 credits</i>
Prerequisite: None. The Law of Secured Transactions under Articles 9 of the Uniform Commercial Code. Includes an examination of the impact of the federal bankruptcy law and the Federal Tax Lien Act on Article 9 security interests.		
630	JUDICIAL ROLE: CONDUCT & ETHIC	<i>2-3 credits</i>
This is a reading and discussion course covering the topic of the common law system. Topics will likely include methods of selection, standards and mechanisms for regulating conduct, tenure and performance review issues, and more generally the role that the judge is called upon to play.		
631	INTERSTATE PRAC: CONF OF LAWS	<i>3 credits</i>
Prerequisite: None. Problems of application of private law in jural relations containing one or more foreign law elements. Jurisdiction and enforcement of foreign judgments.		
632	SEM: EDUCATION LAW	<i>3 credits</i>
Study of how the law and the public education system interact.		
633	CORPORATIONS	<i>3 credits</i>
Prerequisite: None. An introduction to the law relating to the typical American enterprise. Principal emphasis is on financing, control, management and regulation of corporations, both publicly owned and closely held.		
634	LAW & PSYCHIATRY	<i>2-3 credits</i>
Exploration of intersections between psychiatry & mental illness & legal rules & procedures.		
635	BANKRUPTCY LAW	<i>3 credits</i>
Recommended: 629. Provisional remedies and enforcement of judgments. Fraudulent conveyances. General assignments for benefit of creditors. Creditor's agreements. Bankruptcy.		
636	HUMAN RESOURCES LAWYER	<i>3 credits</i>
This course offers a unique, in-depth review of interesting and challenging areas within employment and labor laws that affect the expanding field of human resources.		

637	EMPLOYMENT DISCRIMINATION	<i>3 credits</i>
Prerequisite: None. Legal developments, primarily federal, affecting discrimination in employment.		
638	FAMILY LAW	<i>3 credits</i>
Prerequisite: None. Major areas of family law; theories that have influenced its development. Functions performed by various agencies which seek to effect a non-judicial settlement of domestic problems. Adoption.		
639	ESTATE & GIFT TAXATION	<i>3 credits</i>
Prerequisite: None. A survey of federal estate and gift taxation; relation between federal income tax and federal taxes on gratuitous transfers; the place of federal taxes in estate planning.		
640	INDIVIDUAL TAXATION	<i>3 credits</i>
Prerequisite: None. Survey of federal income tax laws applicable to individuals.		
641	CORPORATE TAXATION I	<i>3 credits</i>
Prerequisite: 640. Survey of federal income tax law applicable to corporations.		
642	ALTERNATIVE DISPUTE RESOLUTION	<i>2-3 credits</i>
Prerequisite: None. A survey of the alternatives to litigation available for resolving disputes.		
643	FEDERAL JURISDICTION & PROCEDURE	<i>3 credits</i>
Prerequisite: 602. Congress, the federal courts and the Constitution; appellate and collateral review; federal question, diversity and admiralty cases; sovereign immunity, abstention and enjoining state actions; choice of law; federal common law.		
644	SUPREME COURT SEMINAR	<i>3 credits</i>
Prerequisite: 602. This course is designed to explore the powers of the Supreme Courts.		
645	SEM: NON-PROFIT TAX ENTITIES	<i>3 credits</i>
Prerequisite: None. The study of the special taxation issues confronting non-profit organizations.		
646	HEALTH LAW	<i>1-3 credits</i>
Prerequisite: None. Ohio law of medical malpractice, bioethics and the law, regulatory and corporate issues in medicine.		
647	JUVENILE LAW	<i>3 credits</i>
Prerequisite: None. Study of laws relating to juveniles (neglect, dependency, and delinquency).		
648	INSURANCE LAW	<i>3 credits</i>
Prerequisite: None. Legal principles of insurance of person and property, including insurable interest, measure of recovery, subrogation, rights of assignees and beneficiaries, warranty, concealment, representation and fraud. Adjustment of claims. Regulation.		
649	INTERNATIONAL LAW	<i>3 credits</i>
Prerequisite: None. Nature and breadth of international law; its sources and subjects, and its relation to municipal law, to individuals and to international organizations.		
650	LABOR LAW & COLL BARGAINING	<i>3 credits</i>
Prerequisite: None. Representation procedures. Unfair labor practices of labor and management, strikes, picketing, boycotts, lockouts. Jurisdictional disputes. Law and practice of labor arbitration and collective bargaining, including a study of the grievance arbitration process pursuant to collective bargaining agreements.		
651	EMPLOYMENT LAW	<i>3 credits</i>
Prerequisite: None. Developments in employment law: legislation, regulations, judicial decisions, and changes in the social and economic structure of the workplace.		
652	LAND USE PLANNING	<i>3 credits</i>
Prerequisite: 615. Assumptions, doctrines and implications of planning law; zoning; legal and administrative problems involved in allocating and developing land located in metropolitan areas.		
653	SCHOOL LAW	<i>1-3 credits</i>
Prerequisite: None. School governance; allowable discipline; constitutional constraints on restricting freedom of expression and privacy intrusions; tort liability for injuries on school property.		
654	SEM: FEMINIST & RACE THEORY	<i>3 credits</i>
Prerequisite: None. Exploration of contemporary feminist legal theory and critical race theory. The common theme in all of the readings is: "What is equality and inequality?" Students will explore what equality might mean, how it can be achieved, why the country has failed to achieve it so far, why inequality exists, how it impacts people and what legal and non-legal solutions it might involve.		
655	ELECTION LAW	<i>3 credits</i>
Prerequisite: 604. Examines the legal environment for political campaigns. Topics include historical background, legal foundation, voting rights, filing requirements, campaign finance and political advertising.		
656	LAW REVIEW STAFF	<i>2 credits</i>
Prerequisite: Completion of first year and invitation predicated upon scholarship or demonstrated writing skills. Preparation of note: analysis and criticism of recent cases; citation checking and critical review ("spading") of notes or articles of others. May not be repeated. Total credits obtainable for courses designated Law Review 656, 657 and 658 not to exceed four (4) credit hours.		
657	LAW REVIEW SENIOR STAFF	<i>2 credits</i>

Prerequisite: 656. Preparation of a note publishable quality. May not be repeated. Total credits obtainable for courses designated Law Review 656, 657 and 658 not to exceed four (4) credit hours. A student who takes 657 cannot take 658.

658	LAW REVIEW EDITORIAL BOARD	<i>2 credits</i>
Prerequisites: 656 and election to Law Review Editorial Board. Performance of significant and appropriate editorial duties. May not be repeated. Total credits obtainable for courses designated Law Review 656, 657 and 658 not to exceed four (4) credit hours. A student who takes 657 cannot take 658.		
659	NEGOTIATION	<i>1-3 credits</i>
Prerequisite: 602. The lawyer's role as negotiator in planning negotiations and determination of strategies to effect objects, weighing legal, economic, behavioristic, ethical and social factors that condition outcomes.		
660	SEMINAR IN WORKERS COMPENSATION	<i>1-3 credits</i>
Prerequisite: None. Jurisdictional and procedural issues; scope of employer liability; defenses; specific remedies.		
661	ENVIRONMENTAL LAW	<i>3 credits</i>
Prerequisite: None. An examination of major federal environmental statutes and pollution control programs, common law remedies for environmental damage, and policy issues involved in decisions concerning the environment.		
662	MEDIA LAW	<i>3 credits</i>
Prerequisite: None. Constitutional defamation, and commercial problems involved in the written and/or oral publication of news and entertainment features.		
663	LEGISLATIVE PROCESS	<i>3 credits</i>
See department for course description.		
664	LOCAL GOVERNMENT LAW	<i>3 credits</i>
Prerequisite: None. Nature of municipal corporations. Creation, annexation, and dissolution. Home rule. Police powers. Financing. Federal-state-local relationships. Staffing. Contractual and delictual liability.		
665	UCC-SALES - ACCELERATED	<i>2 credits</i>
A survey, in accelerated format, of the Law of Sales in the Uniform Commercial Code, including formation, execution and remedies, with emphasis on the acquisition of skills for solving problems in this area.		
667	SUBSTANTIAL SKILLS	<i>1-3 credits</i>
May be repeated. Skills-centered courses that involve faculty assessment and grading based upon skills performances, offering students the opportunity to satisfy the skills requirement.		
668	REMEDIES	<i>3 credits</i>
Prerequisite: None. Equitable remedies, unjust enrichment and restitution; remedies for injuries to tangible property, and economic, dignitary and personal interests including wrongful death. Disaffirmance and remedies for deception, duress, undue influence, hardship, unconscionability, mistake, breach of contract and nominally unenforceable transactions.		
669	UCC-SALES	<i>2 credits</i>
A survey of the Law of sales in the Uniform Commercial Code, including formation, execution and remedies, with emphasis on the acquisition of skills for solving problems in this area.		
670	SEM: CRIMINAL PROCESS	<i>3 credits</i>
Prerequisite: 622. Intensive study of the criminal process including the decision to prosecute, grand jury, preliminary hearing, joinder and severance, discovery, plea bargaining, jury trials and double jeopardy.		
671	SECURITIES REGULATION	<i>3 credits</i>
Prerequisite: 633. State and federal law and rules of the Securities and Exchange Commission in issuance and trading of securities; legal and self-regulatory aspects of the securities industry.		
672	SEM: BUSINESS PLANNING	<i>3 credits</i>
Prerequisite: 633 or permission of instructor. Advanced course using the problem approach in planning business transactions in light of applicable corporate, tax and securities law considerations.		
673	ADVANCED LEGAL APPLICATIONS	<i>3 credits</i>
This course is designed to enhance student ability to prepare for the bar exam, and provide students with an understanding of the critical skills, techniques, and strategies necessary to pass the bar. This course is a pre-bar preparatory course intended supplement and compliment, not replace, commercial bar preparation courses. This course is designed for students planning to take the Ohio Bar Exam, but much of the content and skills are transferrable to other jurisdictions.		
674	INTERNATIONAL COMMERCIAL LAW	<i>3 credits</i>
Course focusing on the law relating to transboundary sale of goods and related arrangements. References are made to US domestic sales law (UCC Art 2, 5) from a comparative perspective. The course covers the basic sales contract, documentary letters of credit as a form of payment for goods, and international commercial arbitration.		
675	SP: ESTATE PLANNING	<i>3 credits</i>
Prerequisites: 686; recommended: 639, 640. Relevant tax and nontax problems in planning of estates and examination of dispositive devices in accomplishing the objectives of estate planning.		
677	REAL ESTATE LAW	<i>3 credits</i>
An in-depth study of the legal regimes affecting real estate transactions.		
678	SEM: JURISPRUDENCE	<i>3 credits</i>
Prerequisite: None. Examination and evaluation of principal theories of legal philosophy. Theories are frequently considered in connection with concrete problems and are evaluated in light of various goal values.		

679	SEXUAL ORIENTATION AND THE LAW	<i>2-3 credits</i>
Sexual Orientation and the Law addresses legal issues that affect gay, lesbian, bisexual, transgendered and intersexual people. This course will range from the theoretical to the practical. A continuous theme will be seeing how representing someone in a particular context helps bring together diverse areas of law and ways of thinking in pursuit of creative problem-solving.		
680	QUAL PENS & PROFIT SHAR PLANS	<i>3 credits</i>
Recommended: 640. Nature, purpose and operation of pension and profit sharing plans.		
683	SEMINAR IN PRODUCT LIABILITY	<i>3 credits</i>
Prerequisite: 617. Liability for defective products and developing legal theories and remedies. Examination of government regulation of dangerous and defective products.		
684	SEM: SELECTED LEGAL PROBLEMS	<i>1-3 credits</i>
(May be repeated) Analysis of special or current legal problems offering opportunities for legal research, effective integration of legal and relevant nonlegal materials, and expository legal writing.		
685	WILLS, TRUSTS & ESTATES I	<i>3 credits</i>
Prerequisite: None. Intestate succession; execution, revocation and revalidation of wills; creation and termination of trusts; gifts to charity; will substitutes; future interests; powers of appointment; class gifts.		
686	WILLS, TRUSTS AND ESTATES II	<i>3 credits</i>
Prerequisite: 685. Continuation of 685.		
687	EXPERT EVIDENCE	<i>3 credits</i>
Course designed to give the student extensive practice in solving difficult evidence problems involving the use of experts.		
688	LEGAL DRAFTING	<i>1 credits</i>
Prerequisites: 619, 620. Refinement of skills in written legal analysis through performance of drafting assignments, including preparation of a written exposition on a proposed solution to a drafting problem. Required course for all students.		
689	APPELLATE ADVOCACY	<i>1 credits</i>
Prerequisite: 688. Development of skills in written legal analysis through performance of drafting assignments, including preparation of a written exposition on a proposed solution to a drafting problem.		
690	TRIAL ADVOCACY I	<i>3 credits</i>
Prerequisite: 608. Fundamental techniques of trial preparation, direct examination, cross examination, introduction of exhibits, objections, opening statements and closing arguments.		
691	INT INV:F INV RG,TCH TRN,D SET	<i>3 credits</i>
Recommended: 649. Interaction of economics, politics and law on investments transcending national boundaries. Using the multinational corporation as the focal point of study, the seminar directs attention to the assumptions, risks, costs and benefits of foreign direct investment; national and international controls over multinational corporations; technology transfer; and the protection of foreign investment through agreements, treaties and adjudicatory processes. Arbitration and judicial settlement along with the associated jurisdictional problems and enforcement measures are considered.		
692	TRIAL ADVOCACY II	<i>3 credits</i>
Prerequisite: 690. Preparation and actual trial of two civil cases and two criminal cases; jury selection; ethical and political considerations of trial advocacy.		
693	PROBATE PRACTICE	<i>2 credits</i>
Prerequisites: 685, 686. Intestate and testamentary administration, including the probating of a will, presentment of claims, the inventory, settlement and distribution and will contests. The Ohio Probate Code will be the model.		
694	ADVOCACY TEAMS (SPRING)	<i>1-2 credits</i>
Prerequisite: None. Practice training in legal advocacy. Each person enrolled for credit will be required, at a minimum, to do substantial research on the problem and participate in practice rounds for oral presentations. The faculty advisor of the relevant team will decide whether the team participant will receive 1 or 2 credits, with final approval residing in the Director of Competitions. Total credits for courses Advocacy Teams (694 and 695) not to exceed four (4) credit hours.		
695	ADVOCACY TEAMS (FALL)	<i>1-2 credits</i>
Prerequisite: None. Practice training in legal advocacy. Each person enrolled for credit will be required, at a minimum, to do substantial research on the problem and participate in practice rounds for oral presentations. The faculty advisor of the relevant team will decide whether the team will receive 1 or 2 credits, with final approval residing in the Director of Competitions. Total credits for courses Advocacy Teams (694 and 695) not to exceed (4) credit hours.		
696	CLINICAL SEMINAR I	<i>2-3 credits</i>
Prerequisites: Successful completion of 28 credit hours and permission of Clinical coordinator. Application of legal knowledge to practical problems in supervised public law office contexts. May be taken independently of 697. Credit for 696, 697 not to exceed six (6) credits and may not be repeated.		
697	CLINICAL SEMINAR II	<i>2-3 credits</i>
Prerequisite: 696. Continuation of 696.		
698	INDIVIDUAL STUDIES & RESEARCH	<i>2-3 credits</i>

Prerequisite: Permission of Associate Dean. (May be repeated for a total of six credits) With permission of Associate Dean, special problems, projects or research may be taken for credit under supervision of member of faculty. The paper for this course must have a minimum length of thirty (30) pages if taken for two (2) credits or a minimum length of forty-five (45) pages if taken for three (3) credits; unless the instructor approves an alternative form appropriate to the project. This course may be used to satisfy the General Writing Requirement. Except under rare and compelling circumstances, this course may not be taken to write a research paper on a subject on which the school offers a course which provides the student an opportunity to pursue that area of study.

699	IMMIGRATION LAW	<i>1-3 credits</i>
Prerequisite: None. The study of the law and processes governing immigration, naturalization, and deportation.		
700	FUNDA OF INTELLECTUAL PROPERTY	<i>3 credits</i>
An introduction to the policies underlying the protection of intellectual property, common law protection under state law, and major fields of intellectual property protection (patent, copyright, trademark, and trade secrets).		
701	PATENT LAW & POLICY	<i>3 credits</i>
A study of the law and process of patent protection and enforceability and the policies that underlie patent protection.		
702	TRADEMARK LAW	<i>3 credits</i>
A study of the law and process of protecting trademarks and trade dress, and the policies underlying the system.		
703	COPYRIGHT LAW	<i>3 credits</i>
A study of the law and policy protecting intellectual property through copyright, and enforcing and licensing copyrights.		
704	TRADE SECRETS	<i>2-3 credits</i>
A study of protecting intellectual property through common law mechanisms, and on helping clients choose a method of protection suited to their needs and the property.		
705	LICENSNG INTELLECTUAL PROPERTY	<i>1-3 credits</i>
Methods of exploiting intellectual property by licensing others to use it; contractual necessities, rights and obligations to protect ownership.		
706	INTL INTELLECTUAL PROPERTY LAW	<i>3 credits</i>
Prerequisite: 700 or instructor permission. A study of the major conventions governing the protection of intellectual property internationally and of current policy issues in the field.		
707	PATENT PROSECUTION	<i>3 credits</i>
The process of researching, preparing and prosecuting valid and enforceable applications to obtain U.S. patents.		
708	TRADEMARK PROSECUTION	<i>2-3 credits</i>
Study of law and procedures relative to obtaining and maintaining federal trademark registrations.		
709	COMPLEX IP LITIGATION	<i>3 credits</i>
Prerequisite: 700. An introduction to special problems in litigating patent claims.		
710	CYBERLAW	<i>3 credits</i>
Exploration of legal issues raised by the internet, broadcast regulation, and competition policy.		
713	INTELLECTUAL PROPERTY LEGISLAT	<i>2-3 credits</i>
Study of the legislative process relating to the enactment of intellectual property legislation.		
714	C POL ISS AFF INTLLCT PROP LAW	<i>2-3 credits</i>
Study of current policy issues affecting intellectual property law and practice.		
716	INTERNATIONAL PATENT LAW	<i>1-3 credits</i>
Prerequisite: 700 or 701 or instructor permission. Study of major treaties and agreements affecting the international practice of patent law.		
717	INTERNATIONAL COPYRIGHT LAW	<i>1-3 credits</i>
Prerequisite: 700 or 703 or instructor permission. Study of major treaties and agreements affecting the international practice of copyright law.		
718	INTERNATIONAL TRADEMARK LAW	<i>1-3 credits</i>
Prerequisite: 700 or 702 or instructor permission. Study of major treaties and agreements affecting the international practice of trademark law.		
720	MANAGING INTELLECTUAL PROPERTY	<i>1-3 credits</i>
Study of how best to manage a company's intellectual property portfolio.		
721	TAXATION OF INTELLECT PROPERTY	<i>2-3 credits</i>
Study of the taxation relating to intellectual property.		
723	IP POLICY & POLITICS	<i>2 credits</i>
Prerequisite: 700. A course designed to expose students to current and difficult policy issues, have them discuss them with actual members of the institutions and the decision makers who address and resolve them, and to engage students in the process for approaching these issues. Contains a rigorous writing component on a topic selected with the professor.		
724	INTERNATL PATENT PROSECUTION	<i>1-3 credits</i>
Prerequisites: 700, 701, 716 or instructor's permission. To explore strategy, tactics and procedure for the examination of patent applications beyond the United States.		
725	ANTITRUST LAW	<i>3 credits</i>

Prerequisite: None. Fundamentals of antitrust; questions of evidence in price fixing and boycotts under the Sherman Act, resale restrictions and tie-ins, scope of antitrust law and certain exemptions.

726	PATENT CLAIM CONSTRUCTION	<i>3 credits</i>
Presentation of the rules, evidence and procedures for interpreting the claims of a patent. Covers the principles of construing claims, consideration of the judge-made rules regarding interpretation of claim language standing alone, in the context of the specification of the patent and in the context of prosecution history.		
744	SEM: FIRST AMENDMENT LAW	<i>3 credits</i>
Prerequisite: None. An in-depth examination of selected issues concerning the speech, press, and religion clauses of the First Amendment.		
776	SEM:INT TRD:GATT,WTO,REG INTG	<i>3 credits</i>
Prerequisite: None. Course covering governmental and inter-governmental regulation of international trade, as well as the institutional framework of regional economic integration associations. Specific topics include domestic and international policies and norms regarding imports and exports, anti-dumping, countervailing duties against foreign subsidies, unfair trade competition, import relief and retaliation. The North American Free Trade Agreement (NAFTA) is studied as an example of regional economic integration.		
781	SPORTS LAW	<i>3 credits</i>
Prerequisite: None. The law affecting sports and players, including contract and liability issues, as well as administrative aspects.		
782	ENTERTAINMENT LAW	<i>3 credits</i>
Prerequisite: None. Covers the law and business of the entertainment industries. It also examines recent national and international developments and trends in the entertainment industries.		
784	SEM: SELEC INTELLECT PROP PROB	<i>1-3 credits</i>
(May be repeated) Analysis of special or current intellectual property legal problems offering opportunities for legal research, effective integration of legal and relevant nonlegal materials, and expository legal writing.		
796	INTELLECTUAL PROPERTY CLINIC	<i>2 credits</i>
Prerequisites: 700, 702, 708, successful completion of 28 credit hours and permission of IP Clinical coordinator. Conducted within a pilot program of the U.S. Patent and Trademark Office. Application of intellectual property practical legal skills in interviewing, researching, investigating, counseling and drafting in the area of trademark and copyright issues. This clinic has a public interest component in that the clients served have limited economic resources.		
798	IP INDIVIDUAL STUD & RESEARCH	<i>2-3 credits</i>
Prerequisite: Permission of Associate Dean. (May be repeated for a total of six credits) With permission of Associate Dean, special problems, projects or research may be taken for credit under supervision of member of faculty. The paper for this course must have a minimum length of thirty (30) pages if taken for two (2) credits or a minimum length of forty-five (45) pages if taken for three (3) credits; unless the instructor approves an alternative form appropriate to the project. This course may be used to satisfy the General Writing Requirement. Except under rare and compelling circumstances, this course may not be taken to write a research paper on a subject on which the school offers a course which provides the student an opportunity to pursue that area of study.		
800	FUNDA OF INTELLECTUAL PROPERTY	<i>3 credits</i>
An introduction to the policies underlying the protection of intellectual property, common law protection under state law, and major fields of intellectual property protection (patent, copyright, trademark, and trade secrets).		
801	PATENT LAW & POLICY	<i>3 credits</i>
A study of the law and process of patent protection and enforceability and the policies that underlie patent protection.		
802	TRADEMARK LAW	<i>3 credits</i>
A study of the law and process of protecting trademarks and trade dress, and the policies underlying the system.		
803	COPYRIGHT LAW	<i>3 credits</i>
A study of the law and policy protecting intellectual property through copyright, and enforcing and licensing copyrights.		
804	TRADE SECRETS	<i>2-3 credits</i>
A study of protecting intellectual property through common law mechanisms, and on helping clients choose a method of protection suited to their needs and the property.		
805	LICENSNG INTELLECTUAL PROPERTY	<i>1-3 credits</i>
Methods of exploiting intellectual property by licensing others to use it; contractual necessities, rights and obligations to protect ownership.		
806	INTL INTELLECTUAL PROPERTY LAW	<i>3 credits</i>
Prerequisite: 800 or instructor permission. A study of the major conventions governing the protection of intellectual property internationally and of current policy issues in the field.		
807	PATENT PROSECUTION	<i>3 credits</i>
The process of researching, preparing and prosecuting valid and enforceable applications to obtain U.S. patents.		
808	TRADEMARK PROSECUTION	<i>2-3 credits</i>
Study of law and procedures relative to obtaining and maintaining federal trademark registrations.		
809	COMPLEX IP LITIGATION	<i>3 credits</i>
An introduction to special problems in litigating patent claims.		
810	CYBERLAW	<i>3 credits</i>

Exploration of legal issues raised by the internet, broadcast regulation, and competition policy.

813 **INTELLECT PROPERTY LEGISLAT** *2-3 credits*

Study of the legislative process relating to the enactment of intellectual property legislation.

814 **C POL ISS AFF INTLLCT PROP LAW** *2-3 credits*

Study of current policy issues affecting intellectual property law and practice.

816 **INTERNATIONAL PATENT LAW** *1-3 credits*

Prerequisite: 800 or 801 or instructor permission. Study of major treaties and agreements affecting the international practice of patent law.

817 **INTERNATIONAL COPYRIGHT LAW** *1-3 credits*

Prerequisite: 800 or 803 or instructor permission. Study of major treaties and agreements affecting the international practice of copyright law.

818 **INTERNATIONAL TRADEMARK LAW** *1-3 credits*

Prerequisite: 800 or 802 or instructor permission. Study of major treaties and agreements affecting the international practice of trademark law.

820 **MANAGING INTELLECTUAL PROPERTY** *1-3 credits*

Study of how best to manage a company's intellectual property portfolio.

821 **TAXATION OF INTELLECT PROPERTY** *2-3 credits*

Study of the taxation relating to intellectual property.

823 **IP POLICY & PRACTICE** *2 credits*

A course designed to expose students to current and difficult policy issues, have them discuss them with actual members of the institutions and the decision makers who address and resolve them, and to engage students in the process for approaching these issues. Contains a rigorous writing component on a topic selected with the professor.

824 **INTERNATL PATENT PROSECUTION** *1-3 credits*

Prerequisites: 700, 701, 716 or instructor's permission. To explore strategy, tactics and procedure for the examination of patent applications beyond the United States.

825 **ANTITRUST LAW** *3 credits*

Fundamentals of antitrust; questions of evidence in price fixing and boycotts under the Sherman Act, resale restrictions and tie-ins, scope of antitrust law and certain exemptions.

826 **PATENT CLAIM CONSTRUCTION** *3 credits*

Presentation of the rules, evidence and procedures for interpreting the claims of a patent.Â Covers the principles of construing claims, consideration of the judge-made rules regarding interpretation of claim language standing alone, in the context of the specification of the patent and in the context of prosecution history.Â

844 **SEM: FIRST AMENDMENT LAW** *3 credits*

An in-depth examination of selected issues concerning the speech, press, and religion clauses of the First Amendment.

850 **INTELLECT PROP MASTERS THESIS** *3-6 credits*

This required activity of all LL.M. activities involves research and writing a "law review" quality paper on a legal or policy issue relating to intellectual property law. Topics must be approved by a faculty advisor in advance.

876 **SEM:INT TRD:GATT,WTO,REG INTG** *3 credits*

Course covering governmental and inter-governmental regulation of international trade, as well as the institutional framework of regional economic integration associations. Specific topics include domestic and international policies and norms regarding imports and exports, anti-dumping, countervailing duties against foreign subsidies, unfair trade competition, import relief and retaliation. The North American Free Trade Agreement (NAFTA) is studied as an example of regional economic integration.

881 **SPORTS LAW** *3 credits*

The law affecting sports and players, including contract and liability issues, as well as administrative aspects.

882 **ENTERTAINMENT LAW** *3 credits*

Covers the law and business of the entertainment industries. It also examines recent national and international developments and trends in the entertainment industries.

884 **SEM: SELECTED LEGAL PROBLEMS** *1-3 credits*

(May be repeated) Analysis of special or current legal problems offering opportunities for legal research, effective integration of legal and relevant nonlegal materials, and expository legal writing.

896 **INTELLECTUAL PROPERTY CLINIC** *2 credits*

Prerequisites: 700, 800, 702, 802, 708, 808, successful completion of 28 credit hours and permission of IP Clinical coordinator. Conducted within a pilot program of the U.S. Patent and Trademark Office. Application of intellectual property practical legal skills in interviewing, researching, investigating, counseling and drafting in the area of trademark and copyright issues. This clinic has a public interest component in that the clients served have limited economic resources.

898 **LL.M. INDIV STUDIES & RESEARCH** *3 credits*

With permission of the LL.M. candidates' intellectual property faculty advisor, and reserved for rare and compelling situations that justify altering the normal allocation of credits to Thesis, Internship/Externship and classroom coursework, special problems, projects or research may be taken for credit under the supervision of a supervising faculty member. The paper for this course must have a minimum length of 45 pages; unless the instructor approves an alternative form appropriate to the project. Except under rare and compelling circumstances, this course may not be taken to write a research paper on a subject on which the school offers a course which provides the student an opportunity to pursue that area of study.

900	INTRO INTL & CPRTV INTELL PROP	<i>1-3 credits</i>
A comparative study of intellectual property law (patent, copyright, trademark, and trade secrets) and its underlying policies in an international context with particular attention to the United States, the United Kingdom and the European Union.		
901	COMPARATIVE SALES LAW & POLICY	<i>1-3 credits</i>
An examination of the law applicable to sale of goods transactions between the United States and other countries. It will focus on the Convention of Contracts for the International Sale of Goods (CISG). The course will employ provisions of CISG regarding contract formation, performance, excuse of performance and remedies, using both US cases and foreign. The course will also included a discussion of United States commercial law, including Article 2 of the Uniform Commercial Code in particular, and will consider how CISG differs from Article 2.		
902	COMPARATIVE FAMILY LAW	<i>1-3 credits</i>
An examination of the ways that various legal systems deal with the creation, dissolution adn regulation of families. With a focus on American and European law, the course will consider the ways that different countries address issues including marriage, divorce, custody and child welfare.		
903	COMP CRIM PROC & TRNSNTL PROSE	<i>1-3 credits</i>
This comparative overview of police investigation, prosecution, and adjudication/ trial practices will inform our understanding of our own criminal justice system and the enforcement of criminal laws elsewhere. Topics addressed will include European practices of police search/ seizure and interrogation, the role of the victim, admissibility of evidence and confrontation of witnesses, procedural economy and resolution by plea, the structure of criminal trials, burden of proof, evaluation of the evidence, and rendering of judgment. A brief consideration of such practices in Socialist (China and Russia) and Islamic law models then follows. Finally, we look at issues of jurisdiction, investigation, and extradition that arise in the prosecution of transnational crimes.		
904	INDUS DSGN PROT LAW: NTL & INT	<i>1-3 credits</i>
This course explores the exciting industrial design protection field. Key treaties related to design protection are examined, to set the stage for studying what laws must be adopted in national laws. Then representative regional and national design protection laws are studied to develop the basic principles of design protection. As a part of this course the history of industrial design protection and the trends will be discussed. This review includes analysis of design protection under national trademark law, copyright law, design patent (design registration), sui generis design protection laws, and the relation of these laws to each other and to technology and patent law. As a part of the national and regional topics, the procedures used to create a design right and enforce these rights will be studied.		