

Murray State University

GRADUATE BULLETIN

2008 — 2010

Murray State University
Office of the Provost
Murray, Kentucky

For more information please contact the
Graduate Admissions Office
at 270-809-3779 or
either of the following offices
at 1-800-272-4MSU:
Ext 2 — Admissions
Ext 3 — Financial Aid
or visit the Murray State University
website at www.murraystate.edu

Copies of the catalog may
be obtained by contacting
Admissions
Murray State University
113 Sparks Hall
Murray KY 42071-3312
270-809-3741
or 1-800-272-4678

Accreditations

Institutional Accreditation

Murray State University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097; telephone number 404-679-4501) to award associate, bachelor, master and specialist degrees.

State Accreditation

Kentucky Education Professional Standards Board

Program Accreditations

AACSB-International—The Association to Advance Collegiate Schools of Business (undergraduate and graduate)
Accrediting Council on Education in Journalism and Mass Communications (undergraduate)
American Chemical Society (undergraduate)
American Speech-Language-Hearing Association (undergraduate and graduate)
American Veterinary Medical Association (undergraduate)
Applied Science Accreditation Commission of the Accreditation Board for Engineering and Technology (undergraduate and graduate)
Commission on Accreditation for Dietetics Education of the American Dietetics Association (undergraduate and graduate)
Commission on Accreditation of Allied Health Education Programs (undergraduate)
Commission on Collegiate Nursing Education (undergraduate and graduate)
Council on Accreditation of Nurse Anesthesia Educational Programs (graduate - nurse anesthetist)
Council on Social Work Education (undergraduate)
Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (undergraduate)
Masters in Psychology Accreditation Council (graduate - clinical)
National Association of Schools of Art and Design (undergraduate)
National Association of Schools of Music (undergraduate and graduate)
National Council for Accreditation of Teacher Education (undergraduate and graduate)
National Kitchen and Bath Association (undergraduate)
Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (undergraduate)

Facility Accreditation

American Association of Veterinary Laboratory Diagnosticians (Breathitt Veterinary Center)

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The contents of this publication are subject to change. Anyone desiring current information and data should contact the appropriate representative of the university for accurate and up-to-date information.

Murray State University reserves the right to modify or change any rule, regulation, fee or policy stated herein. This reservation includes, but is not limited to, the right to modify or change any academic program, subject to any limitations imposed by state law.

For additional policies, procedures and information, faculty, staff and students are advised to consult all official university publications, such as the *Faculty Handbook*, *Schedule of Fees*, *Personnel Policies and Procedures Manual*, *Student Life Handbook*, and the *Murray State University Bulletins*. It is the responsibility of each member of the faculty and staff and each student to be aware of and comply with these policies and procedures.

Cover: Original drawing of Pogue Library entrance by Joe Rigsby

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Statement of Affirmative Action and Equal Opportunity

Murray State University does not discriminate on grounds of race, color, gender, sexual orientation, religion, national origin, age, handicap, or veteran's status in providing any educational or other benefits services of Murray State University to students or those applying for admission at Murray State University. Murray State University attempts to provide equal opportunity in all areas of student admissions, financial aid, employment, and placement and provides upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities an equal opportunity to participate in all programs and activities. For information regarding nondiscrimination policies contact the Office of Equal Opportunity, 270-809-3155.

The University reserves the right to cancel any course for which there is insufficient enrollment and make any other policy changes or adjustments in the Bulletin which are deemed necessary.

This Bulletin is effective at the beginning of fall semester 2008. A new Bulletin is published every two years. Student degree programs must be based on the most current Bulletin available at the time the student enrolls in their first course. A course is valid for eight years, beginning with the date the student initially enrolls in the class. Program plans must be completed within the student's first semester of graduate studies. The program plan lists required courses as printed in the Bulletin and any changes must be recorded on the required form with all the required signatures as printed on the program form. See page 32 for degree and course expiration information.

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Administration

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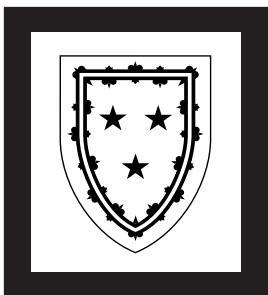
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Catherine Sivills — assistant vice president, Communications



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The University

Our Vision

To build on our reputation as one of the best student-centered, comprehensive universities in the nation.

For three-quarters of a century Murray State University has served students from the region, the nation and the world. Founded in 1922, the university has grown from an enrollment of 202 students to nearly 10,000 today. Students receive individual attention from a teaching faculty which numbers 375. Murray State University has consistently been ranked among the top 25 percent of Southern regional and liberal arts colleges in *U.S. News & World Report's* annual publication, *America's Best Colleges*. Kaplan, Inc. and *Kiplinger's Personal Finance* magazine have also highlighted Murray State's positive attributes. Recognition of the quality of MSU programs is reflected in accreditations. Murray State has been continuously accredited by the Southern Association of Colleges and Schools (SACS) since 1928. Program accreditations have also been attained in art, business, counseling, several engineering technology programs, animal health technology, chemistry, music, nursing, nutrition, occupational safety and health, social work, special education, teacher education, and veterinary laboratory diagnostics.

Located in the Jackson Purchase lake area of west Kentucky, Murray State is a tax-supported university with five academic colleges and one school. The university's 232-acre main campus is in Murray, a city of 16,000.

The main campus comprises over 60 major buildings, including classroom and office buildings and two libraries. Waterfield Library houses the circulating collection, reference sources, government documents, microforms, and periodicals. Historic Pogue Library contains special materials relating to the history and culture of west Kentucky and the region.

Other notable campus facilities and programs providing high-quality instruction and regional service include:

- The Martha Layne Collins Center for Industry and Technology, housing programs in industrial and engineering technology and occupational safety and health, and providing regional industries and businesses with training, consulting services, and research opportunities.
- The Center of Excellence for Reservoir Research, conducting interdisciplinary long-term studies of rivers and reservoirs and assisting with management and protection of waterways and natural ecosystems.
- The Mid-America Remote Sensing Center (MARC), a component of the Center of Excellence, studying satellite-generated data for resource management and developing a geographic information system for Kentucky Lake and its surrounding environments.
- The Chemical Analysis Laboratory, another component of the Center of Excellence, equipped with sophisticated instrumentation for environmental analytical chemistry as well as regional laboratory service for industries, institutions and individuals.

- The Diagnostic and Remediation Center, providing diagnostic, remedial and consultative services for persons with reading, learning, behavioral, speech, language and/or hearing disorders.
- The Price Doyle Fine Arts Center, offering excellent facilities for fine arts programming and featuring year-round art exhibitions, a variety of musical performances, and a season of full-scale theatre productions.
- Flourishing business administration programs, offering classes on campus, via the Internet, and at three off-campus sites and at several others through interactive television, and training a significant number of international students.
- The Interactive Telecommunications Network, operated by the Center for Continuing Education and Academic Outreach, linking several sites with full duplex video and audio capability to deliver both credit and noncredit programs among several locations simultaneously.
- WKMS-FM, a National Public Radio-affiliated 100,000-watt station with a listening audience in five states.
- Listed with the National Registry of Historic Sites, the Wrather West Kentucky Museum, offers programs, exhibits and collections of west Kentucky history, as well as, traveling exhibits.

Three agricultural laboratory farms totalling 356 acres, an animal health technology facility, and the West Kentucky Exposition Center are all within a mile of campus. Regional veterinarians and animal owners benefit from the animal disease diagnostic services provided at the university's Breathitt Veterinary Center in nearby Hopkinsville, Kentucky; in addition, animal health technology students receive instruction, conduct research, and perform field service investigations at the accredited facility.

Ten miles east of campus, on Kentucky Lake, is the Hancock Biological Station (HBS), one of the finest centers of its kind in the Midwest. HBS is the field research home for the Center of Excellence for Reservoir Research and the Ecological Consortium of Mid-America; its facilities (including housing) are available year-round to ecosystem scientists.

Murray State University has a commitment to extend its educational programs throughout the region. Off-campus courses are available at a number of sites including Paducah, Fort Campbell, Henderson, Hopkinsville, and Madisonville. In addition to teaching courses on-site at these locations, the university provides a variety of distance learning alternatives for students who may not be able to attend classes on the main campus, including Internet courses, interactive television courses, correspondence study, and Kentucky Educational Television telecourses.

The international dimension of the university's offerings has been dramatically broadened in recent years. In addition to summer study-abroad programs in several countries, direct

exchange programs have been developed for students and faculty with universities on five continents — Africa, Asia, Australia, Central America, and Europe. On campus, the English Language Institute prepares nonnative speakers of English for full-time study and for future professional careers.

In its ninth decade of service, Murray State University's mission focuses on undergraduate, graduate and professional instruction, and continuing education programs as well as enhancement of the educational, economic, and cultural opportunities of the people of west Kentucky.

Visiting the Campus

Visitors are enthusiastically welcomed at Murray State. They are encouraged to tour the campus, visit the residence halls, and talk with faculty members and students. Overnight accommodations, special tours, or specific appointments with faculty or administrators may be arranged by calling the School Relations Office at **1-800-272-4MSU**. Correspondence may be mailed to the School Relations Office, Murray State University, 500 Sparks Hall, Murray KY 42071-3312. During the fall and spring semesters, office hours Monday through Friday are 8:00 a.m. to 4:30 p.m., and on selected Saturdays, 9:00 a.m. to 12:00 noon. During the summer sessions, office hours vary.

Mission

The following mission statement was adopted by the Murray State University Board of Regents on September 26, 2003.

Murray State University serves as a nationally recognized residential comprehensive university, offering high-quality baccalaureate and master's degree programs. Academic programs are offered in the core areas of arts and sciences, agriculture, business, health and human services, teacher education, communications, engineering, and applied technologies. Teaching, research, and service excellence are core values and guiding principles that promote economic development and the well-being of the citizens of the Commonwealth of Kentucky and the region.

Murray State University places a high premium on academic outreach, collaborative relationships with alumni, the public schools, business and industry, governmental agencies, and other colleges and universities at home and abroad.

Murray State University prepares graduates to function in a culturally diverse, technologically oriented society and increasingly interdependent world. The university is committed to international education as an integral dimension of the university experience.

Murray State University emphasizes student-centered learning and educational experiences that include first year experience, the honors program, internships, study-abroad programs, service learning, research and creative projects, residential colleges, and student organizations.

In sum, Murray State University fosters an exciting and challenging learning environment.

Values

• *Accessibility*

Murray State values broad, equal, and affordable educational access for all.

• *Academic Freedom*

Murray State values the generation and free exchange of ideas in a peaceful and orderly environment that encourages communication and the resolution of differences.

• *Accountability*

Murray State values a comprehensive accountability system through outcomes assessment and institutional effectiveness, supporting our primary mission as a university.

• *Diversity*

Murray State values attracting, developing, and maintaining a diverse, high-quality faculty, staff, and student body.

• *Excellence*

Murray State values a sustained commitment to teaching, research, and service excellence.

• *Integrity*

Murray State values an environment that demands high levels of professional and academic ethics.

• *Nurturing Environment*

Murray State values a safe, friendly, and supportive campus and community environment.

• *Shared Governance*

Murray State values a culture of shared governance, open communication, and understanding among administration, faculty, staff, and students.

• *Student-Centered Learning*

Murray State values an environment that fosters the engagement of the student in the learning process both in and beyond the classroom.

Characteristics of the Murray State University Graduate

The excellence of a university's academic programs is ultimately best demonstrated by the qualities, characteristics, and performance of its graduates. Murray State University sets as its goal an academic experience that ensures graduates who:

·Engage in mature, independent, and creative thought and express that thought effectively in oral and written communication;

·Understand and apply the critical and scientific methodologies that academic disciplines employ to discover knowledge and ascertain its validity;

·Apply sound standards of information gathering, analysis, and evaluation to reach logical decisions;

·Understand the roles and applications of science and technology in the solution of the problems of a changing world;

·Demonstrate a critical understanding of the world's historical, literary, philosophical, and artistic traditions;

·Understand the dynamics of cultural diversity, of competing economic and political systems, and of complex moral and ethical issues;

·Understand the importance of and engage in ethical behavior and responsible citizenship;

·Understand the importance of the behaviors necessary to maintain a healthy lifestyle;

·Demonstrate mastery of a chosen field of study, and

·Value intellectual pursuit and continuous learning in a changing world.

Organization of the University

The government of the university is vested in the Board of Regents of Murray State University, a corporate body established by statute and enjoying all immunities, rights, privileges and franchises of an educational governing body.

The president serves as the chief executive officer of the university and as such is ultimately responsible to the Board of Regents for all matters pertaining to the institution. The president reports directly to the board.

Following the organizational structure established by the Board of Regents, responsibility for most operational units of the university is divided among four executive officers who report to the president: the provost and vice president for academic affairs, the vice president for student affairs, the vice president for administrative services, and the vice president for institutional advancement. These four vice presidents serve as the president's management team, advising the president on the operation of the university, making recommendations on the establishment of administrative policy, and executing responsibilities, both individually and collectively, within the university governance system. The provost and vice president for academic affairs is the senior vice president.

Academic Units

Murray State University is comprised of five colleges and one school. The colleges are Business and Public Affairs, Education, Health Sciences and Human Services, Humanities and Fine Arts, and Science, Engineering and Technology. The School of Agriculture completes the academic structure. Each college offers a unique program of human endeavor with interdisciplinary study among the colleges to provide students with broad educational perspectives.

The College of Business and Public Affairs offers graduate programs in accounting, business administration, economics, information systems, mass communications, organizational communication, and telecommunications systems management.

The College of Education offers graduate programs in early elementary education, middle school education, secondary education, school administration, guidance and counseling, human development and leadership, career and technical education, reading and writing, and special education.

The College of Health Sciences and Human Services offers graduate programs in nursing, occupational safety and health, and speech-language pathology.

The College of Humanities and Fine Arts offers graduate programs in English, history, music education, clinical psychology, general psychology, public administration, and teaching English to speakers of other languages.

The College of Science, Engineering and Technology offers graduate programs in biology, chemistry, geosciences, management of technology, mathematics, telecommunications systems management, and water science.

A Master of Science in Agriculture is offered by the School of Agriculture.

Murray State University maintains high academic standards in a wide variety of programs, offers close student/faculty relationships, and provides career and job placement counseling.

Graduate Administration and Organization

Graduate programs are under the administration of the president of the university, the provost and vice president for academic affairs, the coordinator of graduate studies, the deans and graduate coordinators of the colleges and departments, and the Graduate Studies Committee of the Academic Council.

Review and supervision of all graduate programs are administered by the provost and vice president for academic affairs through the coordinator of graduate studies. Collegiate graduate coordinators assign students to advisors or advisory committees.

Graduate student representatives from each college serve on a graduate advisory committee convened by the coordinator of

graduate studies to discuss and make recommendations about issues of graduate education at Murray State. Two members of the committee are elected to represent graduate students on the Academic Council, which also includes members from academic administration, faculty senate, collegiate faculty, libraries, extended education, and undergraduate students.

Graduate Degrees Conferred

Graduate degrees conferred by Murray State University are:

- Master of Arts (M.A.) in clinical psychology; English; general psychology; geosciences; history; mass communications; mathematics; organizational communication; and teaching English to speakers of other languages;
- Master of Arts in Education (M.A.Ed.) in early elementary education; guidance and counseling; middle school education; reading and writing; school administration; secondary education; and special education;
- Master of Arts in Teaching (M.A.T.) in mathematics;
- Master of Fine Arts (M.F.A.) in creative writing;
- Master of Business Administration (M.B.A.);
- Master of Music Education (M.M.E.);
- Master of Professional Accountancy (M.P.Ac.);
- Master of Public Administration (M.P.A.);
- Master of Science (M.S.) in agriculture; biology; career and technical education; chemistry; clinical psychology; economics; general psychology; geosciences; human development and leadership; information systems; management of technology; mass communications; mathematics; occupational safety and health; organizational communication; speech-language pathology; telecommunications systems management; and water science.
- Master of Science in Nursing (M.S.N.);
- Specialist in Education (Ed.S.) in early elementary education; guidance and counseling; middle school education; school administration; and secondary education.

Courses are also offered leading to the Doctor of Philosophy (Ph.D.) in biology in cooperation with the University of Louisville.

University Libraries

The university libraries – the Harry Lee Waterfield Library and Forrest C. Pogue Library – contain over 991,000 resource materials, including 505,960 bound volumes and 1,644 current subscriptions.

The Waterfield Library houses the entire circulating collection, reference sources, government documents, microforms, and periodicals. All of the libraries' holdings are listed in the online catalog "Racertrac". The libraries also provide access to numerous electronic resources and databases through the libraries' website and the "Library on Blackboard" interface. A centralized interlibrary loan service for faculty and students is maintained for the borrowing of research materials from other libraries. Photocopying services are available for self-service use at a minimum rate. Informal and formal seating areas allow for a diversified study atmosphere.

The Forrest C. Pogue Library houses special collections and the law library. Holdings include books, periodicals, newspapers, state documents, manuscripts, rare books, prints and paintings, tape recordings, maps, and microforms. Noteworthy are collections of TVA materials, Civil War materials, political papers of Harry Lee Waterfield, Robert A. Everett, Noble J. Gregory, Edward T. Breathitt, and Frank Albert Stubblefield, and materi-

als relating to Kentucky authors Irvin S. Cobb and Jesse Stuart. The *Forrest C. Pogue War and Diplomacy Collection* consists of personal papers, books and other materials donated by noted historian and Murray State University graduate Dr. Forrest C. Pogue. The James O. Overby Law Library, located on the lower level of the Pogue Library, consists of basic legal materials governing the United States and selected individual states. Included are codes, statutes, digests, reports, debates, citations, regulations, encyclopedias, dictionaries, forms, and standard treatise works covering major areas of law.

Instruction in the Use of Library Resources. For students who desire directed instruction, Library Research for Information Literacy (LOR 101) is taught by library faculty. This two-credit-hour course is taught in multiple sections each eight-week session in the fall and spring.

International Student Services

International students are welcome at Murray State University. Currently, the university enrolls more than 300 students from over 50 countries throughout the world. Two full-time advisors are available at the Institute for International Studies to assist international students with their special concerns. The international student advisors provide orientation, acculturation, and immigration workshops and classes, help students adjust to life on campus and in the U.S., and are Designated School Officials and Alternate Responsible Officers for all student immigration matters.

International students are required to show proof of English ability by providing a recent official TOEFL score. International students who do not provide a TOEFL score that meets the admission requirements of the program they are applying for will be referred to our intensive English program to apply and gain the English proficiency necessary to enter their chosen university program. This program also has a full time advisor and fully qualified professional staff.

International students who are unsure of whom to contact for help with personal, employment, immigration or academic concerns will receive assistance at the Institute for International Studies, 165 Woods Hall, telephone 270-809-4152 or by email at: <iis@murraystate.edu>.

Institute for International Studies. The Institute for International Studies (IIS) was designated in 1998 for the unified coordination of international programs and activities at Murray State University. Evolving from the separately created Center for International Programs (1981) and the English Language Institute (1993), IIS supports Murray State's commitment to international education as an integral dimension of the university experience. IIS provides the following services to students, faculty and the community:

- **Assistance to International Students and Scholars.** The International Student Advisor(s) provide assistance in addressing the academic, personal, intercultural, and immigration needs of international students. Additionally, IIS provides students, research scholars and visiting faculty with orientation programs, immigration advising; and cultural enrichment activities. International students have also organized to offer an active, caring community of support for both degree and ESL students.
- **Information Clearinghouse.** The institute maintains a library of materials on study, work, research, teaching and travel abroad. IIS publishes brochures and announcements of study and teaching abroad opportunities, and newsletters on international programs. An international speakers bureau serves as a resource to regional public schools in support of

KERA, while events are publicized by press releases and the web site's calendar.

- **Special Program Development.** IIS is involved in initiating special programs with an international emphasis. Internal and external groups can work to develop programs to support their specific interests. These have ranged from lecture series to longer curricular programs designed for language study, ESL training, or professional development emphasizing administration, education, training, and other topics.
- **Curriculum Support.** The university has also developed and refined a Global Studies curriculum on campus, initiated an English-as-a-Second-Language Program, created professional development seminars abroad, supported the development of a graduate TESOL program, and worked toward the creation of degree programs abroad.
- **English-as-a-Second Language Program.** The ESL Program prepares nonnative speakers of English for full-time study at Murray State or other North American schools. Through careful assessment, intensive instruction, and out-of-class activities such as field trips, seminars, and a mentoring program, international students receive the personal attention they need to advance their English skills. For more information, see the section on International Student Admission in Chapter 2.
- **Study Abroad.** Through IIS, Murray State University maintains cooperative agreements with institutions in 10 countries as well as consortial membership with five organizations, which provide international experience and education for its students. Each year, through these various venues, MSU students may select from over 50 study abroad program sites. Because new programs are always being reviewed and added, students interested in study abroad may inquire at any time at IIS for information (169 Woods Hall), or they may visit the Study Abroad Resource Center (171 Woods Hall) at their leisure.

Exchange Programs are available through the Institute for International Studies. These programs offer students the ability to be more fully integrated into a university overseas, taking courses taught by the natives, adjusting to a new university system, and living with people of multiple cultures.

Cooperative Center for Study Abroad (CCSA). As a member of CCSA, MSU provides several options for study in English-speaking countries including winter break, summer, and fall semester programs. These programs involve formal academic coursework, excursions and independent travel.

International Business Seminars (IBS). Business students may participate in one of several multi-country business seminars in Europe. The seminars, offered during winter and summer academic breaks, focus on marketing and management for both graduate and undergraduate students.

Kentucky Institute for International Studies (KIIS). Murray State is headquarters of the Kentucky Institute for International Studies. KIIS provides students with several options for study in non-English speaking countries including summer sessions and semester sessions in both the fall and spring. These programs involve formal academic course work, independent study, travel and the option for language study.

AustraLearn. Students can choose from 22 universities in Australia and New Zealand through the AustraLearn program. The academic range of the AustraLearn universities spans the entire MSU curriculum, thus offering at least one option for every MSU student. AustraLearn offers semester or full academic year programs in which students are fully integrated into a university overseas.

Cultural Experiences Abroad (CEA). As a CEA affiliate, MSU students have the opportunity to study for a semester or full academic year in several different countries. Many CEA programs offer intensive language options in addition to courses taught in English. On CEA programs, students are fully integrated into universities and/or language programs overseas.

Student Affairs

The primary concern of Student Affairs is the student. This concern encompasses retention, welfare, and growth and development in all dimensions of student life including educational, vocational, social-cultural, civility and tolerance, psychological, values clarification and physical. Student Affairs provides a variety of educational and administrative services, programs and activities in support of the Strategic Plan of the university. It is committed to excellence in and the integration of curricular and co-curricular activities to ensure a supportive living-learning environment.

Student Affairs offices include Adventures in Math and Science; African-American Student Services/Ethnic Programs; Campus Recreation; Career Services; Counseling and Testing; Curris Center; Educational Talent Search; Enrollment Management; Financial Aid; Food Services; Governor's Minority Student College Preparation Program; Greek Affairs; Health Services; Housing; Judicial Affairs; Recruitment; Student Activities; Student Government; Student Organizations; Student Services for Students with Learning Disabilities; Student Support Services; Undergraduate Admissions, University Scholarships; University Store; Upward Bound; and Veterans Affairs. These units are coordinated through the Office of Student Affairs, located on the first floor of Ordway Hall, 270-809-6831. Students, their families, and the public are encouraged to contact any of these offices for information and assistance with any student-related concern.

•African-American Student Services and Ethnic Programs

The Office of African-American Student Services and Ethnic Programs was established to provide ongoing assistance and support to Murray State's ethnic student population prior to and following their enrollment. The office serves as a clearinghouse, a referral service, and a liaison among administration, academic units, and the community. For additional information contact the Office of African-American Student Services/Ethnic Programs in the Marvin D. Mills Multicultural Center, Room 110B, Curris Center, or call 270-809-6836.

•Career Services

The Career Services office provides Murray State graduate students with a variety of services that are designed to enhance the student's ability to find a career upon graduation. Career Services provides resources for students to investigate cooperative education and internship opportunities that will provide valuable insight into their career path.

Updated information about permanent full-time or part-time jobs are located on the Career Services website in addition to information on the development of the resume, cover letter, and other job search techniques. On-campus interviews are scheduled regularly and career fairs hosting an average of 85 companies each semester are also provided through this office.

For more information, visit the Career Services Office, 210 Ordway Hall or call (270) 809-3735.

•Counseling and Testing Center

Located in the east wing of Ordway Hall, the center has a full-time staff available for educational, career, and personal counseling. Students with concerns of a personal or emotional nature should feel free to contact the Counseling and Testing Center for confidential assistance. Appropriate referrals to additional mental health services will also be provided to students. Counseling and referral services are also extended to faculty and staff through an employee assistance program. Interested faculty and staff should call the Counseling and Testing Center for more information.

A wide range of admissions tests used nationally are available to students through the testing service, as well as appropriate tests to assist students with career exploration and self-understanding. A computer based testing lab is available to students needing to take the GRE and similar graduate admissions and professional qualification tests. The Counseling Center also offers computer-assisted career guidance through the use of the DISCOVER computer system.

•Food Service

Murray State Food Service operates dining facilities on campus, plus University Catering. Winslow Dining Hall and Fast Track are located in the center of the residential hall complex on the north end of campus. The Curris Center is the home of the T'Room (Thoroughbred Room) and other franchise dining options. Two Thoroughbred Cafes have opened on campus, one in Regents College and the other in Hart College. Both cafes proudly brew Starbucks® coffee. Food Service also provides food carts which are located in Waterfield Library, the Business Building, and Faculty Hall. Further information is available from the Racer Card Office on the first floor of the Curris Center, 270-809-3003 or from the food service website: www.murraystate.edu/campus/student_life/food_services/index.htm.

•Health Services

Health Services is located at ground level in the north wing of Wells Hall. The clinic is open for student visits from 8:00 a.m. to 11:30 a.m. and from 1:00 p.m. to 4:00 p.m. on weekdays when classes are in session. However, the clinic is closed after 11:30 a.m. each Wednesday for health education presentations at other sites on campus.

Primary health care is offered on a drop-in basis. Students are screened and assessed by professional nurses. They may be treated by or referred to the physician, depending on the nature of the visit. The local hospital provides physician services on a 24-hour basis for emergencies.

All enrolled students are eligible for free services at the clinic. During the summer, students must be enrolled in the current session to be eligible for services. All services with other health care providers or agencies are at the student's own expense.

•Housing

Residential College System. The residential college system at Murray State University redefines collegiate living and educational experiences for undergraduate students. Every undergraduate student belongs to one of the residential colleges. At the heart of each residential college is the residence hall. The residence hall provides the focal point for all residential college activities.

Each residential college is comprised of students from a variety of academic majors, grade classifications, ethnic backgrounds and extracurricular interests. Residential colleges are

designed to celebrate the rich diversity of Murray State University students, staff and faculty. Each residential college offers a stimulating living-learning environment for students.

Residential colleges provide students with opportunities to interact with faculty on a daily basis outside of the classroom. The small community atmosphere allows students the chance to establish a sense of pride and common purpose. After being assigned to a residential college, students are connected with that community throughout their undergraduate years. Students, staff and faculty establish enduring friendships through the experience. The residential college develops traditions and lasting bonds that remain with students years after graduation.

Murray State has nine residence halls for students, all well equipped. The residence halls house approximately 3,000 students. Each residence hall is equipped with computer rooms or labs, a television lobby, study room, coin-operated laundry facilities, vending machines, and kitchenettes with microwaves.

Students living in residence halls are permitted to have automobiles, and parking is available in areas adjacent to the halls. Individual student rooms are equipped with telephone jacks, two cable outlets, two Internet ports, beds, desks, desk chairs, closet and drawer space. Cable television is available in rooms from the local cable company for an additional charge. Basic cable and Internet access are provided.

The Housing Office staff seeks to make residence hall living a unique experience. Murray State's living and learning program includes academic assistance, counseling, social and educational programs. **The nature and extent of academic assistance and counseling is limited by budgetary constraints, and the university makes no representation as to the success or failure of such efforts.**

College Courts are furnished apartment units available for married, non-traditional, and graduate students, or older students who are 21 years of age by the first day of registration. All apartments are furnished, air-conditioned, and equipped with a telephone jack, two cable outlets, and two Internet ports. Laundry facilities are located in each building. Basic cable and Internet service are provided. Cable television is available from a local cable company for an additional charge. Most units are one-bedroom apartments, though a limited number of two-bedroom apartments are available.

Applications and information concerning the residence halls and apartments may be obtained by writing the Director of Housing, Murray State University, 206 Stewart Stadium, Murray KY 42071.

• **Intracollegiate Sports and Recreation**

A variety of sporting events are programmed by the Campus Recreation Office each year. They range from traditional sports such as football, basketball, softball and soccer to individual activities such as racquetball, tennis and golf. The office is located in the Student Recreation and Wellness Center, 270-809-6791.

• **University Store**

Located in the Curris Center, the University Store is open Monday through Thursday from 8:00 a.m. to 8:00 p.m., Friday from 8:00 a.m. to 9:00 p.m., Saturday from 9:00 a.m. to 9:00 p.m., and Sunday from 1:00 p.m. to 4:00 p.m. During final exams, the store also operates a book buy-back service. School supplies, both new and used textbooks, paperback books, a large selection of bargain books, computer hardware, computer software, commencement caps and gowns, magazines, eight newspapers, novelties, tapes, CDs, greeting cards, souvenirs, softgoods (T-shirts, sweatshirts, jackets and more for adults as

well as a children's line), and personal items can be purchased at the University Store. Visit the University Store or place an order by E-mail or telephone (books@murraystate.edu; 1-800-749-8580).

• **Veterans Affairs**

Veterans Affairs, a unit of Student Affairs, is located in Ordway Hall. The primary mission of the office is to assist the veteran student with the successful transition from military to university campus life. Eligible candidates should contact the office immediately concerning general procedures and documents required to complete enrollment certification with the VA regional office. This will help ensure prompt payment of education benefits.

Veterans under the Vietnam era Montgomery G.I. Bill (Chapter 34) should be aware that this program was terminated on December 31, 1989. Active-duty personnel (Chapter 34) entering the service after June 1, 1988, and those who entered after July 1, 1985, will qualify for educational assistance under the new Montgomery G.I. Bill (Chapter 30). A six-year commitment is required with the National Guard or Selected Reserve for the Montgomery G.I. Bill (Chapter 106). People who have a disability rating will receive funding through the rehabilitation program (Chapter 31). Those who have served between January 1, 1977, and July 1, 1985, and participated in the matching funds program (Chapter 32 VEAP) also have educational benefits. Children, spouses and widow(er)s of veterans who, while serving in the armed forces, were killed on active duty, or have died as a result of a service-connected disability, or are permanently and totally disabled, or were prisoners of war, or are missing in action qualify for benefits under the Survivors' and Dependents' Educational Assistance Program (Chapter 35).

Tuition fees may be waived at any state-supported institution of higher education in Kentucky for those children, spouses and widow(er)s of Kentucky residents who, while serving in the armed forces or the Kentucky National Guard, were killed on active duty, or who have died as a result of a service-connected disability, or who are permanently and totally disabled, or who were prisoners of war, or who have been declared missing in action. Dependents of living qualifying veterans must be between the ages of 17 and 23. Tuition fees are waived for up to 36 months, or until age 23, whichever comes first. Neither the age restriction nor the 36-month limitation applies to dependents of deceased veterans.

For more information on these programs, please visit the Veterans Affairs Office on campus or call 270-809-6837 or 6838.

Other Campus Activities, Organizations and Services

Alumni Activities. Membership privileges of the Murray State University Alumni Association are extended automatically to all graduates and any individual attending MSU for two consecutive semesters who did not graduate. Activities sponsored by the Alumni Association include chapter meetings and receptions, events during Alumni Weekend and Homecoming, and recognition programs such as Distinguished Professor, Golden Horseshoe and Distinguished Alumnus. Affiliated with the Alumni Association is the Student Alumni Association, a service-oriented organization with open membership which provides students an opportunity to make a positive contribution to the university. Inquiries and suggestions are always

welcome. Interested individuals may telephone 270-809-3737 or 3001, or visit the Development and Alumni Affairs Center.

Arts and Cultural Opportunities. Cultural offerings abound on campus and in the community, including art exhibits, concerts, recitals, musical theatre and drama productions as well as lectures, readings and film festivals. The university publishes a calendar of events each semester and weekly events are listed in the *Murray State News*, the campus newspaper. A listing can also be heard by dialing 270-809-ARTS.

Intercollegiate Athletics. Murray State is a charter member of the Ohio Valley Conference and is a Division I member of the National Collegiate Athletic Association. The Racer athletic teams are perennial challengers for major honors in the sponsored nine men's sports and ten women's sports.

Outdoor Recreation. Murray State students can spend many hours in the vast recreational area of Kentucky and Barkley Lakes and the Land Between the Lakes national recreational area, all located within a short drive from campus. Here students enjoy swimming, fishing, water skiing, golfing, camping, horseback riding, hiking and just soaking up the sun on the beaches. The Leisure Connection is a service at Murray State that allows students to check out tents, sleeping bags, stoves, coolers and other recreational equipment at very low rates. Travel information and maps are also available for help in planning a weekend or vacation trip.

Murray State University, its officers, agents and employees disclaim any responsibility for injury to a student engaged in an activity not directly supervised by university personnel, and if supervised, only to the extent permitted by law.

Sport Clubs. The Campus Recreation Office houses the Sport Clubs which include: rugby, soccer, fencing, paintball, cycling, triathlon, tennis, chess, bass anglers, ultimate frisbee, lacrosse, swimming, and women's field hockey.

Murray State University, its officers, agents and employees disclaim any responsibility for injury sustained by a student participating in a sport club unless the sport is directly supervised by university personnel, and then only to the extent of the law.

Sports and Physical Fitness Facilities. Murray State has a great number of facilities to meet the sporting and fitness needs of faculty, staff and students. The newly constructed Susan E. Bauernfeind Student Recreation and Wellness Center includes basketball courts, aerobics studio, free weights, selectorized machines, cardio workout equipment, swimming pool with whirlpool, racquetball courts, walking/jogging track, and a café/lounge with Internet access. A multipurpose room is also available for meetings and classes. In the Carr Health Building/Racer Arena, there are four racquetball courts, three multipurpose gymnasiums, a gymnastics room, an indoor jogging track, a swimming pool, and dressing rooms. Outdoor facilities include four basketball courts, 16 lighted tennis courts, two sand volleyball courts, and numerous athletic fields for team sports. The Regional Special Events Center houses a jogging track and numerous courts for basketball, volleyball, and other indoor activities. The Miller Memorial Golf Course is available to Murray State students, faculty, and staff as well as the community. The Curris Center and Hart Residential College each has fitness centers consisting of cardio-equipment, weight machines and free weights.

Student Organizations. There over 200 student organizations on the campus of Murray State that serves the various needs and interest of our students. Student Organizations is a vital part of our campus life and a great way for students to get involved at Murray State University. The organizations are divided into various categories such as departmental, profes-

sional, sports/recreational, political, religious, service, and honor society organizations. Special qualifications are required for membership in some of the honor societies, professional, and departmental organizations. Eight national social sororities and 13 national fraternities have chapters at Murray State.

For more information on student organizations, see Chapter 1 of the *Undergraduate Bulletin*. A current list of student organizations may be obtained from the Student Organizations Office in the Curris Center, 270-809-6953 or the student organization website.

University Police/Public Safety

Located in the Public Safety and Information Center at the corner of 16th and Olive Streets, the University Police Department makes every reasonable effort to provide emergency assistance, escort services after dark, guest and visitor information, criminal investigations, enforcement of traffic and parking regulations, and lost and found. Public Safety also complies with the Student Right-to-Know Act by making available security policies and campus crime statistics upon request. Public Safety is available 24 hours a day, seven days a week. **Telephone: 270-809-2222. EMERGENCIES: Dial 911.**

Statement on Research Involving Human Subjects

Murray State University faculty and students must adhere to strict rules regarding the use of human subjects in research. All research involving human subjects (including, but not limited to the use of existing records as well as the collection of new data) must be reviewed and approved in advance by the University Institutional Review Board (IRB). Failure to obtain IRB approval or to follow IRB approved research protocols can result in serious penalties as well as restrictions on the use and dissemination of research findings. Faculty and students should consult the *IRB Procedures and Guidelines* for information on this subject.

Policy on Academic Honesty

Cheating, plagiarism (submitting another person's material as one's own), or doing work for another person which will receive academic credit are all impermissible. This includes the use of unauthorized books, notebooks, or other sources in order to secure or give help during an examination; the unauthorized copying of examinations, assignments, reports, or term papers; or the presentation of unacknowledged material as if it were the student's own work. Disciplinary action may be taken beyond the academic discipline administered by the faculty member who teaches the course in which the cheating took place.

Note: *Faculty reserve the right to invalidate any examination or other evaluative measures if substantial evidence exists that the integrity of the examination has been compromised.*

Policy Against Sexual Harassment

It is the policy of Murray State University to maintain the university community as a place of work and study for faculty, staff and students, free from sexual harassment and all forms of sexual intimidation and exploitation. All faculty, staff and students should be aware that the university is concerned and prepared to take action to prevent and correct such behavior, and that individuals who engage in such behavior are subject to discipline.

Behaviors which constitute sexual harassment can be classified in three categories: (1) repeated and unwanted sexual

behavior involving physical contact; (2) verbal comments or suggestions of a sexual nature which adversely affect the working or learning environment; (3) coercive behavior, including suggestions that academic or employment reprisals or rewards will follow the refusal or granting of sexual favors. These constitute gross misconduct and will not be tolerated. In such cases, a single incident would establish grounds for action.

Misconduct involving students in a nonemployment setting is governed by the University Codes of Conduct, and complaints about such behavior should be referred to the Office of Student Affairs. Anyone who is subject to offensive sexual behavior in the employment setting is encouraged to pursue the matter through the Office of Equal Opportunity.

Policy on Attendance

Students are expected to attend all classes in which they are enrolled for credit or audit purposes. An instructor may establish attendance policies for each class so long as they : (1) are clearly published in the course syllabus, (2) distinguish between excused and unexcused absences and (3) are consistent with university policies as outlined in this Bulletin.

Excused absences fall into two broad categories:

1. Absence due to personal illness or death in the immediate family or other extraordinary personal circumstance. Faculty may require appropriate authentication or documentation.

2. Absence due to student participation in a University Sanctioned Event in which the student serves as a representative of the institution.

University Sanctioned Events shall include those officially scheduled activities (practice and training sessions NOT included) related to intercollegiate athletics, performing groups, and teams who represent the university in debate, forensics or other academic competitions. Other activities and events may be added to this listing upon recommendation of the Sanctioned Events Committee and approval by the Provost. This committee shall consist of the Vice President for Student Affairs, the Director of Athletics, the Faculty Senate President, a student appointed by the President of the Student Government Association, and the Provost or his designee. The official list of approved, sanctioned activities and events shall be maintained in the Office of the Provost.

Attendance and participation in class activities is essential to success in college. Absences, for whatever purposes, can potentially undermine the shared goal of student learning. In cases where student absences are clearly unavoidable, it is essential that students and faculty alike approach the resolution of the difficulty with a clear commitment to the mutual goal of student learning.

Responsibilities of Students: Students missing class(es) as a result of activities covered above shall notify the instructor in writing at the beginning of the semester and, in the case of scheduled events, this notification shall not be less than one week prior to the absence. Students with excused absences are excused from class attendance but are not excused from work assigned or expected as a part of that class period. Students, in conjunction with each course instructor, are required to develop a plan for alternative assignments or the make-up of all work missed and must complete this work within a time frame mutually agreed upon with the instructor.

Responsibilities of Faculty: Faculty are expected to plan with students who have excused absences to develop alternatives and make-up assignments. Such alternatives are not expected to diminish faculty expectations of students, nor may they reduce opportunities for students to demonstrate performance.

Responsibilities of Others: Deans and department chairs share the responsibility for insuring proper orientation of all full and part-time faculty regarding the provisions of this policy. Administrators, sponsors and coaches of various student activities share an important role in ensuring that students understand their responsibilities with respect to this aspect of student performance. Specific guidelines and procedures should be developed for each sport or activity to ensure timely communication between students and faculty. Advance lists of varsity/participating students along with schedules of away or off-campus activities or matches should be provided to students so that they, in turn, can share this information with faculty at the beginning of the semester.

Questions and Appeals: In the event of questions or concerns regarding the implementation of this policy in specific classroom situations, students and faculty should be guided by the following:

1. If there is a question regarding whether a specific activity is an officially sanctioned event for which terms of this policy might apply, the inquiry should be addressed to the Office of the Provost.

2. In the event a student is concerned with the implementation of this policy in a specific course, the student should try to resolve the matter by discussing it first with the instructor, then with the department chair, and if resolution is still not reached, then with the collegiate dean. If the matter is not settled through this process, the student may seek resolution through the appropriate collegiate grievance/appeal process.

3. Instances of student abuse or violation of the terms of this policy should be reported to the dean or director responsible for the sanctioned event and to the Vice President for Student Affairs.

Policy on Hazing

Murray State University recognizes that student organizations exist for the purpose of extending opportunities for education, social interaction, leadership and skill development, and personal growth beyond the classroom. Therefore, the practice of hazing pledges, associate members, initiates or members is antithetical to the purposes of registered student organizations at Murray State University and is strictly prohibited by the university. Furthermore, as of July 1986, hazing is a violation of Chapter 164 of Kentucky Revised Statutes. In pertinent part, the statute reads as follows:

“(This statute) prohibits any action or situation which recklessly or intentionally endangers mental or physical health or involves the forced consumption of liquor or drugs for the purpose of initiation or affiliation with any organization. . . . In the case of a student or faculty violator, (violation of this statute shall result in) his suspension, expulsion, or other appropriate disciplinary action and, in the case of an organization which authorizes such conduct, (violation shall result in) rescission of permission for that organization to operate on campus property. Such penalties shall be in addition to any penalty pursuant to the penal law or any other chapter (of Kentucky Revised Statutes) to which a violator or organization may be subject.”

Specifically, on the campus of Murray State University, hazing is defined as any on-campus or off-campus activity which results in mental or physical harassment, humiliation, degradation, ridicule, shock, endangerment, physical disfigurement, excessive fatigue, danger to health, or the involuntary consumption of alcohol or drugs.

This prohibition against hazing applies equally to student organizations, individual students, faculty, and staff members, visitors to the campus, and licensees and invitees on the campus.

Any student who participates in hazing as defined above has violated the Murray State University Code of Conduct and will be subject to disciplinary action as described in the Standards in Disciplinary Proceedings of the Student Life Policies. Any organization which authorizes or permits hazing to occur has violated the policy statement on Regulation of Student Groups and will be subject to group disciplinary action as outlined in that policy.

Policy on Intolerance

The university is committed to creating an educational environment which is free from intolerance directed toward individuals or groups and strives to create and maintain an environment that fosters respect for others. As an educational institution, the university has a mandate to address problems of a society deeply ingrained with bias and prejudice. Toward that end, the university provides educational programs and activities to create an environment in which diversity and understanding of other cultures are valued.

Intolerance refers to an attitude, feeling or belief wherein an individual shows contempt for other individuals or groups based on characteristics such as race, color, national origin, gender, sexual orientation or political or religious belief.

Actions motivated by intolerance violate the principles upon which American society is built and serve to destroy the fabric of the society we share. Such actions do untold and unjust harm to those who experience this kind of discrimination and threaten the reputation of the university.

The expression of diverse views and opinions is encouraged in the university community. Further, the First Amendment of the United States Constitution assures the right of free expression. In a community which recognizes the rights of its members to hold divergent views and to express those views, sometimes ideas are expressed which are contrary to university values and objectives. Nevertheless, the university cannot impose disciplinary sanctions upon such expression when it is otherwise in compliance with university regulations.

When any violation of a university policy, rule or regulation is motivated by intolerance toward an individual or group based on characteristics such as race, color, national origin, gender, sexual orientation or political or religious beliefs, the sanction will be increased in severity and may include separation from the university.

Policy on Racial Harassment

It is the policy of Murray State University to conduct and provide programs, activities and services to students, faculty and staff in an atmosphere free from racial harassment. Racial harassment is any behavior that would verbally or physically threaten, torment, badger, heckle or persecute an individual because of his/her race. Isolated instances of misconduct, although never condoned, do not necessarily constitute racial harassment, nor a hostile environment.

Racial harassment of university faculty, staff, students or visitors is prohibited and shall subject the offender to appropriate disciplinary action ranging from disciplinary warning to expulsion.

The administration has an open-door policy for any student who feels he or she has been subjected to racial harassment or discrimination. Students are urged to contact the Office of Stu-

dent Affairs, Ordway Hall, in the event that racial harassment arises outside of the employment setting. All others should contact the Office of Equal Opportunity, Wells Hall.

Policy on Use of University Facilities

The intent of this policy is to permit appropriate use of university facilities. Murray State University is committed to both the practice and the philosophy of equal opportunity. The principles contained in these guidelines will be followed without regard to and in a non-discriminatory manner as to race, religion, and/or political affiliation. The guidelines shall also be applicable to all faculty, staff, students, and non-university persons or groups. In addition, persons who are not students or employees of the university are expected, while on university property, to adhere to the standards of usage and conduct applicable to faculty, staff, and students. The facilities of the university shall mean buildings and structures, land, equipment, utilities, walks, streets and recreational areas. The following applies to all university facilities.

The basic requisite for granting the use of university facilities is relevancy to the educational purpose as determined by the university. Facilities may be used for non-educational activities when it is considered to be in the best interest of the university. However, the university reserves the right to make final determination as to the true educational value or appropriateness of the event being scheduled and whether or not the university will make its facilities available. University facilities may not be used for non-educational programs unrelated to the university when adequate private facilities are available. Generally speaking, facilities will be made available on a "first come, first served" basis.

The order of classification of requesting groups will be determined by the university. The order of classification to be followed in scheduling facilities is as follows:

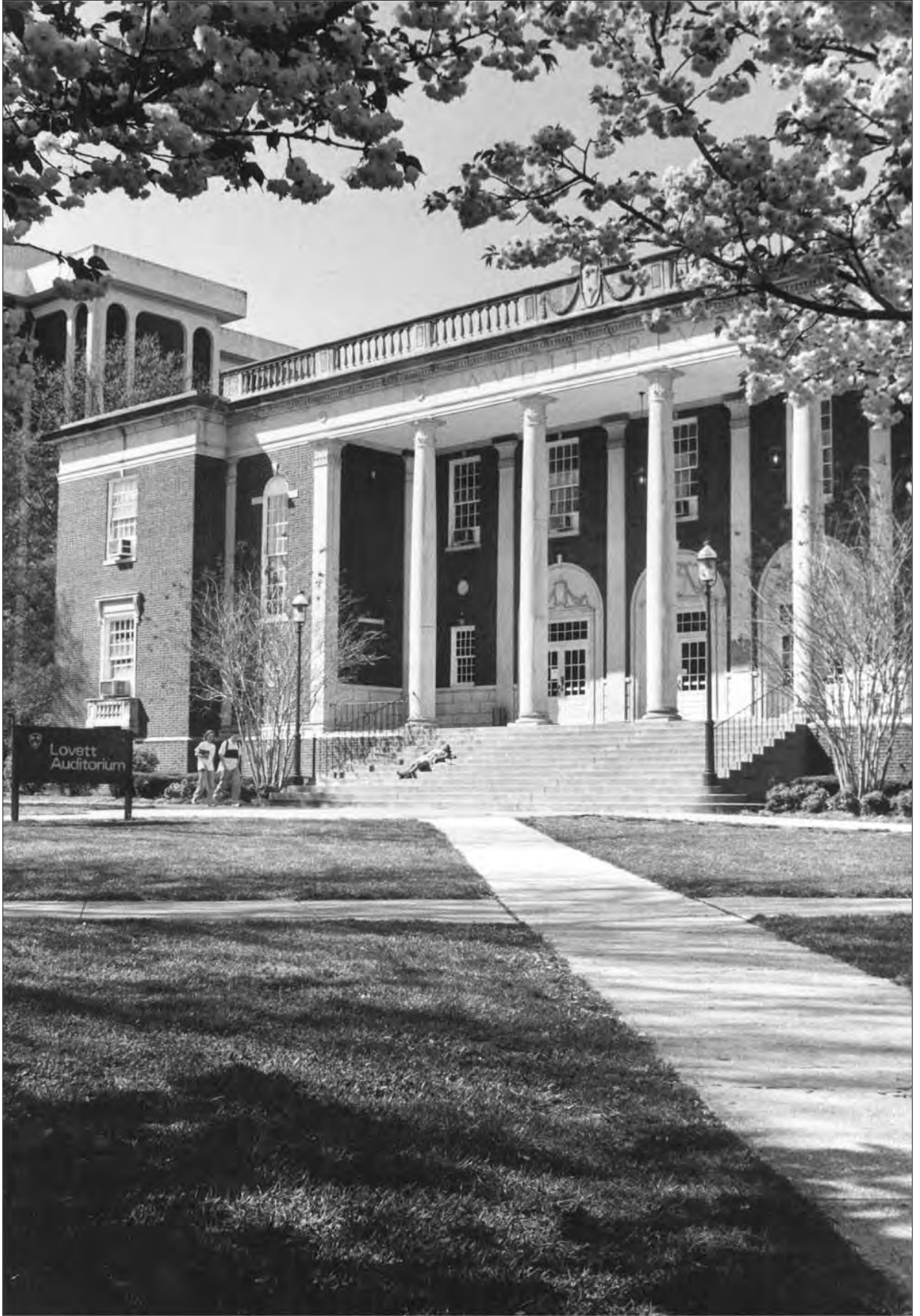
- (a) academic departments, administrative departments and registered student organizations scheduling non-revenue-producing¹ programs, except grant programs that are funded for facility expense;
- (b) academic departments, administrative departments and registered student organizations scheduling facilities for university-sponsored, revenue-producing¹ programs (requests must be approved by appropriate dean, vice-president, department chairman, director or organization advisor);
- (c) university faculty, staff or students scheduling facilities for non-university-sponsored, revenue-producing¹ programs;
- (d) non-university groups requesting facilities for non-revenue-producing programs;
- (e) non-university groups scheduling facilities for revenue-producing¹ groups.

Only registered organizations are eligible to schedule university facilities. A non-registered group may schedule a meeting for the purpose of organization. Additional meetings or functions shall not be allowed until the group has registered with the Office of Student Activities.

Minimal charges are necessary to offset operational care of facilities. In addition, any additional necessary charges are the responsibility of the individual or group using the facility.

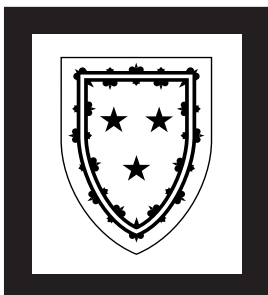
Guidelines for the use of university facilities, schedule of rental charges and appropriate applications are available from the Scheduling Coordinator, Administrative Services, General Services Building.

¹Revenue-producing shall include any program having entrance fees or generating income. Any event at which voluntary offerings are collected shall be considered revenue-producing.



Admission and Registration

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Admission and Registration

1st Floor, Sparks Hall
(800) 272-4678 ext. 2 or (270) 809-3779 or 3756
graduateadmissions@murraystate.edu
registrar@murraystate.edu
registration@murraystate.edu

Murray State University reserves the right to modify regulations regarding admission, registration, drop/add, course arrangements, curricula, retention, graduation and other functions of the university. Such regulations shall govern both old and new students and are effective when adopted.

Graduate Admission Standards

Although the student advising program at Murray State University is specifically designed to assist students as they progress through degree programs, **it is the responsibility of all students to be thoroughly familiar with rules, regulations, and requirements that apply to their programs of study.**

In addition to a baccalaureate degree from a regionally accredited institution, an applicant must satisfy the admission standards and prerequisites of the department and college in which the applicant plans to study. Prerequisites and requirements for specific degrees will be found in the appropriate departmental sections of this bulletin.

Admission Processes

Requests for admission to graduate study at Murray State University should be addressed to Graduate Admissions, Sparks Hall, Murray State University, 113 Sparks Hall, Murray KY 42071-3312. Applicants must submit an admission application and the \$30 nonrefundable application fee. **A graduate student may be required to submit a new application for admission if the level of program or graduate field change, or if the student does not enroll for a period of five or more semesters. Under the requirements of 12KAR2:045 as cited later in this chapter, review of residency for tuition purposes is a required part of the admission/readmission process. Documents to verify residency may be requested by Graduate Admissions for residents of IL, IN, KY, MO, and TN, and must be provided before the beginning of the term for which the applicant seeks admission.**

Official transcripts reflecting all previous college credit should be forwarded to Graduate Admissions of Murray State University by the registrar(s) of the school(s) the applicant attended. In the event the student attended more than one college, an official transcript must be sent from each college. These credentials should be on file in Graduate Admissions not later than one month prior to the date the applicant expects to register.

Following the receipt of all required credentials, materials will be forwarded for departmental approval. After departmental review, the applicant will be sent an official letter indicating admission status.

Admission to graduate study is not admission to candidacy. Admission to candidacy is a deliberate action of the student's advisor, the dean of the student's college, and the vice president for academic affairs.

The following standards represent minimum campus-wide requirements. Higher minimum standards for grade point average (GPA) and Graduate Record Examination (GRE) may be set by individual departments or colleges. In lieu of the GRE, some units may select other nationally recognized tests that are more appropriate to their disciplines. Detailed information about any program-specific admission requirements beyond these campus-wide requirements is provided in the individual program listings.

Unconditional Admission

Minimum university requirements for unconditional admission are an overall 2.75 grade point average (based on *A* equals 4.0). Some degree programs have additional requirements for unconditional admission. Refer to the program listings for additional information.

Conditional Admission

Conditional admission may be granted to a student with an overall grade point average between 2.25 and 2.74. Conditional admission may also be granted to a student with an overall grade point average of 2.0 to 2.24 if the college's review of the student's record indicates the likelihood of success. Some degree programs have additional requirements for conditional admission. Refer to the appropriate chapter in this bulletin for requirements relating to specific degrees.

Upon the completion of nine hours of graduate work a student admitted conditionally must have a 3.0 grade point average, or the student will be dropped from the graduate program. A graduate student dropped for failure to meet this requirement may reapply after having been out of the graduate program for one semester.

Any exceptions to this policy must be approved in writing by the departmental graduate coordinator, the department chair, and the collegiate graduate coordinator.

Unclassified Admission

An applicant holding a baccalaureate degree from a regionally accredited institution may be admitted as an unclassified graduate student if:

1. the student demonstrates promise but is not qualified for admission to a graduate program;
2. the student does not intend to complete a degree program at Murray State University;
3. the student has no degree objective; or
4. the student has files that are incomplete and cannot be processed for either conditional or unconditional admission.

Summary of GPA and GRE Admission Requirements by Program

The chart below summarizes only the Grade Point Average (GPA) and Graduate Record Examination (GRE) or Graduate Management Admissions Test (GMAT) requirements *that vary from the university minimums*. See program-specific admission requirements.

Graduate Program	Unconditional Admission	Conditional Admission
Agriculture	3.0 GPA in last 60 hours	2.5 GPA or a GPA of 3.0 in the last 60 hours of undergraduate work
Biology	GRE \geq 1000 (V+Q)	
Business Administration (MBA)	(GPA x 200) + GMAT \geq 1000 or (GPA x 200) + GRE \geq 1400	2.75 GPA or a GPA of 3.0 in the last 60 hours of undergraduate work
Clinical Psychology	3.0 GPA in undergraduate psychology courses	
Communication Disorders	3.0 GPA; 800 GRE (V+Q)	
Community Counseling	700 GRE (V+Q)	
Director of Pupil Personnel	700 GRE (V+Q), valid teaching certification	
Director of Special Education	700 GRE (V+Q), special education or school psychology certification; 1 year experience as special educator	
Economics	2.5 GPA	
Elementary Education	3.0 GPA; Teacher certification at elementary school level	2.5 GPA; valid teaching certificate
English	3.0 GPA	
Environmental Education Endorsement	Valid teaching certification or permission from EE program director	
General Psychology	15 hours in psychology; 3.0 GPA	
Geosciences	3.0 GPA	
Gifted Education Endorsement	Valid teaching certificate for elementary, middle, or high school level; 1 year teaching experience	
History	3.0 GPA; 900 GRE (V+Q)	
Information Systems	3.0 GPA; GMAT \geq 500 or GRE \geq 900	
Individual Intellectual Assessment	School counselor certificate in Kentucky; certified and practicing school counselor	
Instructional Computer Technology Endorsement	Valid teaching certificate; 1 year teaching experience	
Interdisciplinary Early Childhood Education	3.0 GPA	2.5 GPA
Management of Technology	2.75 GPA	3.0 GPA after first 9 hours
Mass Communications	2.75 GPA	2.5 GPA
Mathematics	3.0 GPA in all mathematics courses beginning with MAT 309 or equivalent	
Middle School Education	3.0 GPA; teacher certification at middle school level	2.5 GPA
Music Education	Teacher certification	
Nursing	BSN; 3.0 GPA	
Nutrition/Registered Dietitian	2.75 GPA in last 65 undergraduate hours; 2.5 GPA in science related courses; 800 GRE (V+Q)	
Occupational Safety and Health	3.0 GPA	
Organizational Communication	3.0 GPA	2.5 GPA
Pre-K -12 Principal	700 GRE (V+Q); valid teaching certification	
Public Administration	2.75 GPA	2.25 GPA
Reading/Writing	3.0 GPA; teaching certification or consent of the program director	2.5 GPA
School Administration (Masters)	3.0 GPA; 800 GRE (V+Q)	2.5 GPA
School Administration (Specialist)	900 GRE (V+Q); valid teaching certification	
School Counseling	3.0 GPA; GRE 800 (V+Q)	2.5 GPA
School Psychology (6th Year)	GRE \geq 400V + 400Q = 800; Masters in related field	2.5 GPA; Masters in related field
School Safety Endorsement	Valid teaching certification	2.5 GPA
School Superintendent	2 years successful administration experience; valid teaching certification	
Secondary Education	3.0 GPA; certification at secondary school level school level	2.5 GPA; certification at secondary school level
Special Education	3.0 GPA; valid teaching certification	2.5 GPA; valid teaching certification
Supervision of Instruction	700 GRE (V+Q), valid teaching certification	
Telecommunications Systems Management	(GPA x 200) + GMAT \geq 1000 or (GPA x 200) + GRE \geq 1400	2.75 GPA, or a GPA of 3.0 in the last 60 hours of undergraduate work
Water Science	3.0 GPA; GRE \geq 1000 (500V + 500Q)	

Admission and Registration

•Regulations Governing Unclassified Admission

1. A student whose files are incomplete as specified in point 4 above would have one month from the date of enrollment to complete the files and change to a degree status.
2. Students with incomplete files will be restricted to one-term enrollment only.
3. Up to 12 hours earned as an unclassified graduate student may be applied to a degree if approved by the appropriate graduate advisor.
4. Unclassified graduate students will pay graduate fees for all courses.
5. An unclassified graduate student is allowed to take no more than *12 hours per semester*.

Non-Degree Graduate Admission

An applicant holding a baccalaureate degree from a regionally accredited institution may be admitted as a non-degree graduate student. An official transcript reflecting all previous college credit should be forwarded to Graduate Admissions at Murray State University by the registrar(s) of the school(s) the student attended. An undergraduate GPA of 2.75 is required for admission as a non-degree student.

Graduates of Nonaccredited Institutions

An applicant with an undergraduate degree from an institution not regionally accredited may enter an MSU graduate program if the applicant meets the following requirements:

1. A score of 850 on the aptitude portion (V+Q) of the Graduate Record Examination (GRE).
2. Completion of 32 hours of undergraduate course credit at MSU or a regionally accredited institution which fulfill the following categories (as listed in the *MSU Undergraduate Bulletin*):

A. Communication and Basic Skills	(6 hrs)
B. Sciences and Mathematics	(8 hrs)
C. Humanities and Fine Arts	(6 hrs)
D. Social Sciences	(6 hrs)
E. Electives	(6 hrs)

with a GPA for the 32 hours of 2.5 or better.

3. Any additional requirements of the department in which the student will do graduate work.

An applicant with an undergraduate degree from an institution not regionally accredited, who has completed fewer than nine graduate hours at an accredited institution, must fulfill the requirements of this policy. After the student's admission to a graduate program at MSU, the graduate hours earned previously will be evaluated by the student's graduate department for transfer credit.

Early Admission of Seniors

Seniors at Murray State University who are within nine hours of completing the baccalaureate degree, who have a cumulative grade point average (GPA) of at least 3.0, and are meeting all undergraduate GPA requirements, may be admitted to graduate study provided they meet departmental and general admission requirements. Seniors admitted on this basis are considered graduate students, and they will be charged graduate tuition for all courses scheduled. **Note: This type of admission may cause problems with financial aid.**

Seniors enrolled at institutions other than MSU who meet the requirements outlined above may petition the Graduate Admissions Office for early admission.

Students who fail to complete all undergraduate requirements during their first semester as graduate students *will be denied graduate credit*. All courses taken during that term will be permanently recorded as undergraduate, with no refund of graduate tuition. Early admission graduate students may apply for graduate assistantships, however these students are not eligible for graduate teaching assistantships.

Visiting Students

Any student in good standing in a recognized graduate school may enroll for graduate study at Murray State University for either a summer session or one regular semester as a visiting student.

A visiting student is not required to submit an official transcript, but must secure a visiting student form from Graduate Admissions of Murray State University. This form must be completed by the appropriate official of the student's college/university and forwarded to MSU Graduate Admissions. A visiting student who elects further graduate study at Murray State University must either fulfill all requirements for admission to graduate study or have a new visiting student form submitted by the student's "home" graduate school.

Scholastic Probation

When students have completed nine or more semester hours of graduate course work with a grade point average of less than 3.0, they will be placed on scholastic probation and are subject to dismissal from their programs. Students placed on academic probation will have a probation hold on their ability to schedule for classes until the student meets with his or her advisor. Students should check their PIN accounts for holds.

Students will have one full-time semester or the equivalent (nine hours) to remove the scholastic probation by attaining a 3.0 cumulative average. If probation is not removed, students will be dismissed from graduate classification.

Students who have been dismissed for these reasons may apply for readmission to the graduate program after two semesters or one semester and the ten-week summer term.

These are the minimum university regulations governing scholastic probation for graduate students. Each college may set additional requirements for scholastic probation in its graduate programs.

International Student Admission

In addition to meeting departmental, collegiate, and general graduate study requirements, an international student must submit the following to International Admissions before an admission decision can be made:

1. A completed application for admission, including the nonrefundable application fee of \$30 (US).
2. Official transcripts reflecting all previous college credit should be forwarded to Graduate Admissions at Murray State University by the issuing officer (e.g. Registrar, Controller of Examinations) of each school the applicant attended. An official copy of the diploma or graduation certificate will also be required if a student received a degree and it is not indicated on the official transcript. Copies must be certified by the issuing institution. Copies notarized by a third party will not be accepted. Credentials will be evaluated to determine if the course of study completed is equivalent to a four-year degree.
3. An official translation of any document not originally in English, sent directly from the translator.

4. Proof of adequate funds to finance their entire course of study. A statement of financial responsibility should be sent directly from the person and/or organization providing financial support. In addition, the appropriate documentation to verify that funds are readily available to the student will be required.

5. Proof of English language competency by one of the following:

- a. Official TOEFL score report with acceptable score
- b. Official International English Language Testing System (IELTS) score report with acceptable score
- c. Bachelor's degree from a US or UK institution
- d. Successful completion of MSU's English as a Second Language (ESL) program.

Conditionally admitted students may be assigned to full-time language study in the English as a Second Language (ESL) program or entered into a graduate transition program and permitted to take classes on a conditional basis along with further designated language study, or admitted unconditionally to graduate study if the student meets all other specific program requirements.

A student who has successfully completed the advanced level of the MSU English as a Second Language (ESL) program, and has been certified in English competency by the designated ESL/College Graduate Program Assessment Committee, and met all other specific program requirements will be allowed to enroll in the designated graduate program. Performance in ESL classes, TOEFL scores, and written and oral proficiency in the specific area of graduate study will form the basis for language proficiency assessment.

MINIMUM TEST SCORES

Paper-Based TOEFL

(Please review the *NOTES* below.)

University Admission

500 minimum university requirement

Conditional Admission

499 or below or no score reported

Internet-Based TOEFL

University Admission

	61 total and		
Listening	-and-	Writing	-and-
not <16		not <16	not <16

Conditional Admission

	60 or below or		
Listening	Writing	Reading	or No Score
<16	<16	<16	Reported

IELTS

University Admission

5.0 on Academic Test (with no band <4.5)

Conditional Admission

Below 5.0 on Academic Test or any band <4.5 or no score reported

NOTES: 1) Academic departments may set higher standards and additional requirements for higher minimum TOEFL or IELTS scores than those required by the university. Students must meet the specific language proficiency requirements listed in each respective department's admission requirements of this Graduate Bulletin.

2) Conditional Admission requires completion of MSU's English as a Second Language (ESL) program and achievement of the Institutional TOEFL score required by the applicant's desired program.

3) The Computer-Based TOEFL (cBT) test is no longer available, however scores maintained by ETS will be honored.

Graduate Program

All candidates for the master's degree at Murray State University are required to follow a planned program of graduate study. **Although a student may be required to take pre-requisite courses, only approved courses completed while enrolled as a graduate student may apply toward a graduate program.**

A graduate program form, bearing the name of the student's advisor, will be forwarded with the letter of acceptance to graduate study. The student's advisor should be consulted before or during registration for assistance in planning a program. **During the first nine weeks of the first term enrolled, the student should complete the graduate program form and submit it to the specified advisor, who will secure the required signatures and return the form to Graduate Admissions. To be approved, a program must meet all requirements stipulated in the Graduate Bulletin.**

Any subsequent change in the program must be approved by the student's advisor and the collegiate graduate coordinator. The student and the collegiate graduate coordinator are responsible for notifying Graduate Admissions of the program changes on an **official substitution form**, available from Graduate Admissions.

Advisor

Students are expected to confer regularly with their advisors and plan academic programs prior to the actual time of registration.

Although the student advising program at Murray State University is specifically designed to assist students as they progress through degree programs, it is the responsibility of all students to be thoroughly familiar with rules, regulations and requirements that apply to their programs of study, and decisions made in connection therewith are the sole responsibility of the student.

Personal Information Network (PIN)

Murray State University provides a secure, on-line Personal Information Network (PIN) to current students and faculty. The PIN system provides up-to-date access to students enabling them to view their class schedules, grade reports, account balances, 1098T tax information, student loan notices, contact information, personal information (majors, advisors, residential college, GPA, etc.), and account holds. Students may also use the PIN to request enrollment verification. It is the student's responsibility to check their PIN account regularly and to keep all contact information current. More information can be found on the Registrar's website or by clicking the PIN logo on the www.murraystate.edu home page.

Registration

•Procedures

Registration at Murray State is currently handled through a computerized process that may be accessed via **RACER-TOUCH**, a Touch-Tone telephone system, **at 270-809-3500**. Instructions and a trial schedule form are printed in the *Schedule*

Admission and Registration

of Classes. Murray State is implementing online registration which may effect some procedures. Questions may be directed to Registration at 270-809-3776 or registration@murraystate.edu.

A student should have a graduate advisor's approval of his or her proposed class schedule. **A student with an incomplete admission file, one who has any indebtedness to the university, or one dismissed for academic reasons will not be permitted to register. A student who completes a degree or program who wishes to take additional courses must submit a new application. Contact Graduate Admissions for instructions. Otherwise, to be eligible to register, a graduate student must either have been admitted or readmitted for the term in which he/she wishes to enroll, or must have enrolled as a graduate student at Murray State within the three years preceeding registration.**

Students who wish to take advantage of the main week of pre-scheduling must be admitted by the following deadlines: April 1 for summer and fall terms, and November 1 for the spring term. Those admitted after these dates may schedule during late registration. Reference should be made to the official university calendar for the pre-scheduling dates for currently enrolled students. Those who must register late should follow the instructions printed in the official *Schedule of Classes* (published three times a year under separate cover). Students classified as "graduate" may schedule or register at any time listed in the class schedule. Before a student is considered registered, he/she must be properly enrolled in class and have made payment of required fees. **A student who attends a class without being properly enrolled will not receive credit.**

•Change of Schedule

Any schedule changes should have an advisor's approval. A signature from the instructor of the class is required for those who wish to audit a class. Changes may be made through the drop/add procedure. For changes that do not require special approval, the student should call **RACER-TOUCH at 270-809-3500**. Forms for changes that require special permission should be taken to the registration area indicated in the *Schedule of Classes*. Any additional tuition or course fees may be charged to an acceptable credit or debit card by calling **RACER-TOUCH at 270-809-3500** or may be paid in the Cashier's Office on the second floor of Sparks Hall. Changing a course from CREDIT to AUDIT is done by the drop/add process, but may not be done via **RACER-TOUCH**. Use the audit permission form available in the *Schedule of Classes* or from your advisor. Obtain the required signature of the instructor of each course being audited and submit the form to the Registration Office in Sparks Hall.

Dropping a class before the end of the first drop period will eliminate the course from the student's permanent record. For classes dropped during the second drop period, the student will receive a grade of withdrawn (**W**). Consult the current university calendar for dates and deadlines. (Note: **WP/WE** option is used only for assigning grades to students who completely withdraw from **all** courses after the time during which **W**'s are assigned.) All schedule changes should be verified by the student through the PIN.

•Auditing of Courses

An auditor is one who enrolls and participates in a course without expecting to receive academic credit. The same registration procedure is followed and the same fees are charged as for courses taken for credit. An audited course is not applicable to any degree or certificate program but is included in determin-

ing the student's course load. Audited courses may be repeated for credit. Consult the current University Calendar, published in the *Schedule of Classes*, for dates and deadlines.

Regular class attendance is expected of an auditor. Students interested in auditing a course must secure written permission from the instructor and discuss course requirements prior to enrolling. Failure to meet course requirements may result in the auditor's being withdrawn from the course at the request of the instructor or a failing grade may be assigned. A successful audit will be recorded on the transcript with the designation **AU**.

•Withdrawal from School

Students dropping all classes must contact the Registrar's Office for proper withdrawal procedures. **Students who do not process official withdrawal forms will receive failing grades in all of their courses.** Withdrawal must be completed no later than one week prior to the end of scheduled classes. A withdrawal date only, or a withdrawal date with **W**, **WP** or **WE** grades will be recorded on the student's permanent record in accordance with the dates published in the official *Schedule of Classes*. Refund policies are available from the Bursar's Office or the web. Students may not officially withdraw from a class after the published deadlines. Consult the current University Calendar published in the *Schedule of Classes*, or on the MSU webpage.

•Administrative Withdrawal

Students who fail to meet their obligations to Murray State University, either financial or administrative, may be withdrawn from the university and lose all credit being attempted. Withdrawal of any type does not remove the student's financial obligation to the university.

•Family Educational Rights and Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA), more commonly referred to as the Buckley Amendment, addresses the right of access to educational records. Within 45 days of the initial request and with proper identification, enrolled students have the right to view their educational records. A request for amendment may be made. A request for a hearing about any unresolved issues should be made to the registrar.

A parent who claimed a student on the previous year's tax returns may request permission to view a student's educational records if the parent produces a copy of the previous year's return and sufficient personal identification. A parent of a student under the age of 18 may view the student's educational records upon documenting parentage and providing personal identification.

Educational records at Murray State University may be viewed by university officials with an appropriate need to know, as deemed appropriate by the registrar, and in compliance with FERPA. For this purpose, university officials are defined as the university attorney, all administrators, faculty, staff and student workers in administrative or academic areas.

Copies of FERPA and the university's policy on access are available for viewing on the Registrar's website.

Directory Information. Murray State University considers the following information to be "directory information" as defined in the Family Education Rights and Privacy Act as amended, and may be available for public release at the Registrar's discretion unless the student has indicated that any or all of the items are not to be released: name, addresses (including e-mail), telephone numbers, date of birth, place of birth, fields

of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, degrees and awards received, classification, full/part-time status, dates of attendance, and most recent previous educational institution attended. An enrolled student may register an objection to the release of this information by coming to the Registrar’s Office during the first five days of classes and signing a form. This form must be completed each semester during which an enrolled student wishes that information to be withheld.

If a student requests information withheld during a term and does not return to Murray State after that term, that request remains in force until such time as a formal written statement removing that hold is received from the student.

Name and Address Change. Any student who changes name, social security number, or address is expected to notify both Graduate Admissions and the Registrar’s Office. The student will be held responsible for any communication from any university office sent to the address last given and may not claim indulgence on the plea of having changed lodgings or name and therefore of not having received the communication. The information from a student’s initial admission to the university will remain on the student’s transcript with any changes added to the permanent record when the required legal documents are presented to the Registrar’s Office. Contact the Registrar’s Office for specifics on required documentation. **Changing an address does not change residency for tuition purposes.** Students may check and update their address information via the PIN System, or by signing a request for an update in the office of the Registrar.

Course Numbers

The numbers used to identify courses are as follows:

- 001-089special category post secondary
 - 090-299lower division undergraduate
 - 300-499upper division undergraduate
 - 500-599*upper division undergraduate/graduate
 - 600-799graduate
- (*Requires at least a junior classification-graduate students must complete additional course work to that required of undergraduates. Students desiring graduate credit must be admitted to graduate studies prior to scheduling a 500-level course.)

Course and Policy Changes

The university reserves the right to cancel any course for which there is insufficient enrollment and to make any other needed policy changes or adjustments in the *Bulletin*.

Graduate Assistantships

Graduate teaching and research assistantships are available in most departments for highly qualified graduate students. See Chapter 3 for information on Graduate Assistantships.

Scholarships and Fellowships

Murray State University awards a number of non-need-based scholarships each year to qualified graduate students. Scholarships are supported by the Murray State University Foundation, Development and Alumni Affairs, various academic departments, as well as business and professional organizations. Information and applications for all scholarships are available through at www.murraystate.edu/scholarships.

Qualifications and restrictions are listed by name. In some areas, talent and proficiency are considered as well as academic information.

Generally, scholarships are offered on the basis of scholastic achievement, standardized test scores, character, leadership and the promise of continued educational growth. In some cases, financial need is considered.

Scholarships are available for qualified incoming new freshmen, transfer students, upper-class students, nontraditional students, and graduate students.

The total amount of Murray State scholarship awards for any given student in conjunction with other Murray State tuition adjustments may not exceed a student’s actual cost. No student may exceed the total amount of all aid/resources for any given academic year. Murray State University reserves the right to adjust individual scholarship awards after award letters have been mailed to comply with all state and federal mandates. The Over Award Policy can be found on the University Scholarship Office website.

Scholarship Application Deadline: February 1

Questions may be directed to the Office of University Scholarships at 800-272-4678, ext. 4, or 270-809-3225.

The Graduate Fellowship Program provides ten annual full-tuition fellowships to qualified Kentucky African-American graduate students across all fields at MSU. In addition to tuition, the Minority Graduate Fellowship Program provides the selected students with financial support through a stipend of \$5,000 per academic year. These new fellowships are renewable for a total of four semesters. Guidelines and applications can be found on the MSU graduate webpages.

Financial Aid

Graduate students may apply for the Stafford Loan and the Perkins Student Loan Programs. Part-time employment opportunities under the Federal Work-Study Program and the university’s own Student Employment Program are also available.

Federal regulations state that any student who receives assistance from the Federal Work Study, Stafford Loan and Perkins Student Loan programs will be required to make measurable academic progress toward a degree in order to assure the completion of the degree program within a “reasonable period of time.” For the purposes of financial aid, a student will be permitted a maximum of three academic years for completion of a master’s degree program.

For complete information on financial aid programs for graduate students at Murray State, write the Student Financial Aid Office, B2 Sparks Hall, Murray State University, Murray KY 42071-3312 or call 270-809-2546 or 1-800-272-4678 ext. 3 or visit our website at www.murraystate.edu/sccsv/financial/index.htm or email sfa.office@murraystate.edu.

Costs

A student who is classified as a graduate student will be assessed graduate fees for all courses, whether graduate or undergraduate. All fees, including applicable room and board, must be paid by noon on the due date shown on the semester billing statement (see *Fee Payment* section below). Students who do not make payment of required fees are not registered students. All fees imposed by the university are subject to change without notice by action of the Murray State University Board of Regents.

All accounts owed by a student to the university must be paid in full before the student is entitled to receive a degree, a transcript, a record of grades, schedule classes for preregistration, or to enroll in classes.

Admission and Registration

•Tuition and Registration Fees

Refer to *Costs* on the Murray State University website: www.murraystate.edu/bursar

All students with a valid Racer I.D. card are entitled to admission to athletic events, Student Health Services, the Wellness Center, Murray Civic Music Association performances and certain activities sponsored by the Curris Center.

Tuition is assessed on a per credit hour basis (capped at nine hours) at the same rate listed for part-time students.

•Fee Payment

Payments are due by noon on the due date shown on the semester billing statement. Credit card payments may be made by phone using *RACER-TOUCH* (270-809-3500) or by *Racer Pay* (minimum of two business days to credit to account) at www.murraystate.edu. Other payments may be mailed or made in person at the Cashier's Office, second floor, Sparks Hall. Cash, credit cards (American Express, Discover, MasterCard, VISA) and checks are acceptable methods of payment.

Payment options. Payment arrangements with appropriate payment must be made with the Office of the Bursar when parents and/or students are unable to make payment in full from personal funds by noon on the due date shown on the semester billing statement. Accounts with a balance of \$100 or less are due in full.

Acceptable payment arrangements consist of the following:

- Payment of all fees in full by noon on the due date as published by MSU each semester and as posted on the PIN accounts. Cash, credit cards (American Express, Discover, MasterCard, VISA) and checks are acceptable.
- Enrollment in the Murray State University Payment Plan (MSUPP) with appropriate payment. Note: All financial aid and third-party recipients are required to enroll in the MSUPP. Acceptable third-party agencies are foreign embassies, vocational rehabilitation, Kentucky state agencies, Veterans Affairs, Department of Labor, Fort Campbell, NAFTA, TAA, WIA, Upward Bound, and company direct billing.

Payment must be credited to student's account in order to:

- be officially enrolled at MSU
- have access to *Blackboard*
- have a MSU email account activated.

Late registration fees. The late registration period begins approximately 14 calendar days prior to the first day of classes. (See the official university calendar in the *Schedule of Classes* or at www.murraystate.edu for exact dates.) All current or returning students registering for the semester for the first time during the late registration period will be assessed a late registration fee. Failure to make payment by the published due dates will cause the student's class schedule to be dropped (purged) from the computer system. **Students who elect to reschedule after their original schedules have been officially purged will be assessed a late registration fee. New students will not be assessed a late registration fee during the first term they enroll at MSU.**

•Refunds

Refunds will be made in accordance with the university's official *Schedule of Fees*, refer to the **Proration of Charges** on the Murray State website: www.murraystate.edu/bursar. Any questions concerning refunds should be directed to the Bursar's Office. **All refunds will be made by check and will be mailed to the students at their home addresses.**

Withdrawal. A student who completes official withdrawal

(written clearance through the Registration and Bursar's Offices constitutes completion) or is dismissed will receive a refund of tuition, fees, room and board in accordance with the official *Schedule of Fees*. Students can not withdraw from the University through *RACER-TOUCH*. Students residing in Murray State University residence halls will receive refunds only in the event of withdrawal from school, dismissal or marriage.

Federal Return of Title IV Funds Policy. This policy applies to all students receiving federal loans or grants. For complete information concerning this policy refer to the University Bursar's Office web page under Pro-Ration of Charges.

Dropping Classes. A student who drops through *RACER-TOUCH* may receive a refund of tuition and/or course fee if the student (1) drops below full-time, (2) is part-time and drops a class(es), or (3) is full-time and drops a class with refundable course fee. A student who drops a meal plan will receive a refund. Both types of refund will be in accordance with the dates given in the official *Schedule of Fees*. See the previous paragraph regarding withdrawing from all courses. All schedule changes should be verified by the student through his or her PIN account.

Appeals Process. Students who wish to appeal their refund amount must do so in writing to Refunds Appeals Committee, Student Loan Accounting, 2nd Floor Sparks Hall.

•Regional Tuition Discount

Students applying for admission or readmission who are residents of counties in Illinois, Indiana, Missouri, and Tennessee will be assessed out-of-state tuition. A tuition discount will be credited for the difference between Murray State University's out-of-state tuition and the appropriate regional tuition that is based on colleges from the student's official state of residency on record with Admissions Services. The summer Regional Tuition rate for graduate students will be an hourly rate.

•Housing Fees

Refer to *Costs* on the Murray State University website: www.murraystate.edu/bursar

HOUSING REQUIREMENTS

Signing in at the front desk of the residential college you are assigned to, accepting the room key, or moving things into the room constitutes binding acceptance of the housing contract and obligates the resident for the full amount of the year's room rent. Students interested in terminating their housing contract during the academic year should contact the housing office for information on available options. The student agrees to abide by all laws and the housing and university rules as contained in the *Student Handbook*. The university reserves the right to cancel the housing contract at any time if a student evidences an inability to live within the housing regulations of Murray State University.

Students who formally complete an official withdrawal from the university are required to move from the residence hall within 24 hours and they are eligible for a refund of the unused portion of their rent.

Students who get married during the semester and choose to move off campus are also eligible for a refund after their marriage license is presented at the Housing Office.

Applications, Deposits, Refunds, Forfeits. Students desiring university housing must complete an application, enclose a \$150.00 deposit for a residential college room or for a College Courts apartment, payable to Murray State University, and submit both to the Housing Office of the university as early as possible to assure accommodations (all MSU fees/deposits

are subject to change. Check the current *Schedule of Fees*). Scholarships do not cover the housing deposit. It is imperative to remember that before a student is permitted to move into university housing, the student must be admitted academically to the university.

Any student desiring to cancel a housing application must do so in writing to the Director of Housing no later than July 1 for a fall semester reservation, December 1 for the spring semester, and May 15 for the summer term.

Cancellation of a housing application after this date will result in a forfeiture of the deposit. Any student having a reservation but failing to register in a residential college also must forfeit the room deposit.

Room deposits are held while a student resides in university housing. After the initial application, a student need only complete a room reservation form to maintain a room in the residential college each year. The room reservation forms are distributed by each residential college office to students living in the college. When a student permanently moves from the residential college, the room deposit is refunded approximately 60 days after final departure. Costs for damages, missing inventory, outstanding debts, etc., will be deducted from the deposit refund.

•Meal Plans

There are a variety of meal plans offered on campus. Contact the RacerCard office for the latest options and prices at 270-809-4600.

Students may also elect to deposit funds on their Racer Card ID to use like cash at food service locations and the University Store.

•Other Fees

Refer to *Costs* at www.murraystate.edu/bursar, for a list of current fees for the following:

- admission application fee
- master's degree fee
- deferred degree fee (change of degree date)
- duplicate degree fee
- duplicate Racer Card ID
- late registration
(begins approximately 14 calendar days prior to first day of classes)
- master's thesis binding fee (per copy)
- Millers Analogies test
- official transcript mailed or on demand
- recreational ID per semester
(students, faculty, staff, spouse and dependent child)
- residence hall activity fee, per semester
- service charge on returned checks
- vehicle parking permit
- Racer Card fee

Certain academic courses such as private lessons, utilization of special facilities, or directed experiences require an additional fee. For more information on fees, go to www.murraystate.edu and visit the admissions/registrar link.

Senior Citizen's Tuition Waiver

Murray State University in accordance with KRS 164.284, will waive tuition and registration fees (except for special workshop-type courses) for any person 65 years of age or older who is a resident of Kentucky. Application fees, special course fees or necessary materials for class use are not covered in the waiver.

In the event that classes are full or the granting of free tuition requires additional staff or course sections, the university may deny an individual's request.

Fee Policy

As a part of the state-supported system of higher education in Kentucky, Murray State University is governed by the following statewide policy (approved January 14, 1991). For additional information and a copy of the affidavit for a review of residency status, write Registrar's Office, Murray State University, 113 Sparks Hall, Murray KY 42071-3312, call 270-809-3741 or visit the Registrar's web page.

13 KAR 2:045. Determination of residency status for admission and tuition assessment purposes.

RELATES TO: KRS Chapter 13B, 164.020, 164.030, 164A.330(6) STATUTORY AUTHORITY: KRS 164.020(8) NECESSITY, FUNCTION, AND CONFORMITY: KRS 164.020(8) requires the Council on Postsecondary Education to determine tuition and approve the minimum qualifications for admission to a state-supported postsecondary education institution and authorizes the Council to set different tuition amounts for residents of Kentucky and for nonresidents. This administrative regulation establishes the procedure and guidelines for determining the residency status of a student who is seeking admission to, or who is enrolled at, a state-supported postsecondary education institution.

Section 1. Definitions. (1) "Academic term" means a division of the school year during which a course of studies is offered, and includes a semester, quarter, or single consolidated summer term as defined by the institution.

(2) "Continuous enrollment" means enrollment in a state-supported postsecondary education institution at the same degree level for consecutive terms, excluding summer term, since the beginning of the period for which continuous enrollment is claimed unless a sequence of continuous enrollment is broken due to extenuating circumstances beyond the student's control, including serious personal illness or injury, or illness or death of a parent.

(3) "Degree level" means enrollment in a course or program which could result in the award of a:

(a) Certificate, diploma or other program award at an institution;

(b) Baccalaureate degree or lower including enrollment in a course by a nondegree-seeking postbaccalaureate student;

(c) Graduate degree or graduate certification other than a first-professional degree in law, medicine, dentistry or "Pharm. D"; or

(d) Professional degree in law, medicine, dentistry, or "Pharm. D".

(4) "Demonstration of Kentucky domicile and residency" means the presentation of documented information and evidence sufficient to prove by a preponderance of the evidence that a person is domiciled in Kentucky and is a resident of Kentucky.

(5) "Dependent person" means a person who cannot demonstrate financial independence from parents or persons other than a spouse and who does not meet the criteria established in Section 5 of this administrative regulation.

(6) "Determination of residency status" means the decision of a postsecondary education institution that may include a formal hearing that results in the classification of a person as a Kentucky resident or as a nonresident for admission and tuition assessment purposes.

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(7) “Domicile” means a person’s true, fixed, and permanent home and is the place where the person intends to remain, and to which the person expects to return if absent without intending to establish a new domicile elsewhere.

(8) “Full-time employment” means continuous employment for at least forty-eight (48) weeks at an average of at least thirty (30) hours per week.

(9) “Independent person” means a person who demonstrates financial independence from parents or persons other than a spouse and who can meet the criteria established in Section 5 of this administrative regulation.

(10) “Institution” means an entity defined in KRS 164.001(11) if the type of institution is not expressly stated and includes the Kentucky Virtual University, the Council on Postsecondary Education, and the Kentucky Higher Education Assistance Authority.

(11) “Kentucky resident” means a determination by an institution that a person is domiciled in and is a resident of Kentucky as determined by this administrative regulation.

(12) “Nonresident” means a person who is domiciled outside of Kentucky or who currently maintains legal residence outside Kentucky or who is not a Kentucky resident within the meaning of this administrative regulation.

(13) “Parent” means one (1) of the following:

(a) A person’s father or mother; or

(b) A court-appointed legal guardian if:

1. The guardianship is recognized by an appropriate court within the United States;

2. There was a relinquishment of the rights of the parents; and

3. The guardianship was not established primarily to confer Kentucky residency on the person.

(14) “Preponderance of the evidence” means the greater weight of evidence, or evidence which is more credible and convincing to the mind.

(15) “Residence” means the place of abode of a person and the place where the person is physically present most of the time for a noneducational purpose in accordance with Section 3 of this administrative regulation.

(16) “Student financial aid” means all forms of payments to a student if one (1) condition of receiving the payment is the enrollment of the student at an institution.

(17) “Sustenance” means living expenses including room, board, maintenance, transportation, and also may include educational expenses including tuition, fees, books, and supplies.

Section 2. Scope. (1) State-supported postsecondary education institutions were established and are maintained by the Commonwealth of Kentucky primarily for the benefit of qualified residents of Kentucky. The substantial commitment of public resources to postsecondary education is predicated on the proposition that the state benefits significantly from the existence of an educated citizenry. As a matter of policy, access to postsecondary education shall be provided so far as feasible at reasonable cost to an individual who is domiciled in Kentucky and who is a resident of Kentucky.

(2) The Council on Postsecondary Education may require a student who is neither domiciled in nor a resident of Kentucky to meet higher admission standards and to pay a higher level of tuition than resident students.

(3) This administrative regulation applies to all student residency determinations regardless of circumstances, including residency determinations made by the state-supported institutions for prospective and currently-enrolled students; the Southern Regional Education Board contract spaces; reciprocity

agreements, where appropriate; the Kentucky Virtual University; academic common market programs; the Kentucky Educational Excellence Scholarship Program; and other state student financial aid programs, as appropriate.

Section 3. Determination of Residency Status; General Rules. (1) A determination of residency shall include:

(a) An initial determination of residency status by an institution during the admission process or upon enrollment in an institution for a specific academic term or for admission into a specific academic program;

(b) A reconsideration of a determination of residency status by an institution based upon a changed circumstance; and

(c) A formal hearing conducted by an institution upon request of a student after other administrative procedures have been completed.

(2) An initial determination of residency status shall be based upon:

(a) The facts in existence when the credentials established by an institution for admission for a specific academic term have been received and during the period of review by the institution;

(b) Information derived from admissions materials;

(c) Other materials required by an institution and which are consistent with this administrative regulation; or

(d) Other information available to the institution from any source.

(3) An individual seeking a determination of Kentucky residency status shall demonstrate that status by a preponderance of the evidence.

(4) A determination of residency status shall be based upon verifiable circumstances or actions.

(5) Evidence and information cited as the basis for Kentucky domicile and residency shall accompany the application for a determination of residency status.

(6) A student classified as a nonresident shall retain that status until the student is officially reclassified by an institution.

(7) A student may apply for a review of a determination of residency status once for each academic term.

(8) If an institution has information that a student’s residency status may be incorrect, the institution shall review and determine the student’s correct residency status.

(9) If the Council on Postsecondary Education has information that an institution’s determination of residency status for a student may be incorrect, it may require the institution to review the circumstances and report the results of that review.

(10) An institution shall impose a penalty or sanction against a student who gives incorrect or misleading information to an institutional official, including payment of nonresident tuition for each academic term for which resident tuition was assessed based on an improper determination of residency status. The penalty may also include:

(a) Student discipline by the institution through a policy written and disseminated to students; or

(b) Criminal prosecution.

Section 4. Presumptions Regarding Residency Status.

(1) In making a determination of residency status, it shall be presumed that a person is a nonresident if:

(a) A person is, or seeks to be, an undergraduate student and admissions records show the student to be a graduate of an out-of-state high school within five (5) years prior to a request for a determination of residency status;

(b) A person’s admissions records indicate the student’s residence to be outside of Kentucky at the time of application for admission;

(c) A person moves to Kentucky primarily for the purpose of enrollment in an institution;

(d) A person moves to Kentucky and within twelve (12) months enrolls at an institution more than half time; or

(e) A person has a continuous absence of one (1) year from Kentucky.

(2) A presumption arising from subsection (1) of this section shall be overcome by presentation of evidence that is sufficient to demonstrate that a person is domiciled in and is a resident of Kentucky.

Section 5. Determination of Whether a Student is Dependent or Independent. (1) In a determination of residency status, an institution shall first determine whether a student is dependent or independent. This provision is predicated on the assumption that a dependent person lacks the financial ability to live independently of the person upon whom the student is dependent and therefore lacks the ability to form the requisite intent to establish domicile.

(2) In determining the dependent or independent status of a person, the following information shall be considered as well as other relevant information available at the time the determination is made:

(a) 1. Whether the person has been claimed as a dependent on the federal or state tax returns of a parent or other person for the year preceding the date of application for a determination of residency status; or

2. Whether the person is no longer claimed by a parent or other person as a dependent or as an exemption for federal and state tax purposes; and

(b) Whether the person has financial earnings and resources independent of a person other than an independent spouse necessary to provide for the person's own sustenance.

(3) An individual who enrolls at an institution immediately following graduation from high school and remains enrolled shall be presumed to be a dependent person unless the contrary is evident from the information submitted.

(4) Domicile may be inferred from the student's permanent address, parent's mailing address, or location of high school of graduation.

(5) Marriage to an independent person domiciled in and who is a resident of Kentucky shall be a factor considered by an institution in determining whether a student is dependent or independent.

(6) Financial assistance from or a loan made by a parent or family member other than an independent spouse, if used for sustenance of the student:

(a) Shall not be considered in establishing a student as independent; and

(b) Shall be a factor in establishing that a student is dependent.

Section 6. Effect of a Determination of Dependent Status on a Determination of Residency Status. (1) The effect of a determination that a person is dependent shall be:

(a) The domicile and residency of a dependent person shall be the same as either parent. The domicile and residency of the parent shall be determined in the same manner as the domicile and residency of an independent person.

(b) The domicile and residency of a dependent person whose parents are divorced, separated, or otherwise living apart shall be Kentucky if either parent is domiciled in and is a resident of Kentucky regardless of which parent has legal custody or is entitled to claim that person as a dependent pursuant to federal or Kentucky income tax provisions.

(2)(a) If the parent or parents of a dependent person are Kentucky residents and are domiciled in Kentucky but subsequently move from the state, the dependent person shall be considered a resident of Kentucky while in continuous

enrollment at the degree level in which currently enrolled.

(b) If continuous enrollment is broken or the current degree level is completed, the dependent person's residency status shall be reassessed when the circumstances detailed in subparagraph 1 of this paragraph are present.

Section 7. Member of Armed Forces of the United States, Spouse and Dependents; Effect on a Determination of Residency Status. (1) A member, spouse, or dependent of a member whose domicile and residency was Kentucky at the time of induction into the Armed Forces of the United States, and who maintains Kentucky as home of record and permanent address, shall be entitled to Kentucky residency status:

(a) During the time of active service; or

(b) If the member, spouse, or dependent returns to this state within six (6) months of the date of the member's discharge from active duty.

(2)(a) A member, spouse or dependent of a member of the Armed Forces of the United States stationed in Kentucky on active military orders shall be considered a Kentucky resident while the member is on active duty in this state pursuant to those orders if the member is not:

1. Stationed in Kentucky for the purpose of enrollment at an institution; or

2. On temporary assignment of less than one (1) year.

(b) A member, spouse or dependent of a member, shall not lose Kentucky residency status if the member is thereafter transferred on military orders while the member, spouse or dependent requesting the status is in continuous enrollment at the degree level in which currently enrolled.

(3) Membership in the National Guard or civilian employment at a military base alone shall not qualify a person for Kentucky residency status under the provisions of subsections (1) and (2) of this section.

(4) A person's residency status established pursuant to this section shall be reassessed if the qualifying condition is terminated.

Section 8. Status of Nonresident Aliens; Visas and Immigration. (1)(a) A person holding a permanent residency visa or classified as a political refugee shall establish domicile and residency in the same manner as another person.

(b) Time spent in Kentucky and progress made in fulfilling the conditions of domicile and residency prior to obtaining permanent residency status shall be considered in establishing Kentucky domicile and residency.

(2) A person holding a nonimmigrant visa with designation A, E, G, H-1, H-4 if accompanying a person with an H-1 visa, I, K, L, N, R, shall establish domicile and residency the same as another person.

(3)(a) An independent person holding a nonimmigrant visa with designation B, C, D, F, H-2, H-3, H-4 if accompanying a person with an H-2 or H-3 visa, J, M, O, P, Q, S, TD or TN shall not be classified as a Kentucky resident, because that person does not have the capacity to remain in Kentucky indefinitely and therefore cannot form the requisite intent necessary to establish domicile within the meaning of this administrative regulation.

(b) A dependent person holding a visa as described in paragraph (a) of this subsection, but who is a dependent of a parent holding a visa as described in subsection (2) of this section, shall be considered as holding the visa of the parent.

(c) A dependent person holding a visa described in subsection (2) of this section or paragraph (a) of this subsection, if a parent is a citizen of the United States and is a resident of and domiciled in Kentucky, shall be a resident of Kentucky for the purposes of this administrative regulation.

(4) A person shall be a Kentucky resident for the purpose

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of this administrative regulation if the person graduated from a Kentucky high school and:

- (a) Is an undocumented alien;
 - (b) Holds a visa listed in subsections (2) or (3)(a) of this section; or
 - (c) Is a dependent of a person who holds a visa listed in subsections (2) or (3)(a) of this section.
- (5)(a) Except as provided in paragraph (b) of this subsection, a person who has petitioned the federal government to reclassify visa status shall continue to be ineligible until the petition has been decided by the federal government.

(b) A person who has petitioned the federal government to reclassify visa status based on a marriage to a Kentucky resident and who can demonstrate that the petition has been filed and acknowledged by the federal government, may establish Kentucky domicile and residency at that time.

Section 9. Beneficiaries of a Kentucky Educational Savings Plan Trust. A beneficiary of a Kentucky Educational Savings Plan Trust shall be granted residency status if the beneficiary meets the requirements of KRS 164A.330(6).

Section 10. Criteria Used in a Determination of Residency Status. (1) A determination of Kentucky domicile and residency shall be based upon verifiable circumstances or actions. A single fact shall not be paramount, and each situation shall be evaluated to identify those facts essential to the determination of domicile and residency.

(2) The following facts, although not conclusive, shall have probative value in their entirety and shall be individually weighted, appropriate to the facts and circumstances in each determination of residency:

(a) Acceptance of an offer of full-time employment or transfer to an employer in Kentucky or contiguous area while maintaining residence and domicile in Kentucky;

(b) Continuous physical presence in Kentucky while in a nonstudent status for the twelve (12) months immediately preceding the start of the academic term for which a classification of Kentucky residency is sought;

(c)1. Filing of Kentucky resident income tax return for the calendar year preceding the date of application for a change in residency status; or

2. Payment of Kentucky withholding taxes while employed during the calendar year for which a change in classification is sought;

(d) Full-time employment of at least one (1) year while living in Kentucky;

(e) Attendance as a full-time, nonresident student at an out-of-state institution based on a determination by that school that the person is a resident of Kentucky;

(f) Abandonment of a former domicile or residence and establishing domicile and residency in Kentucky with application to or attendance at an institution following and incidental to the change in domicile and residency;

(g) Obtaining licensing or certification for a professional and occupational purpose in Kentucky;

(h) Payment of real property taxes in Kentucky;

(i) Ownership of real property in Kentucky, if the property was used by the student as a residence preceding the date of application for a determination of residency status;

(j) Long-term lease of at least twelve (12) consecutive months of non-collegiate housing;

(k) Marriage of an independent student to a person who was domiciled in and a resident of Kentucky prior to the marriage;

(l) Continued presence in Kentucky during academic breaks; and

(m) The extent to which a student is dependent on student financial aid in order to provide basic sustenance.

(3) Except as provided in subsection (4) of this section, the following facts, because of the ease and convenience in completing them, shall have limited probative value in a determination that a person is domiciled in and is a resident of Kentucky:

(a) Kentucky automobile registration;

(b) Kentucky driver's license; and

(c) Registration as a Kentucky voter.

(4) The absence of a fact contained in subsection (3) of this section shall have significant probative value in determining that a student is not domiciled in or is not a resident of Kentucky.

(5) A person shall not be determined to be a Kentucky resident by the performance of an act which is incidental to fulfilling an educational purpose or by an act performed as a matter of convenience. Mere physical presence in Kentucky, including living with a relative or friend, shall not be sufficient evidence of domicile and residency. A person shall respond to all information requested by an institution.

Section 11. Effect of a Change in Circumstances on Residency Status. (1) If a person becomes independent or if the residency status of a parent or parents of a dependent person changes, an institution shall reassess residency either upon a request by the student or a review initiated by the institution.

(2) Upon transfer to a Kentucky institution, a student's residency status shall be assessed by the receiving institution.

(3) A reconsideration of a determination of residency status for a dependent person shall be subject to the provisions for continuous enrollment, if applicable.

Section 12. Student Responsibilities. (1) A student shall report under the proper residency classification which includes the following actions:

(a) Raising a question in a timely manner concerning residency classification;

(b) Making application for change of residency classification in a timely manner with the designated office or person at the institution; and

(c) Notifying the designated office or person at the institution immediately upon a change in residency.

(2) If a student fails to notify an institutional official of a change in residency, an institutional official may investigate and evaluate the student's residency status.

(3)(a) If a student fails to provide, by the date specified by the institution, information required by an institution in a determination of residency status, the student shall be notified by the institution that the review has been canceled and that a determination has been made.

(b) Notification shall be made by registered mail, return receipt requested.

(c) Notification shall be made within ten (10) calendar days after the deadline for receipt of materials has passed.

(4) A student shall not be entitled to appeal a determination of residency status if the determination made by an institution is because a student has failed to meet published deadlines for the submission of information as set forth in subsection (3) of this section. A student may request a review of a determination of residency status in a subsequent academic term.

Section 13. Institutional Responsibilities. Each institution shall:

(1) Provide for an administrative appeals process that includes a residency appeals officer to consider student appeals of an initial residency determination and which shall include a provision of fourteen (14) days for the student to appeal the residency appeals officer's determination;

(2) Establish a residency review committee to consider appeals of residency determinations by the residency appeals officer. The residency review committee shall make a determination of student residency status and notify the student in writing within forty-five (45) days after receipt of the student appeal;

(3) Establish a formal hearing process as described in Section 14 of this administrative regulation; and

(4) Establish written policies and procedures for administering the responsibilities established in subsections (1), (2), and (3) of this section and that are:

(a) Approved by the institution's governing board;

(b) Made available to all students; and

(c) Filed with the council.

Section 14. Formal Institutional Hearing. (1) A student who appeals a determination of residency by a residency review committee shall be granted a formal hearing by an institution if the request is made by a student in writing within fourteen (14) calendar days after notification of a determination by a residency review committee.

(2) If a request for a formal hearing is received, an institution shall appoint a hearing officer to conduct a formal hearing. The hearing officer:

(a) Shall be a person not involved in determinations of residency at an institution except for formal hearings; and

(b) Shall not be an employee in the same organizational unit as the residency appeals officer.

(3) An institution shall have written procedures for the conduct of a formal hearing that have been adopted by the board of trustees or regents, as appropriate, and that provide for:

(a) A hearing officer to make a recommendation on a residency appeal;

(b) Guarantees of due process to a student that include:

1. The right of a student to be represented by legal counsel; and

2. The right of a student to present information and to present testimony and information in support of a claim of Kentucky residency; and

(c) A recommendation to be issued by the hearing officer.

(4) An institution's formal hearing procedures shall be filed with the Council on Postsecondary Education and shall be available to a student requesting a formal hearing.

Section 15. Cost of Formal Hearings. (1) An institution shall pay the cost for all residency determinations including the cost of a formal hearing.

(2) A student shall pay for the cost of all legal representation in support of the student's claim of residency. (17 Ky.R. 2557; eff. 4-5-91; Am. 22 Ky.R. 1656; 1988; eff. 5-16-96; 23 Ky.R. 3380; 3797; 4099; eff. 6-16-97; 24 Ky.R. 2136; 2705; 25 Ky.R. 51; eff. 7-13-98; 25 Ky.R. 2177; 2577; 2827; eff. 6-7-99; 749; 1238; eff. 11-12-2002.)

For additional information, write or call the Registrar's Office, Murray State University, 113 Sparks Hall, Murray KY 42071-3312; 270-809-3741 or registrar@murraystate.edu.

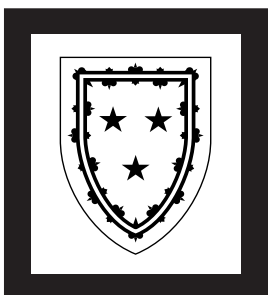
The affidavit for a review of residency can be found at the Registrar's web page:

www.murraystate.edu/registrar/registrar.htm



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General Degree Requirements

Prerequisites and additional requirements for specific degrees will be found in the appropriate departmental sections. It is the graduate student's responsibility to become fully acquainted with regulations and requirements of the university, the college and the department in which the student plans to pursue a course of study.

Course Load

MSU recognized nine hours of courses for credit is a full-time load for graduate students. Students with graduate assistantships may be considered full-time when enrolled for six hours of graduate credit. Students with federal loans should refer to the Federal Loan Agency's definition of a full-time load, which may vary from the MSU definition. The maximum graduate course load, including any undergraduate course work or deficiency, may not exceed 12 hours during the fall or spring semesters. For each five-week summer term, six-seven hours of coursework constitutes a maximum load. Students with graduate assistantships should refer to the sections below.

•Overload Exceptions

If an course overload exception is to be made in any individual instance, a graduate student must have a cumulative GPA of no less than 3.0. Permission to exceed the credit hour limit can be granted only by the collegiate graduate coordinator and dean of the college in which the student is a major. A Graduate Course Overload form, located on-line or in the dean's office, must be completed by the student and signed by the dean to authorize exceptions. Under no circumstances will an overload exception be granted to a student who does not have a cumulative 3.0 GPA. Graduate students petitioning to take more than 16 hours in any semester must have approval of the dean, the collegiate graduate coordinator, and the university graduate coordinator in the Office of the Provost/Academic Affairs.

Graduate Assistantships

Graduate teaching and research assistantships are available in most departments for highly qualified graduate students.

Non-resident graduate students awarded an assistantship may be charged the equivalent of in-state tuition during the semesters in which they are actively employed. In-state tuition equivalencies do not modify residency status. A student who has, or will have an approved graduate assistantship may request an in-state equivalency for one summer during his/her graduate career. Assistantships may only be awarded to an individual student for a maximum of four semesters (excluding summers). Stipends for assistantships may vary between departments.

Graduate assistants are expected to familiarize themselves with university policies and to fulfill their professional re-

sponsibilities to the university. An applicant for a graduate assistantship must be admitted to a graduate program as a degree-seeking student and enrolled in graduate courses during the semester of employment. Course load requirements for graduate assistants are described below.

Applications for assistantships should be filed with the chair of the department of the student's major field of interest no later than May 1, prior to fall enrollment; October 1, prior to spring enrollment; and March 1, prior to summer sessions.

•Assistantship Grade Point Average Requirements

A graduate student who has been admitted conditionally will become eligible for consideration for a graduate assistantship upon completion of nine hours of graduate coursework with a cumulative GPA of at least 3.0. Exceptions may be made for one semester only in cases of assistantships in academic departments when an otherwise ineligible student has required expertise. In such cases, this rule may be waived upon petition by the student, with approval by the departmental chair, the collegiate dean, and the university graduate coordinator.

•Graduate Assistant Course Load

To be eligible for an assistantship, students must be admitted to graduate program at MSU, have earned a cumulative GPA of at least 3.0, and be enrolled in a minimum of six graduate credit hours at Murray State. Graduate students in their final semester of coursework may petition (in writing) the University Graduate Coordinator to qualify for an assistantship while enrolled in fewer than six graduate hours. Non-resident graduate assistants seeking the in-state tuition equivalency must be enrolled in a minimum of six hours of graduate coursework (during fall and spring semesters) and working a minimum of 15 (but not more than 22) hours per week. During the summer sessions, students must be enrolled for a minimum of three hours of coursework in any summer session in which they receive a graduate assistantship.

To maximize academic success, graduate assistants should not carry a course load exceeding 12 hours (or 13 hours if the student is taking a 4-credit hour course). Combined, a graduate assistant's course load and adjusted workload should not exceed 15 hours per semester.

If a course overload exception is to be made in any individual instance, the graduate assistant must have a cumulative GPA of no less than 3.0. A Graduate Course Overload form, available on-line, must be completed by the student and signed by the appropriate authorizing parties. Graduate Assistants petitioning to take more than a combined class and workload of 16 hours in any semester must have approval of the dean, the collegiate graduate coordinator, and the university graduate coordinator in the Office of the Provost.

Course Levels

Courses at the 500 level are restricted to graduate students and to undergraduates with at least junior standing. Exceptions to this regulation must be approved in writing by the appropriate collegiate dean and the Provost. **A graduate student enrolled in a 500 level course will be required to do substantially more work than an undergraduate student in the same course.** This requirement, which shall be clearly specified in the course syllabus, may take the form of research or other work appropriate to the discipline.

Courses numbered 500 and above taken while enrolled as a graduate student may be counted for credit toward a master's degree if they are approved as part of the student's graduate program. Students desiring graduate credit for 500-level classes must be admitted to graduate studies prior to scheduling any 500-level course. Under no circumstances will 500-level courses apply to a graduate degree if taken while the student is classified as a post-baccalaureate or undergraduate student.

Courses numbered 600 or above are open only to graduate students. **In all master's programs, at least half of the total formal coursework, EXCLUDING THESIS, PRACTICUM, INTERNSHIP, or CO-OP CREDIT, must be in courses open only to graduate students (600-level).**

Grading System

The following system of grades is used for the evaluation of course work:

- A..... exceptionally high quality, valued at four points for each credit;
- B..... good, valued at three points for each credit;
- C..... accepted for graduate credit (see overall GPA policies), valued at two points for each credit;
- D..... not accepted for graduate credit;
- E..... failure, no credit, valued at no points but counted as hours attempted;
- P pass, credit valued at no points and no hours attempted;
- AU.... audit, no credit;
- I..... incomplete, computed as hours attempted and no quality points;
- X..... absent from examination, computed as hours attempted and no quality points;
- W..... withdrawal, no hours attempted and no quality points;
- WP... withdrawal passing, no hours attempted and no quality points;
- WE... withdrawal failing, computed as hours attempted and no quality points;
- R..... A grade to be used in restricted approved instances in specific approved courses to denote either completion of a course for which credit is deferred until additional course work is completed, or that the course must be repeated. This grade may be given for courses numbered 698, 699, 798, and 799. It will change to a grade of *I* (or an *E* at the department's discretion) if work has not been completed within two years from the time the *R* grade is given.

A grade of *I* (incomplete) means that some relatively small part of the semester's work remains undone because of sickness or other reason satisfactory to the instructor. **This work must be completed during the next semester or summer session in which the student enrolls in the graduate program if credit for the course is to be gained.** If these conditions are not met, the grade automatically becomes a failing grade. This procedure is not applicable to incompletes recorded for individual study such as special problems, practicum, research or thesis.

A grade of *X* must be changed by special examination within one month (two weeks during the summer term) after the student enrolls in the graduate program if credit for the course is to be gained.

Changes in grades (other than an *I* or *X*) must be processed before the end of the semester following the semester in which the grade was recorded. Grade changes will not be allowed after a degree is conferred.

A student who fails to return within one year forfeits the privilege of making up work or taking examinations to earn credit for courses in which a grade of *I* or *X* was received.

Grade Point Average Requirement

A candidate for a master's degree or a specialist in education degree must have a minimum grade point average of 3.0 in all the approved program graduate courses before the degree is conferred. No credit shall be granted for a grade below *C*.

A graduate course repeated does not remove the original grade received in the course. In calculating grade point averages, a repeated course shall be considered an additional course.

Grade Change Policy

Grades are recorded in the Registrar's Office as reported by the faculty at the end of each term. No grade filed in that office may be changed except upon a written statement signed by the instructor certifying an error has been made.

When an error is made in reporting a grade, the instructor may make the necessary change in the Registrar's Office within the next regular semester following the recording of the grade. A grade will not be changed after a degree is conferred.

The policy concerning the changing of *X* and *I* grades is addressed above.

Grade Appeals Policy

Murray State University recognizes that differences of opinion or interpretation may arise between students and faculty members regarding the assignment of course grades. The university urges students first to seek resolution through informal discussion with the appropriate faculty member. The following policy has been adopted as a formal avenue for the resolution of a student grievance or appeal, in the event that such differences cannot be resolved informally. The university recognizes the right of students to present a grievance to an established committee and to have that grievance considered on its merit through an expeditious and orderly process. Situations involving academic misconduct should be directed to the University Judicial Board.

•Definitions

Complainant: one who files a grievance, complaint or appeal within the scope of this policy.

Respondent: one against whom a grievance is filed.

Days: counted when classes or exams are scheduled, excluding weekends.

Faculty: all persons, whether full or part-time, who are responsible for, assist in, or administer the instructional program. (See Section 2.1 of the *Faculty Handbook* for a complete definition.)

Grievance: a written allegation or complaint that there has been a violation, misinterpretation, or improper application of existing policies, rules, regulations, practices, and/or procedures which a student believes to be unfair, inequitable, or a hindrance to his/her effective performance.

General Degree Requirements

•Limitations

A grievance procedure must be initiated within the first twenty (20) days of the semester immediately following the semester or term during which the incident of grievance is alleged to have occurred, exclusive of summer session. Any special circumstance or request involving the time limitation set forth above will be considered and evaluated by the appropriate academic dean. Documentation of any revision of the time limitation will be included in the grade appeals form.

A faculty member has the responsibility to retain all course material and/or records not left in the student's possession which contribute to the final course grade. These materials must be kept for the 20-day period of the following semester during which a student may appeal a grade, or in the event of an appeal, until conclusion of the appeal process.

•Procedures

Step 1. Before a formal grievance may be filed with the Academic Appeals Board, the complainant should first seek resolution with the instructor. In the event that the instructor is a teaching assistant, the faculty supervisor should also be present during these discussions.

Step 2. Students should check with the department advisor to determine whether or not there are collegiate grievance procedures.

Step 3. Should the matter not be resolved to the satisfaction of the complainant, discussion should be sought with the appropriate department chair. In the event that the chair is the respondent of the grievance, discussion will be held with the academic dean.

Step 4. Should the discussions as outlined in Steps 1 and 2 not prove satisfactory to the complainant, discussion should be sought with the appropriate academic dean, if the dean has not been previously consulted.

Step 5. Once all means of resolution on the collegiate level have been exhausted, the complainant should present a completed grade appeals form to the registrar (Registrar's Office) within fifteen (15) days of the collegiate decision. Grade appeals forms are available in the registrar's office and in the office of each collegiate dean.

Step 6. The registrar shall immediately forward the grade appeals form to the chair of the Academic Appeals Board who in turn will notify the faculty member/respondent that a formal grievance has been filed. The faculty member/respondent will be provided a copy of the completed grade appeals form.

Step 7. The chair of the Academic Appeals Board shall convene that committee within twenty (20) days of the receipt of the grade appeals form. (The Academic Appeals Board is defined in Section 1.6.3.1. of the *Faculty Handbook*.) Prior to the hearing, both complainant and respondent may elect to choose an advisor for the purposes of collecting data and/or presenting his/her position to the board. Complainant and respondent have the right to be accompanied by their advisors during any open meeting of the board at which the board's agenda includes that particular grievance. The board holds the prerogative to call for pertinent testimony from any party involved in the grievance, or any party whom the board believes could clarify the grievance.

Step 8. The written recommendation of the Academic Appeals Board shall be forwarded to the provost for final disposition. Copies of the recommendation shall also be sent to the appropriate academic dean, the complainant, and the respondent, within ten (10) days of the completion of the hearing, unless an extension of time is sought by the board. Telephone notification

to the complainant of the availability of the recommendation shall fulfill the terms of this requirement. The text of the recommendation and all pertinent testimony and gathered data shall be kept in confidence.

NOTE: If at any point in this process, the student alleges that actions have taken place that may be in violation of Murray State University Non-Discrimination Policies, this process must be suspended and the matter directed to the Office of Equal Opportunity.

Transfer Credit

A maximum of 12 graduate hours may be transferred from a regionally accredited graduate school after a student has been admitted. All transfer credit must be approved by the student's advisor and collegiate graduate coordinator. Departments and colleges may set more restrictive policies concerning the kind and amount of transfer hours they will accept. All transfer credit must have been earned within the eight-year period allowed for the degree. The student must have an overall GPA of at least 3.00 on graduate work at Murray State University and a grade of **B** or better in any course that the student wishes to transfer to Murray State. It is the responsibility of the student to initiate a request for transfer of credit. Graduate transfer credit will not be posted to the student's transcript or included in the calculation of the student's GPA until the point of graduation.

•Transfer Credit to Repeat MSU Courses

If a graduate student takes a course at Murray State and chooses to repeat that course at another institution, permission from the student's graduate advisor and collegiate graduate coordinator must be secured. A repeated transfer course is not added to the student's GPA calculation. A course substitution form must be forwarded to Graduate Admissions in Sparks Hall.

Correspondence and Experiential Credit

Murray State University does not grant graduate credit for correspondence courses or for portfolio-based experiential learning.

Challenge Examinations

Murray State University does not grant graduate credit for the completion of a challenge examination or any national testing for credit in any course.

Military Service Credit

Contingent on the approval of the graduate advisor, the collegiate graduate coordinator, and Graduate Admissions, six hours of graduate credit may be accepted toward a master's degree for completion of U.S. Military Command and General Staff College as recommended by the American Council on Education.

Graduate Degree/Course Time Limits

All course work used to fulfill master's degree programs or specialist in education requirements must be completed within the eight-year period prior to awarding the degree, beginning with the date the student initially enrolls in a class for graduate credit. Example: A graduate course begun in August 2002 must be used for a degree no later than August 2010. Failure to complete a degree in eight years will result in the loss of all credits taken outside of the time limits and the

student being unable to continue with the approved program unless an extension is sought and granted. Graduate degree grade point averages are based on the courses listed on the graduate program form and applying to the program being sought. Any courses excluded by the eight-year rule shall not be included in the computation of the grade point average.

Students may request a time extension through their advisor and their program graduate coordinator. Time extensions must be approved by the Graduate Studies Committee of the Academic Council. Extensions are considered on a case-by-case basis. Students are strongly discouraged from requesting more than one extension. In the case where all graduate coursework has expired, no time extensions will be granted.

Since graduate students do not always enroll for courses in consecutive semesters, it is important to note the following:

- Enrolled graduate students need not apply every semester unless they have not been enrolled for five consecutive semesters, or have completed their graduate programs;
- Each graduate course must be used toward a degree within eight years of enrolling in that course.

Master's Thesis Requirements

Many graduate programs require a thesis for which a maximum of six hours of credit may be earned (consult program curriculum under the appropriate departmental section). If a thesis is required, the student's departmental advisor should be consulted early in the first term of graduate study. The advisor will assist the student in choosing a thesis topic, a thesis director, and a thesis committee (to consist of three to five members, including the director). Typically, thesis courses are not scheduled until the student is at least mid-way through a graduate program.

The thesis title, the thesis director, and members of the committee must be approved by the collegiate graduate coordinator who will formally appoint the committee and notify Graduate Admissions.

Students using human subjects in their research must seek approval and follow the guidelines of the MSU Institutional Review Board.

•Thesis Approval

Two weeks prior to the date on which the degree is to be conferred, the original and four copies of the signed thesis are to be submitted in unbound form to Graduate Admissions. Failure to meet this deadline may result in postponement of the student's degree conferral until the following semester.

Complete procedural and structural instructions are contained in *Guidelines for the Preparation of Master's Theses*, available from the collegiate graduate coordinator and the MSU website. It is the responsibility of the student to secure and comply with these guidelines.

Students who change from thesis track to non-thesis track in a graduate program possibly may not receive credit for the 698 and 699 Thesis courses.

Tests

Nationally recognized tests of aptitude are required by some colleges, departments, and programs of the university. Test scores may be used for admission, for candidacy, or as a condition of degree completion. Test score requirements for specific degrees will be found in the *Graduate Bulletin* under the appropriate departmental sections.

Summative Evaluation

In addition to completing required courses, students in master's degree programs will be expected to demonstrate that they have successfully met program standards through summative evaluation procedures administered near the end of the course of study. Murray State University also uses information on student performance gathered in summative evaluations for purposes of program improvement.

Comprehensive Examination

A student should refer to the section containing degree requirements of the student's graduate program for information regarding the comprehensive examination, if required by the department.

A student normally takes the comprehensive examination during the semester in which the student graduates; however, a student who has completed 24 hours toward the master's degree may also elect to take the examination.

An application for the comprehensive examination must be filed in Graduate Admissions during the first three weeks of the semester in which the student plans to take the examination.

The comprehensive examination is usually administered three weeks prior to the conclusion of the semester.

Application for Degree

Application for the degree should be made and the degree fee paid during the first three weeks of the semester in which the student expects to graduate. If a student does not graduate after making application, the student must reapply for the degree. Degree applications are available in Graduate Admissions or on the MSU website.

Graduate Student Checklist

Once a student is admitted to a graduate program at MSU, the checklist below may assist as progress toward completion of a degree is made:

- **Graduate Program Form** - This form was included along with the letter of admission. Students should contact their academic advisor, and with the advisor's assistance, complete the proposed program form during the first nine weeks of the first semester of study. Any changes to this plan must be made by official course substitution forms.

- **600-level courses** - In all master's programs, at least half of the total formal coursework, excluding thesis, practicum, internship, or co-op credit, must be in courses open only to graduate students (600-level).

- **GRE or GMAT results** - If the student's program requires the GRE or GMAT, the student must request that an official score report be sent directly to MSU from the Educational Testing Service. If the student did not do this at the time of the exam, he/she should contact ETS (www.gre.org or www.gmat.org).

- **Grades** - Graduate students receive no credit for earning a grade below C. A graduate course repeated does not remove the original grade received in the course. In calculating grade point averages, a repeated course shall be considered an additional course. A 3.0 minimum GPA is required for a degree to be conferred.

- **Language requirement** - Students enrolled in programs with a language requirement should make certain that the language requirements have been met and documented.

- **Thesis** - If a thesis is required, the student's departmental advisor should be consulted early in the first term of graduate study. Thesis guidelines are available from Admission Services and the MSU website.

General Degree Requirements

• **Applying for a degree** - Students must apply for the degree and pay the degree fee at the beginning of the semester in which they intend to graduate. If the program requires a comprehensive exam, students will apply to take that exam at the same time.

Second Master's Degree

Students desiring to pursue another master's degree at Murray State University shall have completed all requirements for a previous master's degree at Murray State University or another accredited university. In general, the same basic requirements for general admission, admission to candidacy, and other conditions previously stated in this catalog relative to a master's degree are also applicable to a second master's degree with the following exceptions:

1. A maximum of nine semester hours of completed graduate work from any previous graduate degree or program may be applied toward an additional degree if the courses are appropriate for the degree and are approved by the department and if they fall within the eight-year time limit for completion of the master's degree.

2. If the new master's degree involves certification, all requirements for the certificate must be met prior to the completion of the degree.

3. Candidates for Specialist Degrees must check with their advisors concerning the program regulations on second degrees.

Candidates for an additional master's degree must file an application for admission to graduate school and identify their subsequent program prior to registration for additional coursework. The student must then contact the advisor assigned from the department offering the subsequent program and plan a complete program of studies. Individual programs have specific requirements which must be met before pursuing a subsequent master's degree. Normally, any deficiencies in preparation for a subsequent master's degree must be resolved during the first semester of enrollment.

held responsible for any communication from university offices sent to the address last given, and may not claim indulgence on the plea of having changed lodgings or name and therefore of not having received the communication. The original demographic information from the student's initial admission to the university remains on the transcript, and any approved changes are added to the permanent record when the proper legal documents are presented to the Registrar's Office

Transcripts

Transcripts will be released at the written request of the student and in conformity with existing state and federal statutes pertaining to the release of student academic records. There is a fee for this service. Request forms and instructions are available on the MSU website.

The official academic record is the property of the university. Consequently, the university reserves the right to withhold the release of a transcript of that record if the student has an obligation to the university, and reserves the right to maintain the information contained in the permanent record according to established practice and in compliance with state and federal laws.

Documents received from third parties (including college transcripts, test scores, etc.) are the property of Murray State University. These documents cannot be released by Murray State to other institutions or agencies nor can they be returned to the student. Students needing to send other school transcripts, test scores, etc., should contact the original source.

Name and Address Changes

After registration, a student who has a name or address change is expected to notify the Registrar's Office in writing or by updating the information via the PIN system, and will be



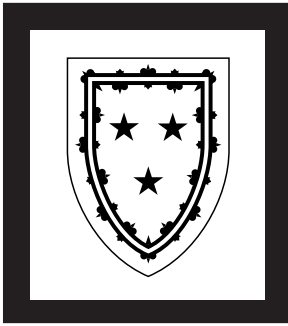
College of Business and Public Affairs

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College of Business and Public Affairs

Timothy S. Todd, Dean

Gerry N. Muuka, Associate Dean/Graduate Coordinator

Business Building, Room 109 (270) 809-6970

cbpa@murraystate.edu

The College of Business and Public Affairs offers six graduate degree programs: the Master of Business Administration (M.B.A), offered through the Arthur J. Bauernfeind Graduate Program in Business Administration; the Master of Science in Information Systems; the Master of Science in Economics; the Master of Arts or Science in Mass Communications; the Master of Arts or Science in Organizational Communication; and the Master of Science in Telecommunications Systems Management. These programs prepare graduates for a variety of challenging and rewarding careers in industry, private enterprise, governmental agencies, and not-for-profit organizations.

The university began offering programs in business and public affairs in 1935. The College of Business and Public Affairs was formed in 1966. The Department of Journalism and Mass Communications and the Department of Organizational Communication were added in 2000. Both the undergraduate business and M.B.A programs are accredited by AACSB-International—The Association to Advance Collegiate Schools of Business. Undergraduate business programs were first accredited by AACSB in 1976, while the M.B.A has been AACSB accredited since 1981.

Faculty. The primary resource in graduate programs is the teaching faculty. The graduate faculty of the college give a high priority to excellence in teaching and research activities in support of teaching. Since 1967, the faculty have published in the college's professional journal, *Journal of Business and Public Affairs*, and in many other national and international professional and scholarly journals. Enrollment in most graduate courses ranges from 10 to 25 students, enhancing close student-faculty relations.

Computer facilities. Students at Murray State University have varied and extensive access to computing resources. The university's Computing and Information Services Center, located in the Martha Layne Collins Center for Industry and Technology, houses an IBM 2003 Model 106 mainframe computer. In addition to this systems' administrative support role, faculty, staff and students may also utilize this computer on a no charge individual account basis. There are also a number of open microcomputer labs located in buildings and dorms across campus available for use on a first come, first serve basis.

The College of Business and Public Affairs maintains seven individual labs with approximately 180 Pentium class microcomputers within the College's building complex. There is also a 17-station Macintosh lab in Wilson Hall. Each of these labs is fully networked with in-house multi-server support and all are linked to the fiber optic backbone on campus providing high-speed access to both on-campus and off-campus information resources. The College continuously upgrades the hardware and software in its facilities to keep pace with state of the art technology and

through numerous course offerings, provides in-depth instruction on the use of many of the most popular software suites and applications.

Additionally, all students attending Murray State University are provided personal email accounts and, at their request, may be assigned web server space to develop and host a personal web page. Students living in the dorms have direct network access through high speed local area networks similar to those found in the microcomputer labs located on campus. Those individuals choosing to live off-campus may gain access to collegiate resources by dialing into the University's network.

Library services. The Murray State University library system provides access to information essential for teaching and research. Of the library's 960,000 resources, more than 30,000 volumes focus specifically on business topics. The library subscribes to over 350 business-specific journals in print, and has access to 4,500 business-specific publications full text electronically. In addition to the electronic catalog of monographic materials, the library subscribes to over 50 databases including EBSCO's Business Source Premier, ProQuest's Computing and Career and Technical Education, the National Bureau of Economic Research, and Regional Business News. These five databases provide access to at least 20 years worth of 8,740 publications, some 10,000 company profiles and 1,700 industry profiles. Remote access to the library's electronic collections is available via proxy server.

Placement service. The college works closely with the university Career Services Office. A number of national corporations, governmental agencies, not-for-profit organizations, and regional organizations regularly visit the campus to interview qualified candidates.

Bureau of Business and Economic Research. The Bureau of Business and Economic Research provides research services to business, community organizations and government agencies in Kentucky. In addition, the Bureau maintains a web-based data set that contains information on education and economic statistics for West Kentucky. The website also contains bureau research reports and newsletters. This can be accessed through the college's website.

Murray State Small Business Development Center. The principal function of the Murray State SBDC is to provide technical assistance to small businesses throughout the region. Paid consulting opportunities are available to full-time graduate students

**Arthur J. Bauernfeind Graduate
Program in Business Administration**

270-809-6970
cbpa@murraystate.edu
Henderson - Mickey Johnson
270-926-0149

The graduate program leading to the Master of Business Administration (M.B.A.) degree for full-time students is offered during the day and evening at Murray. The same program is offered in the evening for part-time students at Murray, Paducah, Henderson, and Hopkinsville.

The M.B.A. program is offered jointly by the departments within the college. It is designed to qualify graduates for creative leadership positions in a complex and ever-changing business environment. Primary emphasis is placed on the analysis of business problems, the determination of business policies and the development of the skills and mature judgment necessary for competent management.

The broad integrated curriculum provides each student with an understanding of the major facets of domestic and international business operations including work in the theoretical and historical foundations of business, quantitative controls and information systems and decision making, research methodology, decision-making through the development of advanced functional skills, and the socio-political environment of business. Opportunity is provided for a moderate degree of specialization through the choice of graduate electives selected. The accounting option requires additional foundation courses and all graduate electives to be taken in accounting. There is no comprehensive examination or thesis requirement. However, the capstone course, MGT 656, can be taken only after completion of at least 18 hours of graduate course work.

Requirements for Admission

Applicants must meet Murray State University requirements (see Chapter 2). Additional requirements for unconditional and conditional admission are as follows.

Unconditional

An applicant must attain an acceptable score using the following formulas that combine the undergraduate grade point average (UGPA) and the score on **either** the Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE).

All applicants, including those with GPAs of 3.0 and above, must take either the GMAT and achieve a minimum score of 400, or the GRE and achieve a minimum score of 600. Applicants with undergraduate GPAs of less than 3.0 on the 4.0 scale need GMAT scores that are higher than 400, or GRE scores higher than 800.

For unconditional admission to the program, an applicant must satisfy one of two formulas:

GMAT Users: $(200 \times \text{UGPA}) + \text{GMAT} \geq 1,000$

GRE Users: $(200 \times \text{UGPA}) + \text{GRE} \geq 1,400$

(Combined quantitative and verbal sections only)

An alternative formula is used if an applicant's grade point average on the last 60 semester hours (LPGA) of undergraduate work is 0.25 points or more above the applicant's overall UGPA: $200 \times (\text{LPGA} - 0.25) + \text{GMAT} > 1,000$ if they take

An applicant whose native language is not English or who did not graduate from an English-speaking college or university must satisfy the above requirements, meet all admission requirements specified in the international student admission

section of this bulletin, and score a minimum of 20 in each of the four areas examined in the new TOEFL, ie. writing, reading, listening, and speaking.

Conditional

An applicant who has not taken the GMAT or GRE will be granted conditional admission to the M.B.A. program if the applicant's UGPA is at least 2.75 (on a 4.00 scale), or if the applicant's LGPA is at least 3.00. This student must take the GMAT/GRE within two months of receiving the conditional admission letter. A student who is conditionally admitted may enroll in foundation courses (see below) but may not enroll in 600 level courses without a special waiver from the assistant dean/MBA director. International students are not usually admitted conditionally, meaning they must take and pass the GMAT or GRE before coming to the United States.

Master of Business Administration

CIP 52.0101

ACCREDITED BY:

AACSB-International—The Association to Advance Collegiate Schools of Business.

NON-THESIS TRACK ONLY

The M.B.A. curriculum requirements are divided into two parts: (1) foundation courses and (2) graduate courses.

The foundation courses are undergraduate courses designed to form a base upon which the student can build in the graduate phase of the program. A student who has satisfactorily completed one or more equivalent courses will be given a waiver for previous work. A minimum grade of *C* is required to satisfy each foundation course.

Foundation Courses

		Level I	Hours
ACC	490	Survey of Accounting	3
		-or-	
ACC	200	Principles of Financial Accounting	-and- 3
ACC	201	Principles of Managerial Accounting	3
ECO	500	Foundations of Economic Analysis	3
		-or-	
ECO	230	Principles of Macroeconomics	-and- 3
ECO	231	Principles of Microeconomics	3
MAT	220	Business Calculus	3 3
		Level II	
BPA	355	Information Systems and Decision Making ¹	3 3
FIN	330	Principles of Finance	3 3
MGT	350	Fundamentals of Management	3 3
MKT	360	Principles of Marketing	3 3
		Level III	
CIS	443	Business Statistics III ²	<u>3</u> <u>3</u>
		Total Hours³	24 30

¹ A student with a weak background in computers should take CSC 199 or an equivalent course before enrolling in BPA 355. ACC 308 may substitute for BPA 355.

² A student with a weak background in statistics may prefer to enroll in CIS 243 and/or 343 before enrolling in CIS 443.

³ All foundation courses must be completed by the time a student finishes 15 hours of graduate course work.

Total Course Requirements..... 30 hours

ACC 604	Quantitative Financial Controls
CIS 653	Management Science for Managerial Decision Making
ECO 625	Managerial Economics
FIN 602	Corporate Finance
MGT 651	Seminar in Organizational Behavior
MGT 656	Seminar in Strategic Management
MKT 667	Marketing Planning and Application
Electives (9 hrs)	

Note: All electives must be selected with the approval of the M.B.A. director. At least six hours must be taken at the 600-level. No foundation course may be used as an M.B.A. elective.

Other Degree Requirements

In order to receive the degree, a candidate must earn a minimum grade point average of 3.00 on all graduate courses taken at Murray State University. Repeating a graduate course does not cancel a previous grade in the course. A candidate may not repeat a course in which a previous grade of *A* or *B* was earned for credit.

A minimum grade of *C* is required to receive credit for a graduate course.

No more than one *C* will be accepted in fulfillment of the seven M.B.A. core courses.

A candidate is awarded one “quality deficit point” for each grade of *C* received, two points for each *D*, and three points for each *E*. Upon receipt of four quality deficit points, a candidate is dropped from the program without opportunity for readmission except by special permission. (Also see Scholastic Probation, Chapter 2.)

A maximum of nine semester hours of graduate credit taken at another institution may be transferred toward the fulfillment of core courses or electives, provided that the course was not used to complete another degree, that a grade of *B* or better was earned, and that a 3.00 grade point average is earned in Murray State graduate courses. Transfer courses must fall within the eight-year time limit allowed for completion of the master’s degree.

Foundation courses may be completed at Murray State University or at any regionally accredited four-year institution or recognized foreign institution, before or after acceptance into the program. Only the 100- and 200-level foundation courses may be completed at a community or junior college.

During the fall and spring semesters, a candidate may take a maximum of 12 credit hours of graduate work or 15 credit hours if at least three hours are foundation work. The maximum load during each five week summer session is seven hours.

A student may fulfill a foundation course by passing a proficiency test. A proficiency test may be taken only once per course. There is a fee for taking the test. Call the assistant dean’s office (270-809-6970) to schedule each proficiency test.

A candidate who reapplies after a period of inactivity of 36 months will be subject to the degree requirements in effect at the time of reapplication.

A few applicants who have taken the GMAT or GRE and are denied admission may subsequently be admitted by a special admissions process on the basis of significant work experience or other extraordinary credentials.

**Master of Business Administration
Accounting Option**

CIP 52.0101

ACCREDITED BY:

AACSB-International—The Association to Advance Collegiate Schools of Business.

NON-THESIS TRACK ONLY

The M.B.A. accounting option curriculum requirements are divided into three parts: (1) foundation courses, (2) undergraduate accounting courses and (3) graduate courses.

The undergraduate courses are designed to form a base upon which the student can build in the graduate phase of the program. A student who has satisfactorily completed one or more equivalent courses will be given a waiver for previous work. A minimum grade of *C* is required to satisfy each undergraduate course.

Foundation Courses

		<u>Level I</u>	<u>Hours</u>
ACC 490	Survey of Accounting		3
	-or-		
ACC 200	Principles of Financial Accounting		3
	-and-		
ACC 201	Principles of Managerial Accounting		3
ECO 500	Foundations of Economic Analysis		3
	-or-		
ECO 230	Principles of Macroeconomics		3
	-and-		
ECO 231	Principles of Microeconomics		3
MAT 220	Business Calculus		3 3
	<u>Level II</u>		
BPA 355	Information Systems and Decision Making ¹		3 3
FIN 330	Principles of Finance		3 3
MGT 350	Fundamentals of Management		3 3
MKT 360	Principles of Marketing		3 3
	<u>Level III</u>		
CIS 443	Business Statistics III ²		3 3
	Total Hours³		24 30

¹ A student with a weak background in computers should take CSC 199 or an equivalent course before enrolling in BPA 355. ACC 308 may substitute for BPA 355.

² A student with a weak background in statistics may prefer to enroll in CIS 243 and/or 343 before enrolling in CIS 443.

³ All foundation courses must be completed by the time a student finishes 15 hours of graduate course work.

Undergraduate Accounting Courses

ACC 300	Intermediate Accounting I
ACC 301	Intermediate Accounting II
ACC 302	Federal Income Tax
ACC 303	Cost Accounting
ACC 506	Principles of Auditing and Assurance Services

Total Course Requirements..... 30 hours

ACC course	600 level (3 hours)*
CIS 653	Management Science for Managerial Decision Making
ECO 625	Managerial Economics
FIN 602	Corporate Finance
MGT 651	Seminar in Organizational Behavior

- MGT 656 Seminar in Strategic Management
- MKT 667 Marketing Planning and Application

Electives to be selected from the following:
(Two courses must be at 600-level)

- ACC 500 Advanced Accounting
- ACC 501 Accounting for Governmental and Nonprofit Entities
- ACC 502 Advanced Income Tax
- ACC 503 Cost Management in the Global Economy
- ACC 586 International Experience in Accounting
- ACC 602 Tax Planning and Research
- ACC 604 Quantitative Financial Controls
- ACC 605 Corporate Governance and Accounting Ethics
- ACC 606 Auditing Theory and Practice
- ACC 608 Seminar in Accounting Information Systems
- ACC 609 Issues in Corporate Financial Reporting
- BPA 540 Legal Obligations of Business

Note: All electives must be selected with the approval of the M.B.A. director. At least six hours must be taken at the 600 level. No foundation course may be used as an M.B.A. elective.
*The M.B.A. option in Accounting consists of 12 hours of graduate-level accounting courses, nine hours of which must be at the 600 level.

Master of Business Administration E-Business Option

CIP 52.0101

ACCREDITED BY:
AACSB-International—The Association to Advance Collegiate Schools of Business.

NON-THESIS TRACK ONLY

Required Undergraduate Courses

- CIS 307 Decision Support Technologies
- Approved programming language course (3 hrs)

Total Course Requirements..... 30 hours

- ACC 604 Quantitative Financial Controls
- CIS 653 Management Science for Managerial Decision Making
- ECO 625 Managerial Economics
- FIN 602 Corporate Finance
- MGT 651 Seminar in Organizational Behavior
- MGT 656 Seminar in Strategic Management
- MKT 667 Marketing Planning and Application

E-Business Courses

- CIS 609 Data Warehousing and Data Mining
or
- MKT 685 Business Geographics for Managers
- CIS 507 Fundamentals of Distributed Database Applications
- MKT 675 Marketing Applications in E-Business

Other Degree Requirements

In order to receive the degree, a candidate must earn a minimum grade point average of 3.00 on all graduate courses taken at Murray State University. Repeating a graduate course does not cancel a previous grade in the course. A candidate may not

repeat a course in which a previous grade of **A** or **B** was earned for credit.

A minimum grade of **C** is required to receive credit for a graduate course. No more than one **C** will be accepted in fulfillment of the seven M.B.A. core courses.

A candidate is awarded one “quality deficit point” for each grade of **C** received, two points for each **D**, and three points for each **E**. Upon receipt of four quality deficit points, a candidate is dropped from the program without opportunity for readmission except by special permission. (Also see Scholastic Probation, Chapter 2.)

A maximum of nine semester hours of graduate credit taken at another institution may be transferred toward the fulfillment of core courses or electives, provided that the course was not used to complete another degree, that a grade of **B** or better was earned, and that a 3.00 grade point average is earned in Murray State graduate courses. Transfer courses must fall within the eight-year time limit allowed for completion of the master’s degree.

Foundation courses may be completed at Murray State University or at any regionally accredited four-year institution or recognized foreign institution, before or after acceptance into the program.

Only the 100- and 200-level foundation courses may be completed at a community or junior college.

During the fall and spring semesters, a candidate may take a maximum of 12 credit hours of graduate work or 15 credit hours if at least three hours are foundation work. The maximum load during each five week summer session is seven hours.

A student may fulfill a foundation course by passing a proficiency test. The proficiency test may be taken only once per course. Call the assistant dean’s office (270-809-6970) to schedule each proficiency test. There is a fee for taking the test.

A candidate who reapplies after a period of inactivity of 36 months will be subject to the degree requirements in effect at the time of reapplication.

A few applicants who have taken the GMAT or GRE and are denied admission may subsequently be admitted by a special admissions process on the basis of significant work experience or other extraordinary credentials.

For additional information, request an *M.B.A. Program Information Bulletin* from the M.B.A. director.

Department of Accounting

Chair - Don Chamberlain
351 Business Building
270-809-4193
acc@murraystate.edu

Graduate courses offered in the Department of Accounting support the previously described M.B.A. and M.B.A./Accounting option.

Most states require students to obtain 150 college credit hours and a baccalaureate degree to sit for the Certified Public Accountant (C.P.A.) examination. While the state of Kentucky now allows students with a baccalaureate degree and 120 college credit hours to take the exam, 150 college credit hours must still be earned before a license to practice as a C.P.A will be granted. The M.B.A. and M.B.A./Accounting option enable students to meet this requirement and provide additional coursework that facilitates successful completion of the C.P.A licensure exam as well as other accounting certification examinations.

Master of Professional Accountancy

CIP 52.0301

This program has been suspended and no new students are being admitted. For current program information, contact the chair of the department.

Department of Computer Science and Information Systems

Chair - Victor Raj
Graduate Coordinator - Solomon Antony
652 Business Building
270-809-2094
csis@murraystate.edu

Master of Science in Information Systems

CIP 52.1201

The Master of Science in Information Systems prepares individuals for management careers in the vast and growing field of information systems. This field includes such diverse areas as software development, information management, data analysis, information security, information systems architecture, system planning and systems analysis, to name a few. According to the Bureau of Labor and Statistics "employment of computer and information systems managers is expected to grow much faster than the average for all occupations through the year 2012. Technological advancements will boost the employment of computer-related workers; as a result, the demand for managers to direct these workers also will increase...Opportunities for obtaining a management position will be best for workers possessing an MBA with technology as a core component, or a management information systems degree, advanced technical knowledge, and strong communication and administrative skills." (<http://stats.bls.gov/oco/ocos258.htm>).

The curriculum consists of seven core courses and three elective courses. This structure prepares the student for both depth and breadth in the information systems field. A sound foundation in business and information systems is expected prior to beginning the program. (See foundation courses and skill requirements listed below.)

Upon successful completion, graduates can move into careers as information systems managers, business analysts, software architects, college-level instructors, information systems auditors, project managers, consultants etc. based on individual strengths, skills and inclination.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). Additional information about unconditional and conditional admission follows.

Unconditional

Applicants with any 4-year undergraduate degree can apply for the program. The Master of Science in Information Systems program admission committee will evaluate each application packet and determine the applicant's potential for success in the graduate program. The complete application packet in-

cludes a) official undergraduate transcript, b) official GRE (or GMAT) score report, c) three letters of recommendation from supervisors or college professors, d) a current resume, and e) an essay in English that describes life experiences depicting leadership skills; life experiences depicting creative ability; and the student's knowledge of business and/or information technology skills.

International students must submit TOEFL scores also. University TOEFL score requirements will apply to the M.S. in Information Systems also. There is no specific deadline for applications. The committee will review complete applications as and when they are received.

Conditional

Conditional admission into the program may be granted to those not qualifying for unconditional admission if the potential to succeed is demonstrated. A student may be admitted to full standing after completion of one semester (nine hours) of satisfactory work including prerequisites, with the recommendation of the graduate coordinator.

Foundation Courses and Skills¹

ACC	490	Survey of Accounting ²
CIS	317	Principles of Information Systems Analysis and Design
CIS	343	Business Statistics II ³
CIS	407	Advanced Database Management Systems
CSC	332	Visual Basic Programming II ⁴
FIN	330	Principles of Finance

NON-THESIS TRACK ONLY

Total Course Requirements..... 30 hours

ACC	604	Quantitative Financial Controls
CIS	609	Data Warehousing and Data Mining
CIS	650	Software Methodologies
CIS	645	Decision Support and Expert Systems
CIS	695	Comprehensive Project in Computer Information Systems
CSC	510	Data Communication and Networking
TSM	603	Telecommunications Project Management

Approved electives (9 hrs)

Electives can be chosen from graduate level courses in TSM or math or other business disciplines. All electives must be approved by the program director.

Other Degree Requirements

In order to receive the degree, a candidate must earn a minimum grade point average of 3.00 on all graduate courses taken at Murray State University. Repeating a graduate course does not cancel a previous grade in the course.

A minimum grade of **C** is required to receive credit for a graduate course. No more than one **C** will be accepted in fulfillment of the seven core courses.

For additional information, please contact the program's graduate coordinator.

¹On evaluation of the student's academic qualifications and work experience, the program director may waive the requirement of one or more foundation courses.

²Or ACC 200 and ACC 201.

³Or MAT 135.

⁴Or equivalent programming knowledge in another object-oriented language.

**Department of Economics
and Finance**

Chair - David Brasfield
307 Business Building
270-809-4188
eco.fin@murraystate.edu

In addition to supporting the M.B.A. program and other graduate programs, the Department of Economics and Finance offers the master of science degree in economics with two options. The first has a traditional M.S. in economics curriculum under which the student, subject to the judgment of the graduate coordinator, has a relatively wide choice of electives. The second option allows the student to take a concentration of courses in finance. Both options are designed to prepare a student for further study at the doctoral level, or to qualify a student for a variety of career positions in business, government, and private agencies, or to prepare students for teaching at the community and junior college level.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). Additional information about unconditional and conditional admission is following.

Unconditional

Admission into the M.S. in economics program is open to persons with (1) an acceptable undergraduate grade point average (normally 2.5 on a 4.00 scale), and (2) an acceptable score on the Graduate Management Admission Test (GMAT) or on the Graduate Record Examination (GRE) (normally at least 50th percentile on the quantitative portion and 10th percentile on the verbal section), and (3) an undergraduate minor in economics or its equivalent.

The applicant's overall record, including undergraduate training, experience, and GMAT or GRE score, will be evaluated by the department graduate coordinator to determine the prospective student's suitability for graduate work in economics.

Conditional

Admission into the M.S. in economics program may be granted to an individual not qualifying for unconditional admission if the individual demonstrates the potential to succeed. A conditional student may be admitted to full standing after completion of one semester (nine hours) of satisfactory work including prerequisites, with the recommendation of the M.S. graduate coordinator.

Master of Science in Economics

CIP 45.0601

NON-THESIS TRACK

Total Course Requirements..... 30 hours

- ECO 630 Macroeconomic Theory
- ECO 631 Microeconomic Theory
- ECO 680 Quantitative Methods of Economics and Business
- ECO 685 Econometrics
- or-
- ECO 690 Forecasting for Business and Government
- ECO elective, 500 or 600 level (6 hrs)

- ECO elective, 600 level (3 hrs)
- Approved elective, 600 level¹ (3 hrs)
- Approved electives, 500 or 600 level¹ (6 hrs)

Other Degree Requirements

- Minimum grade of **B** in both ECO 630 and ECO 631.

THESIS TRACK

Total Course Requirements.....30 hours

Same as above with the following substitutions:

- ECO 698-699 Thesis
- ECO elective, 500 or 600 level..... decrease to 3 hrs
- Delete ECO elective, 600 level (3 hrs)

Other Degree Requirements

- Oral exam over the thesis.
 - Minimum grade of **B** in both ECO 630 and ECO 631.
- ¹No more than one elective (3 hrs) may be taken in any one of the following disciplines: accounting, computer and information systems, management, marketing, or office systems.

**Master of Science in Economics
with Emphasis in Finance**

CIP 45.0601

NON-THESIS TRACK

Total Course Requirements.....30 hours

- ECO 630 Macroeconomic Theory
- ECO 631 Microeconomic Theory
- ECO 680 Quantitative Methods of Economics and Business
- ECO 685 Econometrics
- or-
- ECO 690 Forecasting for Business and Government
- ECO electives, 500 or 600 level (6 hrs)
- Approved FIN electives, 500 or 600 level (6 hrs)
- Approved FIN electives, 600 level (6 hrs)

Other Degree Requirements

- Minimum grade of **B** in both ECO 630 and ECO 631.

THESIS TRACK

Total Course Requirements.....30 hours

Same as above with the following substitution:

- ECO 698-699 Thesis
- Delete ECO electives, 500 or 600 level (6 hrs)

Other Degree Requirements

- Oral exam over the thesis.
- Minimum grade of **B** in both ECO 630 and ECO 631.

**Master of Arts in Education (Secondary
Education) with Economics Specialization**

CIP 13.1205

Students seeking the M.A.Ed. in secondary education (see Chapter 5) may complete an economics specialization with 12 hours of 500 or 600 level economics courses.

**Department of Journalism
and Mass Communications**

Chair - Bob Lochte
Graduate Coordinator - Celia Wall
114 Wilson Hall
270-809-2387
jmc@murraystate.edu

The Department of Journalism and Mass Communications offers the master of arts and the master of science in mass communications. The objectives of the graduate program are: 1) to prepare graduate students for positions in mass communications and research; 2) to provide a foundation for study at the doctoral level; and 3) to prepare graduate students for teaching mass communications at the college level.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). Additional requirements follow.

Unconditional

Unconditional admission is granted to applicants who have a bachelor's degree from an ACEJMC-accredited, or similarly rigorous, program in any mass communications field; and whose undergraduate GPA is 2.75 or higher. International students must submit TOEFL scores of at least 213 computer-based test, including at least 21 on each of the three verbal areas, or 20 in each of the four areas of the Internet-based test in addition to the above requirements.

Conditional

Conditional admission *may* be granted to applicants who have a bachelor's degree from an accredited college or university in fields other than mass communications; or whose undergraduate GPA is between 2.50 and 2.74. The graduate coordinator may require up to nine (9) hours of additional prerequisite courses, including JMC 599, for any student admitted conditionally. Conditional students are admitted to full standing after completion of nine (9) hours of graduate course with a 3.0 GPA or better and no single grade below a *B*.

International students entering the JMC program from the Murray State University English as Second Language program (ESL) must complete Level 6 AND students must submit TOEFL scores of at least 213 computer-based test, including at least 21 on each of the three verbal areas, or 18 in each of the four areas of the Internet based test in addition to the above requirements.

**Master of Arts or Master of Science
in Mass Communications**

CIP 09.0101

NON-THESIS TRACK ONLY

Total Course Requirements30 hours

JMC 515 History of U.S. Journalism and Broadcasting

-or-

JMC 600 Seminar in International Mass Communication

-and-

JMC 630 Theories of Mass Communications

JMC 648 Mass Media Industries

JMC 660 Methods of Communications Research

JMC 670 Philosophical and Ethical Concepts of the
Mass Media

JMC 690 Comprehensive Project

Three courses chosen from the following:

JMC 515 History of U.S. Journalism and Broadcasting

JMC 558 New Media Technologies

JMC 560 Alternative Media Criticism

JMC 585 Specialized Journalism/Radio TV I

JMC 586 Special Topics

JMC 600 Seminar in International Mass Communications

JMC 601 Media, Culture, Gender and Race

JMC 602 Seminar in Advertising

JMC 603 Seminar in Public Relations

JMC 622 JMC Study Abroad

JMC 677 Directed Individual Study

JMC 668 Critical Analysis of Mass Media

Elective, 500 or 600 level

(as approved by graduate coordinator)

Other Degree Requirements

- The semester before enrolling in JMC 690, the student must meet with the graduate coordinator, present a proposal for the project, and gain approval of the proposal.
- At least 18 total hours must be at the 600-level.
- For the master of arts degree only, the candidate must demonstrate competency in an approved foreign language.

**Department of Management,
Marketing and Business Administration**

Chair - Terry Holmes
451 Business Building
270-809-6196
mgt.mkt@murraystate.edu

The graduate courses taught by the Department of Management, Marketing and Business Administration support the previously described M.B.A. program and other graduate programs.

**Master of Arts in Education
(Secondary Education) with
Business and Marketing Specialization**

CIP 13.1205

Students seeking the M.A.Ed. in secondary education (see Chapter 5) may complete a business and marketing specialization with 12 hours of 500 or 600 level courses. Courses must be planned and approved by a business education advisor. BED 610, Foundations of Business and Marketing Education, is required as one of the courses.

**Department of
Organizational Communication**

Chair - Steve Cox
Graduate Coordinator - Edward Brewer
312 Wilson Hall
270-809-4483

orgcom@murraystate.edu

The Department of Organizational Communication offers the Master of Arts and Master of Science degrees in organizational communication. Graduate study in organizational communication prepares students for effective membership, humane management, and prudent leadership in organizations. Coursework focuses on various organizational, interpersonal, and small group communication processes vital to personal and organizational success. Students acquire advanced communication knowledge and skills in such areas as conflict resolution, managerial communication, leadership, customer relations, team communication, organizational change, healthcare communication, persuasion, intercultural communication, training, and organizational learning.

The program, which is theoretically and experientially oriented, provides students with course offerings allowing in-depth study and opportunity to pursue individual interests. Coursework is designed for both focused study and maximum flexibility to meet the unique career goals of each student. The program prepares individuals (1) to enter areas of business, industry, government, and nonprofit administration, where knowledge of and competence in communication are essential; (2) to enter other vocations where communication is of prime importance (e.g. the ministry, law, public service); (3) to continue study of communication at the doctoral level; and (4) to teach organizational communication at the college level. Recent degree options in organizational communication and the innovative “Weekender” master’s degree in organizational communication reflect the department’s commitment to respond to regional needs.

Weekender Program

Courses are taught in a unique weekend format to meet the needs of employed professionals who are seeking advancement, desiring additional professional development, or considering a career change. Typical weekend courses meet five times during the semester, with the first meeting on a Friday evening and the final meeting on a Saturday. The middle three weekends meet Friday evening from 5 to 9 p.m. and Saturday from 9 a.m. to 5 p.m. A schedule of alternate weekends allows students to take up to two weekend courses per semester. Students often supplement weekend courses with departmental independent study courses. Additional evening courses are offered for those students who can attend. Students can also take approved graduate level electives offered by other departments, many of which are delivered through ITV or taken online. The entire program can be finished through weekend and independent directed study courses.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). Additional departmental requirements are as follows:

Unconditional

- An overall GPA of 3.0 in the last two years of undergraduate work with at least a minor in communication, business, or related field.

Conditional

- An undergraduate GPA of at least 2.50.
Conditional students may be required to complete certain undergraduate courses before beginning the program. After beginning the program, conditional students will undergo a review after their first nine hours and are admitted to full standing after completion of **B** or better work and approval of the graduate program coordinator.

International students entering the organizational communication program from the Murray State University English as a Second Language (ESL) program must have completed Level 6 and must score at least 18 in each test area on the TOEFL Internet-based test, a 500 on the TOEFL paper-based test or 178 on the computer-based test. International students who have not completed the ESL program must score at least 18 in each test area on the TOEFL Internet-based test, a 550 on the TOEFL paper-based test or 213 on the computer-based test.

**Master of Arts in
Organizational Communication**

CIP 09.0901

THESIS TRACK

Total Course Requirements.....34 hours

- COM 585 Advanced Organizational Communication
(if not taken for undergraduate degree)
- COM 645 Foundations of Organizational
Communication
- COM 672 Communication in Instructional
Environments (required of laboratory
assistants only)
- COM 685 Seminar in Organizational Communication
- COM 690 Research Methods in Organizational
Communication
- COM 692 Research Practice
- COM 693 Readings in Communication Research
- COM 698-699 Thesis
- Approved COM electives, 600 level
- Approved electives, 500 or 600 level (3-6 hrs)

Other Degree Requirements

- Oral defense of the thesis.
- Written and oral examinations designed to facilitate integrative learning.

NON-THESIS TRACK

Total Course Requirements.....34 hours

Same as above with the following substitution for thesis:

Approved electives, 500 or 600 levelincrease to 6-9 hrs

Other Degree Requirements

Written and oral examinations designed to facilitate integrative learning.

Master of Science in Organizational Communication

CIP 09.0901

NON-THESIS TRACK ONLY

Total Course Requirements.....31 hours

COM 585	Advanced Organizational Communication (if not taken for undergraduate degree)
COM 645	Foundations of Organizational Communication
COM 672	Communication in Instructional Environments (laboratory assistants only)
COM 685	Seminar in Organizational Communication
COM 690	Research Methods in Organizational Communication
COM 692	Research Practice
Approved COM electives, 600 level (3-6 hrs)	
Approved electives, 500 or 600 level (9-12 hrs)	

Other Degree Requirements

Written and oral examinations designed to facilitate integrative learning.

Telecommunications Systems Management

Coordinator - Daniel Clalborne
270-809-6970

A joint venture between the College of Business and Public Affairs and the College of Science, Engineering and Technology, the masters program in telecommunications systems management provides students a core of fundamental courses and the option of choosing a specialization within the curriculum. Although students in the masters program will have the insight and ability to manage all aspects of telecommunications systems, the program option choice will support the aspect of management which interests them most, the physical systems and its components or the business structure and operations that depend on the system.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2).

Unconditional

TSM applicants will be unconditionally admitted if their undergraduate grade point average (GPA) is 3.0 or higher and they submit a Graduate Management Test (GMAT) score of at least 400 or submit a Graduate Record Examination (GRE) score of at least 800. However, if the applicant's GPA is less than 3.0 and they submit a GMAT score that satisfies the GMAT admission formula, or they submit a GRE score that satisfies the GRE admission formula, they will be fully admitted.

GMAT formula: $(200 \times \text{GPA}) + (\text{GMAT score}) > 1,000$

GRE formula: $(200 \times \text{GPA}) + \text{GRE} \geq 1,400$

Note: The GRE formula uses the combined score from the quantitative and verbal sections only. Ask the Educational Testing Service (ETS) to send scores directly to Murray State University using our institution code: 1494.

In addition, candidates must take the TOEFL and score at least 550 on the paper-based exam (or 213 on the computerized version) if English is not their native language or they have not graduated from an accredited English speaking university.

Conditional

TSM applicants may be admitted conditionally if their overall GPA is 2.75 or higher, or at least 3.0 for their last 60 hours of undergraduate study. The applicant could then be fully admitted to the program if the applicant meets at least one of the following two conditions:

1) The applicant takes TSM 601, TSM 610 and one other core course (ACC 604, MGT 651, TSM 602, TSM 603, or TSM 630) as their first nine hours of the program and maintains a 3.33 GPA for these nine hours; or

2) the applicant takes the GMAT or GRE and meets the unconditional admission formula within their first semester in the program.

If either of these conditions is not met, the applicant will be denied admission to the program even if the student has taken coursework in the program.

International Admission

Applicants, from any country where English is a second language, will be required to demonstrate English language proficiency. This can be done by taking the Test of English as a Foreign Language (TOEFL) exam and score at least:

1) 550 pBT (paper-based test)

2) 213 cBT (computer-based test)

3) Minimum of 20 in each band iBT (internet-based test)

Or take the International English Language Testing System (IELTS) exam and score 6.0 on the academic test (with no band <5.5) to be fully admitted into the program.

Master of Science in Telecommunications Systems Management

CIP 11.0401

NON-THESIS TRACK ONLY

Total Course Requirements.....30 hours

ACC 604	Quantitative Financial Controls
MGT 651	Seminar in Organizational Behavior
TSM 601	Telecommunications Principles
TSM 602	Telecommunications Systems
TSM 603	Telecommunications Project Management
TSM 610	Telecommunication Networks Management
TSM 630	Telecommunications Legal Environment: Law, Policy and Regulations
TSM 680	Telecommunications Solution Development

and two of the following:

ACC 608	Seminar in Accounting Information Systems
CIS 507	Fundamentals of Distributed Database Applications
CIS 609	Data Warehousing and Data Mining
CIS 645	Decision Support and Expert Systems
CIS 646	Manager's Guide to Database
CIS 647	Systems Analysis and Design for End User/ Manager
ECO 625	Managerial Economics
FIN 612	Capital Investment Analysis
MKT 667	Marketing Planning and Application
MKT 675	Marketing Applications in E-Business
MKT 685	Business Geographics for Managers
TSM 670	Developing E-Commerce Applications
TSM 688	Telecommunications Systems Practicum



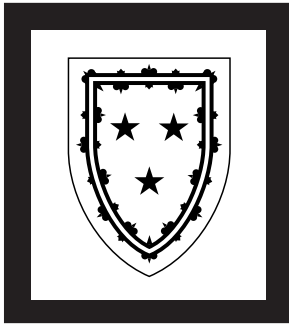
College of Education

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College of Education

Russell Wall, Dean
Janice Hooks, Assistant Dean
Renee Campoy, Interim Assistant Dean
3101 Alexander Hall
Ken Purcell, Graduate Coordinator
3228 Alexander Hall

The College of Education offers graduate programs in the following departments:

Adolescent, Career and Special Education. Graduate programs in middle and secondary education, career and technical education, moderate to severe disabilities, and mild learning and behavior disorders are designed to provide students with excellent classroom, field-based, and clinical experiences. Students have access to a well equipped facility which includes a multimedia lab, networked microcomputer lab and student work areas.

Early Childhood and Elementary Education. The strong field-based orientation of this department and the diverse professional preparation and expertise of the faculty combine to provide students professional preparation in the areas of elementary, gifted education, interdisciplinary early childhood; library media, and reading and writing education. These programs reflect high standards of quality and relevance.

Educational Studies, Leadership and Counseling. Graduate programs in administration, supervision, guidance and counseling and school psychology are designed to prepare students to work in preschool through high school educational environments. In addition, there is a human development and leadership degree that prepares students to work in administrative positions and take leadership roles in a wide variety of settings. A 60-hour non-school program in community counseling is also available. Students study with professionally active faculty in educational settings that are large enough to maximize learning yet small enough to provide a close working relationship between students and instructor. The on-campus facilities are designed to reflect recent trends in technology.

Degrees. Degrees offered by the College of Education are master of arts in education, master of arts, master of science, and specialist in education.

Graduate certificates. The College of Education offers numerous programs toward Kentucky teacher certification at the post baccalaureate and post master's levels. In addition to degree and rank certification programs, the College of Education also offers 12-hour endorsement programs in gifted education, environmental education, school safety, and instructional computer technology. All offerings are described under the appropriate departments.

NOTE: Requirements for teacher certification are established by the Kentucky Education Professional Standards Board (EPSB). Murray State University publishes these requirements as a service to students, but certification requirements outlined in this *Bulletin* may not reflect latest board policy. For up-to-date information, students should check with the chairs of the professional departments, the EPSB website at www.kyepsb.net, by calling 888-598-7667,

or Kentucky Administrative Regulations (available in the Legal Resources Library and the Kentucky Department of Education website www.kde.state.ky.us).

Specialist in Education Degrees

The primary purpose of the specialist in education degree is to provide a plan of advanced study. These programs provide greater depth of specialization than is possible at the master's level, and each candidate's plan of study will be tailored to meet individual needs.

Programs leading to the specialist in education degree are offered in guidance and counseling, school administration, elementary education, middle school education, and secondary education.

Admission to graduate study. An individual seeking a specialist degree who is not already a graduate student at Murray State University must apply to Graduate Admissions for admission to graduate study. An individual who has completed requirements for a master's degree at Murray State University must apply for readmission before the individual can be accepted for the specialist in education degree program. In addition, official records of (1) all graduate work, (2) all undergraduate work, and (3) Graduate Record Examination scores, if applicable, must be sent to Graduate Admissions.

Requirements for Admission

In addition to Murray State University requirements (see Chapter 2), an applicant must have:

- a master's degree or acceptable alternative from a regionally accredited college or university;
- basic graduate courses in the areas of educational research, educational foundations, and curriculum if applicable;
- one year of successful experience in a certified position in an educational setting;
- evidence of satisfactory scholarship;
- selection of an appropriate field of specialization;
- a satisfactory score on the aptitude section of the Graduate Record Examination if required by the program;
- approval by the graduate faculty in the specialization field; and
- valid teaching certificate (where required).

Total Course Requirements

For all specialist programs in the College of Education, students must complete a minimum of 50 percent of their coursework, excluding thesis and practicum credit, in courses numbered 600 or above. Specific requirements for each degree program are outlined under the department listings.

Other Degree Requirements

In addition to other Murray State University requirements (see Chapter 3), the student must apply for admission to candidacy upon completion of the first nine hours of the graduate program.

Requirements for all post master's degree programs include:

- a grade average of **B** with no course accepted with a grade lower than **C**;
- completion of all requirements for the degree within eight calendar years from beginning of first course (per university regulations).

Committee. The student's committee will be appointed by the collegiate coordinator of graduate programs during the first semester of work on the specialist in education degree. Until the committee is appointed, the chair of the department, or a designated representative will act as the student's program advisor. This committee, in consultation with the student, will develop a plan of study and will guide the student's specialty study.

Specialty study. Specialty study (3-6 hours of credit) must embody results of a study directly related to the candidate's area of specialization. The original and three unbound copies of the specialty study including an abstract (1200-1500 words), suitable for publication, must be presented to the appropriate department or division in final approved form. The form and style of the specialty study shall follow *Guidelines for the Preparation of Master's Theses*, available in Graduate Admissions of Murray State University.

The specialty study topic must be approved by the student's committee. After the topic has been approved, the student may enroll for ADM/EDU/GUI 798 and/or 799.

Master's Degree Programs

These requirements are in addition to the general requirements for all graduate students listed in Chapter 2.

Requirements for Admission

All students applying for admission to a master's degree program offered by the College of Education must have completed a baccalaureate degree from a regionally accredited college or university. Some program areas require a score on the general test (V + Q) of the Graduate Record Exam (GRE); consult departmental sections of this bulletin.

Unconditional

To qualify for unconditional admission, an applicant must have:

- an appropriate undergraduate major;
- a GPA of 3.0;
- some programs in the college require a Kentucky letter of eligibility for the beginning teacher internship program or a Kentucky provisional certificate or comparable documentation from another state department of education. Contact departmental chair for information;
- international students must meet TOEFL score requirements listed in *Chapter 2*.

Conditional

Conditional admission may be granted to students who meet one of the following guidelines:

- an undergraduate GPA of at least 2.5 but less than 3.0;
- all unconditional admission requirements specified above except coursework to meet requirements for appropriate majors or certification.

- Students without appropriate certification may be admitted upon departmental review by signing a waiver acknowledging non-certification.

Students who do not meet admissions criteria specified above may be reviewed by the appropriate departmental graduate committee. Following a full review of all student records, that committee will:

A. recommend conditional admission (permissible only when the student meets university graduate admission requirements), carefully specifying conditions; or

B. recommend remediation and reschedule that student for departmental graduate committee admission review once remediation is complete; or

C. deny admission.

Students admitted conditionally who successfully complete nine hours of graduate work will be reassigned to unconditional status. A student admitted conditionally who has a GPA of less than 3.0 will be dropped from the graduate program. A graduate student dropped for academic reasons may reapply after remaining out of the graduate program for one semester.

Candidacy for the Master's Degree

At the completion of nine semester hours of graduate work at Murray State University or one semester in residence the student must apply for candidacy for the degree. Candidates for the master's degree in the College of Education must (1) submit appropriate Graduate Record Examination scores if required, and (2) be admitted unconditionally to the master's program or have satisfied all conditions specified by the department for conditional admission.

Additional Requirements

For thesis and non-thesis track options in all College of Education graduate degree programs, see descriptions under appropriate departments.

For all master's programs in the College of Education, students must complete a minimum of 50 percent of their coursework, excluding thesis and practicum credit, in courses numbered 600 or above. Students must complete all requirements for the degree within eight calendar years from beginning of first course (per university regulations).

Students may transfer up to 12 semester hours of credit from a regionally accredited institution, providing such credit is acceptable to the student's major department and approved by the student's advisor. The grade in a transfer course must be **B** or better.

Some graduate programs in education have prerequisites that include teacher certification. Students who desire admission to these programs but do not hold teacher certification may seek a waiver. Please contact the appropriate department chair or collegiate coordinator of graduate programs.

All candidates for the master of arts in education degree should consult with appropriate program faculty for specific program course requirements.

Requirements for all master's programs include:

- a grade average of **B** with no course accepted with a grade lower than **C**;
- completion of all requirements for the degree within eight calendar years from beginning of first course (per university regulations); and
- candidates may be required to pass a comprehensive examination developed and administered by the appropriate academic department and/or receive a *pass* on a professional portfolio.

Non Degree Post Master's Certification Programs (Rank I)

NOTE: These programs are specific to Kentucky and may not transfer to other states.

Requirements for Admission

In addition to Murray State University requirements (see Chapter 2), an applicant must have:

- a master's degree or completed fifth-year program from a regionally accredited institution;
- an application to the appropriate department of the College of Education, submitted to Graduate Admissions of Murray State University;
- an official transcript of all graduate work, sent to Graduate Admissions, if the such work was not earned at Murray State University;
- completion of all required examinations for admission to the graduate program; and
- a valid teaching certificate.

Additional Requirements

Upon admission to the program, an advisor will be assigned to guide the student's work.

During the first semester of post master's study, the student must submit a program of study that has been planned with the assigned advisor. The program of studies must be approved by the student's advisor and the collegiate coordinator of graduate programs and filed in Teacher Education Services during the first semester of study.

Requirements for all post master's programs include:

- 50 percent of courses in program open to graduate students only;
- a grade average of **B** with no course accepted with a grade lower than **C**;
- a minimum of 15 hours earned at Murray State University; and
- completion of all requirements for the certification program with 10 calendar years from beginning of first course or experience used in the program.

Non Degree Post Baccalaureate (Fifth-Year) Certification Programs

NOTE: These programs are specific to Kentucky and may not transfer to other states.

The College of Education offers fifth-year programs for the renewal of provisional teaching certificates and Rank II classification.

Requirements for Admission

In addition to Murray State University requirements (see Chapter 2), the applicant must have a Kentucky teaching certification or its equivalent.

Additional Requirements

The fifth-year program will be planned individually with each applicant by the assigned advisor. After the fifth-year program has been planned with the individual it is subject to the approval of the collegiate coordinator of graduate programs.

Requirements for all post baccalaureate programs include:

- 32 hours with a grade point average of no less than that required for teacher education graduates and for the total program;
- at least 12 hours in 500-600 level coursework;
- at least 12 hours in professional education;
- at least 12 hours from the area of the teacher's specialization or completion of a 12 hour educational endorsement;

- a maximum of 12 hours of work transferred from another senior college.

Note: Credit earned at a junior college or earned by correspondence or challenge examinations cannot be applied toward the fifth-year program. Courses previously taken for credit may not be repeated for credit. Completion of all requirement for the certification program with 10 calendar years from beginning of first course or experience used in the program required.

State regulations regarding fifth-year programs provide that a portion of the college coursework may be replaced with prior approved staff development activities. This provision is not acceptable in every discipline and in all instances is only applicable when approved in advance by the student's advisor and included in a planned fifth-year program. Contact the department chair for information related to fifth-year programs.

Initial Teaching Certification for Graduate Students

Graduate students who currently hold no teaching certificate may become eligible for certification if they enroll in an initial certification program, meet the criteria for admission to teacher education and student teaching and fulfill the requirements for certification.

General Requirements for Certification in Kentucky

Any person who wishes initial certification in the Commonwealth of Kentucky must have:

- completed a teacher education program (including student teaching);
- earned a passing score on the Praxis II Specialty Exam(s) and the Principles of Learning and Teaching exam;
- applied for a statement of eligibility; and
- successfully completed a one-year Kentucky teacher internship.

Students seeking certification or to add additional certification to current Kentucky teaching certificates should:

- complete and have signed a TC-1 form;
- complete transcript form;
- mail completed/signed TC-1 form and transcript request form to MSU Teacher Education Services, 2101 Alexander Hall, Murray, KY 42071.

Records and information on all the above standards and requirements are maintained in the Teacher Education Services Office, 2101 Alexander Hall, (270) 809-2054.

Education Services

Environmental Education Center. The Environmental Education Center, 320 Alexander Hall, offers services to pre-service and in-service teachers and other interested persons in the Murray State University service region. Materials and consulting services are available through the center. For additional information, contact the Environmental Education Center, (270) 809-2537.

Teacher Education Services. The College of Education provides students enrolled in teacher education programs with a wide variety of clinical and field experiences, including opportunities to observe and participate in regular public school classrooms.

Teacher Education Services, 2101 Alexander Hall, is responsible for the coordination of admission to teacher education, recommendations for certification and rank changes, field participation activities, student teaching, teacher education records, the alternative route for certification, and the Kentucky

Teacher Internship Program for first-year teachers in the Murray State University service region. For additional information, contact Teacher Education Services, (270) 809-2054.

Center for Education Finance and Law. The Center for Education Finance and Law serves as a current resource, clearinghouse and research facility for information relative to public school funding equity and adequacy litigation that has occurred in a majority of states. For additional information, contact The Center for Education Finance and Law, (270) 809-6471.

Center for Gifted Studies. The Center for Gifted Studies serves as a resource to support excellence in Gifted Education. The Center, located at 3205 Alexander Hall, collaborates with pre-service and graduate education students, the school psychology program, and educators to provide services to parents and gifted children in the region. Special professional development programs for teachers and enrichment opportunities for gifted students are available during the academic year and the summer. The William O. Price Gifted Resource Collection contains books and other educational materials that are available on loan. For additional information, contact the Center for Gifted Education, (270) 809-2539.

Department of Adolescent, Career and Special Education

Chair - Ginny Richerson
3200D Alexander Hall
270-809-2538

The Department of Adolescent, Career and Special Education prepares graduate level educators to use current theory and the research process to develop and implement effective diagnostic and remedial strategies. The specialist degree is offered at the middle school and secondary school levels. A student may complete a master of arts in education degree in middle school education, secondary education, and special education. A master of science degree is offered in career and technical education. In addition to the master's programs, fifth-year, and Rank I programs are available in middle, secondary, and special education. The department's programs are accredited by the National Council for Accreditation of Teacher Education (NCATE).

Requirements for Admission

Applicants must meet Murray State University requirements (see Chapter 2) and the College of Education requirements given at the beginning of this chapter.

Requirements for Candidacy for a Master's Degree

See Murray State requirements in Chapter 3 and College of Education requirements at the beginning of this chapter.

Specialist in Education: Teacher Education and Professional Development

CIP 13.1206

Total Course Requirements.....30 hours

EDP 675 Advanced Educational Psychology
EDU 622 Philosophy of Education
-or-

EDU 623 Educational Sociology
EDU 798 Specialty Study
ELE 647 Curriculum in the Elementary School
-or-
MID 640 Middle School Curriculum
-or-
SEC 641 Building the Curriculum of the
Secondary School

Courses approved in advance by the student's specialist committee (15 hrs)

Other Degree Requirements

Defense of specialty study. See MSU/COE requirements.

Master of Science in Career and Technical Education

CIP 13.1309

ACCREDITED BY:

National Council for Accreditation of Teacher Education (NCATE).

This non-thesis master of science degree in career and technical education is appropriate for teachers concentrating in agriculture, business and marketing, family and consumer sciences, technology education, industrial education, and adult education and industrial training. See your advisor for specific course recommendations as this degree may be used with appropriate emphasis to:

- achieve Rank II classification for certified teachers in the career and technical education disciplines,
- complete the coursework required to become eligible to pursue vocational administration positions in supervision, coordination, and principalship,
- become eligible for initial certification in career and technical education (grades 5-12) when combined with an appropriate technical bachelor's degree and /or other needed technical courses, and
- prepare members of business/industry in the development and operation of training programs.

NON-THESIS TRACK ONLY

Total Course Requirements..... 30 hours

CTE 675 Experienced Teacher Practices in Career and Technical Education
CTE 694 Research in Career and Technical Education
CTE, AED, AGR, BED, FCS, or TTE courses, 500- or 600-level, as approved by department (15)
Graduate Electives (9)

Other degree requirements

- An approved program must include at least 15 semester hours at the 600 level or its equivalent.
- Students pursuing Rank II classification for certified CTE teachers may develop an individual program in consultation with their advisor.
- Students pursuing certification in the supervision and coordination of career and technical education may complete the requirements of the certificate as approved departmental electives. Contact a program advisor to identify certification prerequisites and to develop an approved program.

College of Education

- Students pursuing initial teacher certification in CTE disciplines may complete the requirements of the certificate as approved departmental electives. Contact a program advisor to identify certification prerequisites and to develop an approved program.

Assessment

- All candidates must maintain a portfolio which demonstrates mastery of the knowledge and skills identified in the Kentucky Experienced Teacher Standards. This portfolio will be begun as a course requirement of CTE 675 and will be presented and defended to a faculty committee in lieu of a comprehensive examination.¹ Continuous assessment of student progress in demonstrating compliance with both the New Teacher Standards and the Experienced Teacher Standards will be assured as each student reviews progress in development of the portfolio each semester through meeting with the program advisor.
- Students must maintain a minimum graduate GPA of 3.0 as detailed in the current MSU graduate program standards.

¹See initial certification track for portfolio/assessment requirements.

TRACK A RANK II CERTIFICATION

For those students holding the appropriate teacher certification. See course requirements as described above. An individual program will be developed in consultation with advisor.

TRACK B VOCATIONAL ADMINISTRATION Supervision, Coordination, and Principalship

Students must complete the 30-hour course requirements described above, including the following:

ADM 663 School Law
ADM 664 School Principal
and

One course from each of the following curriculum areas:

Organization and Administration of Vocational Education

CTE 560 Seminar in Career and Technical Education
CTE 671 Philosophy of Career and Technical Education
CTE 676 Organization and Administration of Career and Technical Education

Administration and Supervision of Education Personnel

ADM 650 Clinical Supervision
CTE 673 Supervision of Career and Technical Education

Program Planning, Research, and Evaluation in Vocational Education

CTE 561 Planning Technical Education Facilities
CTE 565 Program Planning and Evaluation
CTE 566 Special Problems in Career and Technical Education

Vocational Guidance/Industrial Psychology and Human Relations

ADM 624 School and Community Relations
CTE 562 School and Community Relations for the Technical Instructor
CTE 672 Vocational Guidance
GUI 678 Theories of Vocational Development

GUI 686 Education and Vocational Guidance
PSY 584 Industrial and Organizational Psychology

TRACK C INITIAL 5-12 CERTIFICATION Agriculture, Business and Marketing, Family and Consumer Sciences, Technology Education

CTE 501 Teaching through Application
CTE 502 Instructional Media, Curricula, and Assessment in Career and Technical Education
CTE 503 Planning and Implementing Instruction in Career and Technical Education
CTE 640¹ Student Teaching Practicum in Career and Technical Education
CTE 694 Research in Career and Technical Education
SED 603 Special Education Law and Procedures
-or-
SED 605 Characteristics and Needs of Children and Youth with Mild Disabilities
Discipline Specific Methods Course (3 hrs)
Advisor Approved Teacher Education Support Courses (600-level) (6 hrs)

Note: Teacher certification requires a bachelors degree with major or area in approved technical discipline; additional prerequisite courses may be required; students must successfully complete all required assessments as identified in 704 KAR 20:305; additional requirements for admission to teacher education and student teaching must be met. See advisor for details. To become certified students must successfully complete the internship program identified in 704 KAR 10:690.

Additional Requirements

Contact Teacher Education Services for details on admission to student teaching.

Minimum Praxis II specialty examination and Principles of Learning and Teaching scores required for certification. See advisor for current cut-off scores.

TRACK D BUSINESS AND INDUSTRY DEVELOPMENT

For those students interested in non-certification adult education and industrial training. See core requirements above. An individual program will be developed in consultation with advisor.

¹If full-time status is desired, student must also enroll in CTE 622.

Master of Arts in Education: Middle School

CIP 13.1203

ACCREDITED BY:

National Council for Accreditation of Teacher Education (NCATE).

THESIS TRACK

Total Course Requirements.....33 hours
ADM 630 Methods of Research
EDU 631 Application of Learning and Motivation Principles
EDU 633 Curriculum Development

EDU 645 History of Education in the United States
EDU 698 Thesis

Other Course Requirements

PSY 681 Advanced Adolescent Psychology
Advisor approved courses supporting the teaching field or an educational endorsement specialization. (12 hrs)

Other Degree Requirements

Defense of thesis. See MSU/COE requirements.

NON-THESIS TRACK

Total Course Requirements.....33 hours

Same as above with the following substitution for thesis:

EDU 649 Research in Education¹

Other Course Requirements

Elective (3 hrs)

Other Degree Requirements

Comprehensive examination. See MSU/COE requirements.

¹Should be taken immediately following ADM 630.

Master of Arts in Education: Secondary

CIP 13.1205

ACCREDITED BY:

National Council for Accreditation of Teacher Education (NCATE).

THESIS TRACK

Total Course Requirements.....33 hours

ADM 630 Methods of Research
EDU 631 Application of Learning and Motivation Principles
EDU 633 Curriculum Development
EDU 645 History of Education in the United States
EDU 698 Thesis

Other Course Requirements

EDU 621 Advanced Methods of Teaching
Advisor approved courses supporting the teaching field or an educational endorsement specialization. (12 hrs)

Other Degree Requirements

Defense of thesis. See MSU/COE requirements.

NON-THESIS TRACK

Total Course Requirements.....33 hours

Same as above with the following substitution for thesis:

EDU 649 Research in Education¹

Other Course Requirements

Elective (3 hrs)

Other Degree Requirements

Comprehensive examination.

¹Should be taken immediately following ADM 630.

**Master of Arts in Education
(Secondary Education) with
Business and Marketing Specialization**

CIP 13.1205

Students seeking the M.A.Ed. in secondary education may complete a business and marketing specialization with 12 hours of 500 or 600 level courses. Courses must be planned and approved by a business education advisor. BED 610 is required as one of the courses.

Master of Arts in Education (Secondary Education) with Environmental Education Endorsement Specialization

CIP 13.1205

Refer to the Department of Early Childhood and Elementary Education section for endorsement requirements.

Master of Arts in Education (Secondary Education) with Gifted Education Endorsement Specialization

CIP 13.1205

Refer to the Department of Early Childhood and Elementary Education section for endorsement requirements.

Master of Arts in Education (Secondary Education) with Health Specialization

CIP 13.1205

ACCREDITED BY:

National Council for Accreditation of Teacher Education (NCATE).

Students seeking the M.A.Ed. in secondary education may complete a specialization in health with 12-15 semester hours of health courses.

**Master of Arts in Education
(Secondary Education) with
Industrial Education Specialization**

CIP 13.1205

Students seeking the M.A.Ed. in secondary education may complete an industrial education specialization (including Family and Consumer Studies) with 12 hours of 500 or 600 level industrial education courses.

Master of Arts in Education (Secondary Education) with Instructional Computer Technology Endorsement Specialization

Refer to the Department of Early Childhood and Elementary Education section for endorsement requirements.

Master of Arts in Education (Secondary Education) with Physical Education Specialization

CIP 13.1205

Students seeking the M.A.Ed. in secondary education may complete a specialization in physical education with 12-15 semester hours of physical education courses.

Master of Arts in Education (Secondary Education) with School Safety Endorsement Specialization

Refer to the Department of Early Childhood and Elementary Education section for endorsement requirements.

**CERTIFICATE:
Rank I Classification (30-Hour Program Beyond Master's/Rank II)**

Note: This program is specific to Kentucky and may not transfer to other states.

MIDDLE SCHOOL

Total Course Requirements.....30 hours

- EDP 675 Advanced Educational Psychology
- EDU 622 Philosophy of Education **-or-**
- EDU 623 Educational Sociology
- MID 640 Middle School Curriculum

Electives approved in advance by the student's education advisor (9 hrs)

Courses approved in advance by the student's education advisor (12 hrs)

SECONDARY

Total Course Requirements.....30 hours

- EDP 675 Advanced Educational Psychology
- EDU 622 Philosophy of Education **-or-**
- EDU 623 Educational Sociology
- SEC 641 Building the Curriculum of the Secondary School

Electives approved in advance by the student's education advisor (9 hrs)

Courses approved in advance by the student's education advisor (12 hrs)

**CERTIFICATE:
Rank II Classification (Fifth-Year Program)**

Note: This program is specific to Kentucky and may not transfer to other states.

MIDDLE SCHOOL

Total Course Requirements.....33 hours

- EDU 631 Application of Learning and Motivation Principles
- EDU 633 Curriculum Development
- EDU 645 History of Education in the United States
- PSY 681 Advanced Adolescent Psychology

Additional professional education course

Electives approved in advance by the student's education advisor (6 hrs)

Courses supporting the teaching field or an educational endorsement specialization approved in advance by the student's education advisor (12 hrs)

SECONDARY

Total Course Requirements.....33 hours

- EDU 621 Advanced Methods of Teaching
- EDU 631 Application of Learning and Motivation Principles
- EDU 633 Curriculum Development
- EDU 645 History of Education in the United States

Additional professional education course (3 hrs)

Electives approved in advance by the student's education advisor (6 hrs)

Courses in direct support of the student's teaching major or minor or an educational endorsement specialization approved in advance by the student's education advisor (12)

**CERTIFICATE:
Endorsement for Environmental Education**

Refer to the Department of Early Childhood and Elementary Education section for endorsement requirements.

**CERTIFICATE:
Endorsement for Gifted Education**

Refer to the Department of Early Childhood and Elementary Education section for endorsement requirements.

**CERTIFICATE:
Endorsement for Instructional Computer Technology**

Refer to the Department of Early Childhood and Elementary Education section for endorsement requirements.

**CERTIFICATE:
Endorsement for School Safety**

Refer to the Department of Early Childhood and Elementary Education section for endorsement requirements.

**Master of Arts in Education in
Special Education/Mild Learning and
Behavior Disorders P-12 Certification**

CIP 13.1001

ACCREDITED BY:
National Council for Accreditation of Teacher Education
(NCATE).

This program is designed for individuals certified in regular education who want certification in learning and behavior disorders. This program is also for individuals who hold a categorical special education certificate in one or more areas such as LD, BD, EMH, PH, etc., and want learning and behavior disorders certification. Individuals participating in the alternative route to learning and behavior disorders certification program may also apply for admission to this program once they have received their temporary provisional certificate. Admission to the Teacher Education Program must be obtained. This program can also be used by students with a Rank II status to obtain Rank I status.

NON-THESIS TRACK ONLY

Total Course Requirements.....31 hours

ADM	630	Methods of Research	-or-
SED	646	Survey of Research Applied to Special Populations	
CDI	635	Graduate Seminar in Communication Disorders	
SED	537	Diagnostic Methods	
SED	540	Procedures for Classroom Management and Discipline	
SED	552	Functional Behavior Analysis	
SED	602	Family-Professional Partnerships	
SED	603	Special Education Law and Procedures	
SED	605	Characteristics and Needs of Children and Youth with Mild Disabilities	
SED	615	Collaboration Skills for Educators	
SED	625	Instructional Techniques for Children and Youth with Mild Disabilities	
SED	690	Exit Seminar in Special Education	

Undergraduate Certification Deficiencies

The following course (or an approved reading course for deficiency in reading) must be taken to satisfy undergraduate deficiencies:

REA	612	Foundations of Literacy
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**Master of Arts in Education in
Special Education/Moderate
to Severe Disabilities Certification (P-12)**

CIP 13.1001

ACCREDITED BY:
National Council for Accreditation of Teacher Education
(NCATE).

This program is for individuals with any elementary, middle, secondary, or special education certification who wish to obtain a P-12 certificate in moderate to severe disabilities. This program can also be used by students with a Rank II status to obtain Rank I status.

NON-THESIS TRACK ONLY

Total Course Requirements..... 31 hours

ADM	630	Methods of Research	-or-
SED	646	Survey of Research Applied to Special Populations	
SED	531	Nature and Needs of Individuals with Moderate to Severe Disabilities	
SED	551	Transdisciplinary Assessment of Individuals with Moderate to Severe Disabilities	
SED	552	Functional Behavior Analysis	
SED	553	Instructional Procedures - Students with MSD	
SED	602	Family-Professional Partnerships	
SED	603	Special Education Law and Procedures	
SED	614	Advanced Instructional Technology	
SED	655	Special Education Transition	
SED	690	Exit Seminar in Special Education	
Elective (3 hrs)			

Note: If any of the above courses were completed for initial certification, other courses will be utilized to complete this program.

CERTIFICATE:

Moderate to Severe Disabilities

This program is designed for teachers certified in learning and behavior disorders who wish to obtain a P-12 certification in moderate to severe disabilities. A valid teaching certificate is required for entrance. The student's progress will be continuously assessed throughout the program using established program checkpoints and portfolio entries addressing experienced teacher standards. This program does not lead to a master's degree but can be used as a basis for developing a master's degree or Rank I in Moderate to Severe Disabilities.

Total Course Requirements..... 19 hours

SED	531	Nature and Needs of Individuals with Moderate to Severe Disabilities
SED	551	Transdisciplinary Assessment of Individuals with Moderate to Severe Disabilities
SED	553	Instructional Procedures - Students with MSD
SED	614	Advanced Instructional Technology
SED	655	Special Education Transition
SED	690	Exit Seminar in Special Education ¹
Elective (3 hrs)		

**Master of Arts in Education in Special
Education/Advanced Studies in
Learning and Behavior Disorders**

CIP 13.1001

ACCREDITED BY:
National Council for Accreditation of Teacher Education
(NCATE).

This program is designed for individuals certified in learning and behavior disorders. The program can also be used as a basis for developing a Rank I program. This program is designed for individuals certified in learning and behavior disorders. This program can also be used by students with a Rank II status to obtain Rank I status.

College of Education

THESIS TRACK

Total Course Requirements.....30 hours

- EDU 631 Application of Learning and Motivation Principles
- SED 603 Special Education Law and Procedures
- SED 646 Survey of Research Applied to Special Populations
- SED 698-699 Thesis

Additional Courses (from the following) 15 hrs

- EDU 645 History of Education in the United States
- EDU 664 Techniques of Teaching Environmental Education
- EDU 665 Field Experiences in Environmental Education
- PSY 581 Abnormal Psychology
- SED 540 Procedures for Classroom Management and Discipline
- SED 602 Family-Professional Partnerships
- SED 613 Advanced Behavior Support
- SED 614 Advanced Instructional Technology
- SED 615 Collaboration Skills for Educators
- SED 636 Issues and Trends in Special Education
- SED 650 Administration of Special Education Programs
- SED 651 Social Competence for Safe Environments
- SED 655 Special Education Transition

Other Degree Requirements

Defense of thesis.

NON-THESIS TRACK

Total Course Requirements.....30 hours

Same as above with the following required as substitution for thesis:

- SED 613 Advanced Behavior Support
- SED 655 Special Education Transition

Other Degree Requirements

Portfolio and oral presentation.

Master of Arts in Education in Special Education/Interdisciplinary Early Childhood Education

CIP 13.1001

ACCREDITED BY:

National Council for Accreditation of Teacher Education (NCATE).

This program leads to eligibility for certification in interdisciplinary early childhood education (birth to primary). Appropriate undergraduate majors for program entry are child development, early childhood education, special education, communication disorders, or other human service fields.

THESIS TRACK¹

Minimum Course Requirements33 hours

Interdisciplinary Core Courses21 hrs

- ADM 630 Methods of Research²
- or-
- SED 646 Survey of Research Applied to Special Populations²

- ELE 605 Introduction to Interdisciplinary Early Childhood Education
- ELE 607 Research in Early Childhood Education
- ELE 612 Infant-Toddler Practicum³
- and-
- ELE 613 Clinical Experiences in IECE³
- or-
- SED 640 Practicum (6 hrs)³
- FCS 525 Advanced Child Development Programs³
- SED 526 Education of Young Children with Severe Disabilities
- SED 698-699 Thesis

Elective Requirements (from the following)6 hrs

(Approved by advisor based on undergraduate preparation.)

- EDU 625 Theory and Practice in Classroom Management
- EDU 691 Nature and Needs of Gifted Students
- ELE 604 Advanced Studies in Kindergarten
- FCS 527 Parenting
- SED 505 Special Education Procedures and Strategies for IECE
- SED 552 Functional Behavior Analysis
- SED 553 Instructional Procedures - Students with MSD
- SED 602 Family-Professional Partnerships
- SED 652 Assessment and Program Planning for Infants, Toddlers and Preschoolers
- SED 653 Methods and Materials for Infants, Toddlers and Preschoolers
- SED 660 Problems in Special Education

NON-THESIS TRACK¹

Total Course Requirements.....33 hours

Same as above with the following substitution for thesis:

Electives, from above list..... increase to 12 hrs

¹A minimum of 50 percent of coursework, excluding thesis and practicum credit, must be in course numbered 600 or above.

²Or three hours of graduate level research approved by advisor.

³Students seeking initial certification in education (not currently certified in any educational area) must meet all requirements for admission to Teacher Education and Student Teaching. In order to meet these requirements, students may be required to complete additional undergraduate coursework. Students seeking initial certification in education must complete ELE 612 and 613. Students certified in any education area must take SED 640.

Other Degree Requirements

Students must receive a “pass” on the graduate portfolio. Students electing the thesis track must successfully pass the oral defense. Students seeking initial certification must meet all requirements for admission to Teacher Education and Student Teaching. Teacher certification requirements are subject to change. Please refer to the Education Professional Standards Board (EPSB) website at www.kyepsb.net for current requirements or contact 502-564-4606 or 888-598-7667.

CERTIFICATE:

Rank I Classification-IECE (30-Hour Program Beyond Master's/Rank II)

Total Course Requirements.....30 hours

- ELE 605 Introduction to Interdisciplinary Early Childhood Education
- ELE 607 Research in Early Childhood Education
- FCS 525 Advanced Child Development Programs
- SED 526 Education of Young Children with Severe Disabilities
- SED 640 Practicum (6)

Additional Requirements³ (from the following) 12 hrs

- EDU 691 Nature and Needs of Gifted Students
- ELE 604 Advanced Studies in Kindergarten
- FCS 527 Parenting
- SED 505 Special Education Procedures and Strategies for IECE
- SED 552 Functional Behavior Analysis
- SED 553 Instructional Procedures - Students with MSD
- SED 602 Family-Professional Partnerships
- SED 652 Assessment and Program Planning for Infants, Toddlers and Preschoolers
- SED 653 Methods and Materials for Infants, Toddlers and Preschoolers
- SED 660 Problems in Special Education

Other Requirements

Students must receive a “pass” on the graduate portfolio. Check with your advisor as PRAXIS is not currently required for this degree. A new PRAXIS is being developed for IECE. Teacher certification requirements are subject to change. Please refer to the Education Professional Standards Board (EPSB) website at www.kyepsb.net for current requirements or contact 502-564-4606 or 888-598-7667.

Department of Early Childhood and Elementary Education

Chair - Jo Robertson
3201 Alexander Hall
270-809-2500

The Department of Early Childhood and Elementary Education offers graduate programs in elementary; interdisciplinary early childhood; library media; and reading and writing. Graduate degrees offered by the department include the specialist in education degree, the master of arts in education degree and the master of science degree in interdisciplinary early childhood education. The Ed.S. program provides for Rank I classification. The department encourages students seeking Rank I classification to earn the Ed.S. degree. However, non-degree programs for Rank I classification (30-Hour Program Beyond Master's/Rank II) are offered by the department in elementary education; library media; and reading and writing education.

Each of the master's programs provides for the renewal of the provisional teaching certificate and advancement to Rank II classification. IECE program candidates may seek initial certification at the graduate level by meeting all teacher education admission requirements. The department encourages students seeking Rank II classification to earn a master's degree. As an alternative, fifth-year non-degree programs are

offered in the areas of: elementary education; and reading and writing education. The fifth-year non-degree programs provide for advancement to Rank II classification. All requirements for fifth-year programs must be completed within a ten-year period, beginning with the date the student enrolls in the first class for graduate credit.

Students pursuing graduate studies in the Department of Early Childhood and Elementary Education must meet the standards for admission to graduate study in the College of Education (COE).

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2) and the College of Education requirements given earlier in this chapter.

Specialist in Education: Teacher Education and Professional Development

CIP 13.1206

Total Course Requirements..... 30 hours

- EDP 675 Advanced Educational Psychology
- EDU 622 Philosophy of Education
- or-
- EDU 623 Educational Sociology
- EDU 798 Specialty Study
- ELE 647 Curriculum in the Elementary School
- or-
- MID 640 Middle School Curriculum
- or-
- SEC 641 Building the Curriculum of the Secondary School

Electives (15 hrs)
(Approved in advance by the student's specialist committee.)

Other Degree Requirements

Defense of specialty study. See MSU/COE requirements.

Master of Arts in Education: Elementary

CIP 13.1202

ACCREDITED BY:
National Council for Accreditation of Teacher Education (NCATE).

THESIS TRACK

Total Course Requirements.....33 hours

- ADM 630 Methods of Research
- EDU 631 Application of Learning and Motivation Principles
- EDU 633 Curriculum Development
- EDU 645 History of Education in the United States
- EDU 698 Thesis

Other Course Requirements

REA 612 Foundations of Literacy
Specialization approved in advance by the student's education advisor (12 hrs)

Other Degree Requirements

Defense of thesis. See MSU/COE requirements.

College of Education

NON-THESIS TRACK

Total Course Requirements.....33 hours

Same as above with the following substitution for thesis:

EDU 649 Research in Education¹
Elective (3 hrs)

Other Degree Requirements

Comprehensive examination. See MSU/COE requirements.

¹Should be taken immediately following ADM 630.

**Master of Arts in Education:
Reading and Writing**

CIP 13.1315

ACCREDITED BY:

National Council for Accreditation of Teacher Education (NCATE).

THESIS TRACK

Total Course Requirements.....33 hours

ADM 630 Methods of Research
EDU 633 Curriculum Development
EDU 645 History of Education in the United States

Reading Specialization

REA 612 Foundations of Literacy
REA 628 Literacy Assessment
REA 638 Assessment and Instruction of Children
with Reading Difficulties
REA 639 Supervised Practicum in Reading
REA 698 Thesis (6 hrs)

Limited writing elective approve in advance by the student's education advisor (3 hrs)

Limited reading/writing elective approved in advance by the student's education advisor (3 hrs)

Other Degree Requirements

Defense of thesis. See MSU/COE requirements.

NON-THESIS TRACK

Total Course Requirements.....33 hours

Same as above with the following substitution for thesis:

Limited reading/writing electives approved in advance by the student's education advisor (9 hrs)

Other Degree Requirements

Successful completion of program portfolio.

CERTIFICATE:

**Rank I Classification (30-Hour Program
Beyond Master's/Rank II)**

ELEMENTARY

Total Course Requirements.....30 hours

EDP 675 Advanced Educational Psychology -or-
EDU 622 Philosophy of Education
ELE 647 Curriculum in the Elementary School

Specialization (12 hrs) *Approved by the student's education advisor.*

Electives (12 hrs) *Content area courses, an endorsement, or courses in accordance with the student's Professional Growth Plan, approved by the student's education advisor.*

READING AND WRITING ENDORSEMENT

Total Course Requirements.....30 hours

EDP 675 Advanced Educational Psychology -or-
EDU 622 Philosophy of Education
ELE 647 Curriculum in the Elementary School -or-
MID 640 Middle School Curriculum -or-
SEC 641 Building the Curriculum of the Secondary School

Specialization (12 hrs) *Reading/Reading-related courses approved in advance by the student's education advisor. Must include REA 612, 628, and 638 if courses were not satisfactorily completed during previous programs of study.*

Electives (12 hrs) *Electives approved in advance by the student's education advisor.*

LIBRARY MEDIA CERTIFICATION

Total Course Requirements.....30 hours

EDU 633 Curriculum Development -or-
ELE 647 Curriculum in the Elementary School -or-
MID 640 Middle School Curriculum -or-
SEC 641 Building the Curriculum of the Secondary School

Specialization

EDU 626 Integrating Educational Technology
LIB 620 Library Administration
LIB 630 Classification and Cataloging
LIB 640 Information Sources and Services

Supervised Practicum Experience

LIB 621 Library Practicum

-or-

LIB 626 Library Practicum: Administration

LIB 636 Library Practicum: Cataloging

LIB 645 Library Practicum: Information Skills

Limited Electives (12 hrs) *Limited to library media or library media-related courses approved in advance by the student's advisor.*

Other Certificate Requirements

The PRAXIS II Specialty Examination is required by Kentucky for the P-12 Library Media Specialist Certificate.

CERTIFICATE:

**Library Media P-12
(30-Hour program for Rank I)**

LIBRARY MEDIA

Total Course Requirements.....30 hours

EDP 675 Advanced Educational Psychology -or-
EDU 622 Philosophy of Education
EDU 633 Curriculum Development -or-
ELE 647 Curriculum in the Elementary School -or-
MID 640 Middle School Curriculum -or-

SEC 641 Building the Curriculum of the Secondary School

Specialization

- EDU 606 Preparation of Curriculum Materials
- EDU 626 Integrating Educational Technology
- LIB 601 Learning and Libraries
- LIB 604 Libraries in the School Curriculum

Limited Electives (12 hrs) Must be preplanned with advisor. May include appropriate endorsements or content to increase skill level.

Other Certificate Requirements

A portfolio is required for completion of the Rank I program.

**CERTIFICATE:
Rank II Classification (Fifth-Year Program)**

ELEMENTARY

Total Course Requirements.....33 hours

- EDU 631 Application of Learning and Motivation Principles
- EDU 633 Curriculum Development
- EDU 645 History of Education in the United States
- REA 612 Foundations of Literacy
- Additional professional education course
- Specialization approved in advance by education advisor (12 hrs)
- Electives approved in advance by education advisor (9 hrs)

**CERTIFICATE:
Endorsement for Environmental Education**

Students enrolled in a 5th Year, M.A.Ed., or +30 program in elementary, middle, or secondary education may complete a 12-hour environmental education endorsement specialization. Certified teachers are also eligible. This endorsement may be sought in any degree-seeking or planned teacher education program.

Requirements..... 12 hours

- EDU 515 Introduction to Environmental Education
- EDU 663 Workshops in Environmental Education
- or-**
- EDU 665 Field Experiences in Environmental Education
- EDU 664 Techniques of Teaching Environmental Education

Choose one of the following:

- EDU 620 Internship in Environmental Education
- EDU 660 Special Problems in Environmental Education
- EDU 663 Workshops in Environmental Education
- EDU 667 Environmental Education in Austria, Germany and Switzerland
- EDU 668 Agriculture and the Environment in the Classroom

**CERTIFICATE:
Endorsement for Gifted Education**

Students enrolled in a 5th Year, M.A.Ed., or +30 program in elementary, middle, or secondary education may complete a 12-hour gifted education endorsement specialization. Certified teachers are also eligible. The courses for the certificate include:

Total Course Requirements..... 12 hours

- EDU 691 Nature and Needs of the Gifted Student
- EDU 692 Methods and Materials for Teaching Gifted Students
- EDU 694 Supervised Practicum in Gifted Education
- Choose one of the following:*
- EDU 655 Creativity in Teaching
- EDU 693 Educational Programs for Gifted Students
- EDU 695 Multicultural Gifted Education

A gifted education endorsement also requires one year of successful teaching experience. The endorsement is valid for grades K-12; however, assignment to a full-time self-contained gifted education class shall be restricted to the level of the base certificate. The endorsement shall have the same duration as the base certificate.

**CERTIFICATE:
Endorsement for Instructional Computer Technology**

Students seeking the 5th Year, M.A.Ed., or +30 program in elementary, middle, or secondary education may complete a 12-hour instructional computer technology endorsement specialization. Students may seek certificate endorsement in instructional computer technology by completing any combination of 12 hours in the following courses.

Requirements..... 12 hours

Choose 12 hours from the following:

- ADM 670 Topics in Educational Technology
- CTE 667 Emerging Trends in Instructional Technology
- EDU 606 Preparation of Curriculum Materials
- EDU 626 Integration Educational Technology
- SED 614 Advanced Instructional Technology

An instructional computer technology endorsement also requires one year of successful teaching experience. The endorsement is valid for grades P-12. The endorsement shall have the same duration as the base certificate.

**CERTIFICATE:
Endorsement for School Safety (P-12)**

Students enrolled in a 5th Year, M.A.Ed., or +30 program in elementary, middle, or secondary education may complete a 12-hour school safety endorsement as their specialization. Certified teachers seeking this endorsement are also eligible. Completion of the program shall result in the student being recommended for the endorsement as a safety leader in their school and district.

College of Education

Requirements..... 12 hours

- ADM 675 Introduction to Alternative Education Settings
- ADM 677 Crisis Management in Educational Settings
- GUI 687 Introduction to Guidance

Choose one of the following:

- EDU 625 Theory and Practice in Classroom Management
- SED 540 Procedures for Classroom Management and Discipline
- SED 651 Social Competence for Safe Environments
- SED 657 School Safety and Classroom Management

Master of Arts in Education in Special Education/Interdisciplinary Early Childhood Education

CIP 13.1001

ACCREDITED BY:

National Council for Accreditation of Teacher Education (NCATE).

Refer to the Department of Adolescent, Career and Special Education for complete degree requirements.

CERTIFICATE: Rank I Classification (30-Hour Program Beyond Master's/Rank II) Interdisciplinary Early Childhood Education

Refer to the Department of Adolescent, Career and Special Education for complete program requirements.

Department of Educational Studies, Leadership and Counseling

Chair - Thomas Holcomb
 2332 Alexander Hall
 270-809-2791

Graduate specialization is available in the Department of Educational Studies, Leadership and Counseling in two program areas: (1) school administration, including school principal, supervisor of instruction, director of special education, director of pupil personnel, and superintendent; (2) guidance and counseling, including K-12 school counselor, school psychology, endorsement for individual intellectual assessment, community counseling, and a non-counseling degree in human development and leadership.

School Administration Programs

Program Coordinator: Robert Lyons
 Location: 3215 Alexander Hall

Specialist in Education in School Administration

CIP 13.0499.04

ACCREDITED BY:

National Council for Accreditation of Teacher Education (NCATE).

There are three options leading to the Ed.S. degree: 1) Level I and II Pre-K-12 Building Principal License, 2) School Administration following M.A. in School Administration, 3) Advanced School Administration.

Requirements for Admission

Applicants must comply with the Murray State requirements (see Chapter 2) and the College of Education requirements stated earlier in this chapter. Additional requirements are as follows:

- successful completion of nine hours in the school administration program;
- a total score of 900 (V+Q) on the GRE;
- recommendation of the graduate faculty in school administration;
- appointment of a specialty study committee.

Program Requirements

The Ed.S. degree is a 66-hour graduate program beyond the baccalaureate degree, or 36 hours beyond the appropriate master's degree.

OPTION A: LEVEL I AND II PRE-K-12 BUILDING PRINCIPAL LICENSE

Total Course Requirements..... 36 hours

Level I Certification

- ADM 600 Introduction to Educational Leadership¹
- ADM 624 School and Community Relations¹
- ADM 645 Educational Resources Management
- ADM 650 Clinical Supervision¹
- ADM 663 School Law
- ADM 664 School Principa¹

¹Field research project required

Level II Certification

- ADM 644 Survey of Research in Effective Schools
- ADM 655 Curriculum and Program Development
- ADM 657 Educational Policy and Ethics
- ADM 669 Seminar in School Administration

-and-

- ADM 798 Specialty Study
- ADM 799 Specialty Study

OPTION B: SCHOOL ADMINISTRATION FOLLOWING M.A. IN SCHOOL ADMINISTRATION

Total Course Requirements..... 36 hours

- ADM 644 Survey of Research in Effective Schools
- ADM 655 Curriculum and Program Development

-or-

- ADM elective (if ADM 655 has already been completed)
- ADM 657 Educational Policy and Ethics
- ADM 669 Seminar in School Administration
- ADM 739 The Superintendency
- ADM 749 School District Administration
- ADM 759 Strategic Planning in Education
- ADM 779 The Superintendency Practicum

- COM 681 Seminar in Conflict Resolution
- or-**
- GUI 592 Group Processes
- Elective chosen from the following:**
- ADM 667 Pupil Personnel Accounting
- ADM 720 Advanced School Personnel Evaluation
- ADM 723 Advanced School Program Evaluation
- ADM 725 Advanced Methods of Quantitative Research in Education
- ADM 730 Advanced Educational Research
- CRJ 537 Juvenile Justice Procedures
- and-**
- ADM 798 Specialty Study
- ADM 799 Specialty Study

OPTION C:

ADVANCED SCHOOL ADMINISTRATION

Total Course Requirements..... 36 hours

- ADM 655 Curriculum and Program Development
- or-**
- ADM elective (if ADM 655 has already been completed)
- ADM 657 Educational Policy and Ethics
- ADM 669 Seminar in School Administration
- ADM 749 School District Administration
- ADM 759 Strategic Planning in Education
- COM 681 Seminar in Conflict Resolution
- or-**
- GUI 592 Group Processes
- Four elective courses chosen from the following:*
- ADM 667 Pupil Personnel Accounting
- ADM 720 Advanced School Personnel Evaluation
- ADM 723 Advanced School Program Evaluation
- ADM 725 Advanced Methods of Quantitative Research in Education
- ADM 730 Advanced Educational Research
- ADM 739 The School Superintendency
- ADM 779 The Superintendency Practicum
- CRJ 537 Juvenile Justice Procedures
- and-**
- ADM 798 Specialty Study
- ADM 799 Specialty Study

**Master of Arts in Education:
School Administration**

CIP 13.0499.04

ACCREDITED BY:
National Council for Accreditation of Teacher Education (NCATE).

Requirements for Admission

Applicants must comply with Murray State requirements (see Chapter 2) and the College of Education requirements stated earlier in this chapter. Additional requirements are as follows:

Unconditional

A person who wishes to be unconditionally admitted to a master's degree program in school administration must meet the following requirements:

- provide proof of a valid Kentucky teaching certificate. If a student is not certified to teach in Kentucky, he/she must

sign a waiver acknowledging enrollment for degree purposes only. **Note:** This verification is critical. If a student is to be certified as a principal for the state of Kentucky, a student must have a valid Kentucky teaching certificate.

- submit a Graduate Record Examination (GRE) score of 800 (V + Q) or higher; and
- submit a letter of recommendation for the M.A.Ed. in school administration program from a supervisor.

Conditional

Applicants not meeting the conditions stated above at the time of application may be admitted conditionally for a period of one year or nine hours of coursework, whichever comes first. After one year or nine hours of coursework, the student will be dropped from the program and will be prohibited from taking additional coursework until all conditions have been met.

Other Degree Requirements

- A comprehensive examination is required for graduation. Comprehensive exams are administered in the fall and spring. Students planning summer graduation should plan to take the comprehensive exam in the spring of that year.
- Per university requirements, all coursework must be completed within a period of eight (8) years.
- A grade of *A* or *B* must have been received for all courses taken toward the M.A.Ed. in school administration. Courses for which students have received a *C* or lower must be retaken for either degree or certification purposes.
- ADM 668 is designed as an exit course and must be taken in the last nine hours of a student's program of study.

Level I Principal Certification30 hrs

- ADM 600 Introduction to Educational Leadership¹
- ADM 624 School and Community Relations¹
- ADM 630 Methods of Research
- ADM 644 Survey of Research in Effective Schools
- ADM 645 Educational Resources Management
- ADM 650 Clinical Supervision¹
- ADM 655 Curriculum and Program Development
- ADM 663 School Law
- ADM 664 School Principal¹
- ADM 668 Practicum/Seminar in Educational Leadership

Level II Principal Certification12 hrs

- ADM 655 Curriculum and Program Development¹
- ADM 657 Educational Policy and Ethics
- ADM 669 Seminar in School Administration
- COM 681 Seminar in Conflict Resolution

-or-

- GUI 592 Group Processes

¹Field research project required

Certification Issues

Upon receipt of the M.A.Ed. in School Administration, a student holding a valid Kentucky teaching certificate may receive a letter of eligibility as a K-12 Kentucky Building Principal (Level I) after meeting the following requirements:

- must be admitted unconditionally to the M.A.Ed. in School Administration program (degree requirement);
- have a passing score on the School Leaders Licensure Assessment (SLLA);
- have a passing score on the Kentucky Principal Examination
- provide verification of three years of successful teaching experience; and

- provide verification of completing all program coursework with a grade of **B** or better (degree requirement).

The letter of eligibility is valid for five years and can be renewed one time for an additional five years by either (a) retaking the licensure examinations, or (b) completing six graduate hours of planned program in school administration. Upon being hired as a school principal, students holding a Letter of Eligibility are issued a temporary principal certificate and must complete the Kentucky Principal Internship Program (KPIP). Upon completing KPIP, students will receive a provisional certificate as a K-12 Kentucky Building Principal (Level I). **Note:** If the M.A.Ed. in school administration is a student's second masters degree and he/she has met all aforementioned certification requirements, he/she may apply for a Level II certificate rather than a Level I certificate.

School Administration Post-Master's Certifications

There are five Kentucky administrative certifications that may be obtained at the post-master's degree level. These certifications are a) Pre-K-12 Building Principal, b) Supervisor of Instruction, c) Director of Special Education, d) Director of Pupil Personnel, and e) School Superintendent.

Requirements for Admission

To be unconditionally admitted to any of the post-master's certificate programs, the applicant must meet the following minimum requirements:

- provide proof of a valid Kentucky teaching certificate. If a student is not certified to teach in Kentucky, he/she must sign a waiver acknowledging enrollment for degree purposes only. **Note:** This verification is critical. If a student is to be certified as a principal for the state of Kentucky, a student must have a valid Kentucky teaching certificate.
- submit a Graduate Record Examination (GRE) score of 700 (V + Q) or higher; and
- submit a letter of recommendation for the school administration program from a supervisor.
- Director of Special Education certification additionally requires at least three years of special education teaching experience or three years of experience as a school psychologist as required by the director of the special education program.

CERTIFICATE: Pre-K - 12 Principal Post-Master's

Total Course Requirements..... 30 hours

Level I Certification

- ADM 600 Introduction to Educational Leadership¹
- ADM 624 School and Community Relations¹
- ADM 645 Educational Resources Management
- ADM 650 Clinical Supervision¹
- ADM 663 School Law
- ADM 664 School Principal

Level II Certification

- ADM 644 Survey of Research in Effective Schools
 - ADM 655* Curriculum and Program Development
 - ADM 657 Educational Policy and Ethics
 - ADM 669 Seminar in School Administration
- ¹Field research project required

Certification Issues

Upon completion of the appropriate coursework, a student holding a valid Kentucky teaching certificate may submit a TC-1 to receive a letter of eligibility as a K-12 Kentucky Building Principal (Level I) after meeting the following requirements:

- must be admitted unconditionally to the school administration post-master's certificate program;
- must have completed specific Level I (18 hours);
- have a passing score on the School Leaders Licensure Assessment (SLLA);
- have a passing score on the Kentucky Principal Examination
- provide verification of three years of successful teaching experience; and
- provide verification of completing all program coursework with a grade of **B** or better.

Note: A student may elect to complete both Level I and Level II course requirements before filing for certification.

The letter of eligibility is valid for five years and can be renewed one time for an additional five years by either (a) retaking the licensure examinations, or (b) completing six graduate hours of planned program in school administration. Upon being hired as a school principal, students are issued a temporary principal certificate and must complete the Kentucky Principal Internship Program (KPIP). Upon completing KPIP, students will receive a provisional certificate as a K-12 Kentucky Building Principal (Level I or II as appropriate).

CERTIFICATE: Supervision of Instruction Post-Masters

Total Course Requirements..... 30 hours

Level I Certification

- ADM 600 Introduction to Educational Leadership¹
- ADM 644 Survey of Research in Effective Schools
- ADM 650 Clinical Supervision¹
- ADM 655 Curriculum and Program Development
- ADM 663 School Law
- ADM 664 School Principal¹

Level II Certification

- ADM 624 School and Community Relations¹
- ADM 669 Seminar in School Administration
- COM 681 Seminar in Conflict Resolution

-or-

- GUI 592 Group Processes
- Approved Elective (3 hrs)

¹Field research project required

CERTIFICATE: Director of Pupil Personnel Post-Master's

Total Course Requirements..... 30 hours

Level I Certification

- ADM 600 Introduction to Educational Leadership¹
- ADM 624 School and Community Relations¹
- ADM 655 Curriculum and Program Development¹
- ADM 663 School Law
- ADM 667 Pupil Personnel Accounting¹
- CRJ 537 Juvenile Justice Procedures

Level II Certification

ADM 669 Seminar in School Administration
 COM 681 Seminar in Conflict Resolution

-or-

GUI 592 Group Processes
 Electives (6 hrs)

¹Field research project required

Certification Issues

Upon completion of the appropriate coursework, a student holding a valid Kentucky teaching certificate may submit a TC-1 to receive certification as a Supervisor of Instruction or Director of Pupil Personnel after meeting the following minimum requirements:

- must be admitted unconditionally to the school administration program;
- must have completed specific Level I (18 hours);
- provide verification of three years of successful teaching experience;
- provide verification of completing all program coursework with a grade of **B** or better; and
- provide verification of three years of successful teaching in special education or three years of successful experience as a school psychologist for certification as a Director of Special Education; or
- provide verification of Level II Pre-K-12 Kentucky Building Principal certification and two years of successful experience as a school principal or assistant principal for certification as a School Superintendent.

CERTIFICATE:

Director of Special Education Post-Master's

Individuals entering this program must have a certificate in special education or school psychology and must have completed at least three years of experience as a teacher of exceptional children or three years of experience as a school psychologist. Coursework which includes special education instructional methods, materials and programs including preschool special education is required for individuals who did not prepare for teaching exceptional children and who do not have experience teaching exceptional children.

Total Course Requirements..... 30 hours

Level I Certification

ADM 600 Introduction to Educational Leadership¹
 ADM 624 School and Community Relations¹
 ADM 650 Clinical Supervision¹
 ADM 663 School Law
 SED 603 Special Education Law and Procedures
 SED 650 Administration of Special Education Program

Level II Certification

ADM 657 Educational Policy and Ethics
 ADM 664 School Principal
 ADM 668 Practicum/Seminar in Educational Leadership
 ADM elective (ADM 645 or ADM 655 or GUI 683)

¹Field research project required

CERTIFICATE:

School Superintendent Post-Master's

A candidate for the superintendent certificate must:

- complete both Level I and Level II principal preparation or certification for Pre K-12 principal;
- complete two years of successful experience as a school principal; and
- successfully complete the following courses:

ADM 739 The School Superintendency
 ADM 749 School District Administration
 ADM 759 Strategic Planning in Education
 ADM 779 The Superintendency Practicum¹

¹Should be taken concurrently with ADM 739, 749, and 759, as a one-hour course.

Counseling Programs

Programs Coordinator: Alan Bakes
 Location: 3218 Alexander Hall

The department offers the specialist in education degree, the master of arts in education degree, and a master of science in human development and leadership. The department also offers non-degree programs leading to post-master's certification endorsements in guidance and counseling and a sixth year school psychology program.

Requirements for Admission

Students seeking admission to any degree or certificate program offered by the department must comply with the Murray State requirements stated in Chapter 2 and the College of Education requirements stated earlier in this chapter. All *degree* programs in guidance and counseling utilize the comprehensive exam as one of the summative evaluation requirements. Successful completion of the appropriate practicum experience and professional portfolio are also required for all certification programs in guidance and counseling. Additional requirements are noted.

Specialist in Education in Counseling

CIP 13.1101

ACCREDITED BY:

School - National Council for Accreditation of Teacher Education (NCATE).

The Specialist in Education Degree (Ed.S.) in counseling is a 60-hour program with an option in school counseling and an option in community counseling.

Note: The Ed.S. degree is a 60-hour graduate program beyond the baccalaureate degree.

Other Requirements

- formal nine hour review/admission to candidacy filed
- the specialty study
- specialty study defense
- pass comprehensive exam

SCHOOL COUNSELING OPTION

The Ed.S. in School Counseling consists of a 60-hour program that is arranged into a 36-hour Masters degree providing a Provisional K-12 School Counseling Certification and Rank II. Upon readmission, the student finishes the other 24 hours of required coursework for the Ed.S. degree, the Rank I, and Standard Certification.

Note: A teaching certificate is no longer required to be a counselor in Kentucky schools. However, those who do not have a teaching certificate must take EDU 633 as a prerequisite class.

Total Course Requirements.....60 hours

- ADM 630 Methods of Research¹
- GUI 615 Behavioral Assessment and Intervention¹
- GUI 619 Laboratory in Guidance and Counseling¹
- GUI 620 Practicum in Guidance and Counseling¹
- GUI 625 Legal and Ethical Issues
- GUI 635 Developmental Processes¹
- GUI 637 Effective Practice in School Counseling¹
- GUI 670 Multicultural Issues in Human Services¹
- GUI 676 Individual Appraisal Diagnosis²
- GUI 679 Advanced Practicum: Guidance and Counseling²
- GUI 683 Tests and Measurements¹
- GUI 687 Introduction to Guidance¹
- GUI 689 Individual Testing¹
- GUI 692 Group Dynamics in Counseling¹
- GUI 693 Theories of Counseling¹
- GUI 694 Advanced Counseling Techniques
- GUI 697 Organization and Administration of Personnel Services
- GUI 798 Specialty Study

Electives (3 hrs)

¹Includes 36-hour master’s degree K-12 school guidance provisional certification, Rank II, and a Rank I upon completion of the remaining 24 hours.

²Standard certification courses plus one year full-time counseling experience if student has a teaching certificate; two years full-time counseling experience if student does not have teaching certification.

Other Degree Requirements

- See listing for all specialist degrees earlier in this chapter.
- Students must take GUI 619 during the first nine credit hours of their program and receive a grade of *A* or *B* in order to continue in the program. Students who receive unsatisfactory grades will not be able to take additional coursework until the course in question has been successfully retaken. If the student fails to successfully complete the course a second time, they will be dismissed from the program.

COMMUNITY COUNSELING OPTION

Requirements for Admission

In addition to MSU requirements in Chapter 2 and college requirements earlier in this chapter, community counseling candidates must for unconditional admission:

- compile a minimum score of seven from the sum of the four categories below:

Note: GRE must be taken before student will be admitted.

Undergraduate GPA	Graduate GPA	GRE
3.6 = 5 pts	3.8 = 5 pts	900 = 5 pts
3.3 = 4	3.6 = 4	850 = 4
3.0 = 3	3.4 = 3	800 = 3
2.7 = 2	3.2 = 2	750 = 2
2.5 = 1	3.0 = 1	700 = 1

Underrepresented Student Population = 1 point

Those not meeting unconditional status may be admitted on a conditional basis if judged to show promise.

Candidates for the specialist degree in community counseling who have completed a master’s degree or have obtained graduate credit hours in this or a closely related area of study from MSU or another regionally accredited university program may be able to apply some of those credits to the Ed.S. in counseling program upon the approval of equivalency by the student’s Ed.S. committee.

Note: Any candidate who has an undergraduate GPA below 2.50 or a GRE below 700 (V+Q) will be denied permission to enter the program regardless of points acquired. Students may appeal to the appropriate graduate program committee.

Total Course Requirements.....60 hours

- ADM 630 Methods of Research
 - GUI 618 Introduction to Community Counseling
 - GUI 619 Laboratory in Guidance and Counseling
 - GUI 620 Practicum in Guidance and Counseling
 - GUI 625 Legal and Ethical Issues
 - GUI 635 Developmental Processes
 - GUI 670 Multicultural Issues in Human Services
 - GUI 676 Individual Appraisal Diagnosis
 - GUI 683 Tests and Measurements
 - GUI 686 Educational and Vocational Guidance
 - GUI 692 Group Dynamics in Counseling
 - GUI 693 Theories of Counseling
 - GUI 694 Advanced Counseling Techniques
 - GUI 794 Internship in Community and Agency Counseling
 - GUI 795 Internship in Community and Agency Counseling
 - GUI 798 Specialty Study
 - PSY 581 Abnormal Psychology
- Electives chosen with Ed.S. Committee (3 hrs)

Other Degree Requirements

- See listing for all specialist degrees earlier in this chapter.
- The student must complete the required year(s) of successful experience as a full-time guidance counselor prior to issuance of the standard guidance certificate.
- Students must take GUI 619 during the first nine credit hours of their program and receive a grade of *A* or *B* in order to continue in the program. Students who receive unsatisfactory grades will not be able to take additional coursework until the course in question has been successfully retaken. If the student fails to successfully complete the course a second time, they will be dismissed from the program.

Note: The 60-hour program in Community Counseling meets the number of required hours and the curriculum standards for an individual to become licensed as a professional counselor in the state of Kentucky.

Master of Arts in Education in School Counseling

CIP 13.1101

ACCREDITED BY:
National Council for Accreditation of Teacher Education (NCATE).

Requirements for Admission

- Meet Murray State requirements listed in Chapter 2
- Meet College of Education requirements stated earlier
- Submit a Graduate Record Examination (GRE) score of 800 (V + Q) or higher
- Complete separate program application

Unconditional Admission

The department uses the same requirements as the university. Minimum requirements for unconditional admission are an overall 3.0 grade point average (based on an *A* equals 4.0) and minimum GRE score of 800 (V + Q). GRE score are required for admission and must be submitted as a part of the application materials. Individuals will not be admitted into the program until all required documents have been received.

Conditional Admission

Conditional admission may be granted to a student who has an overall grade point average of 2.50-2.99 if GRE scores meet the minimum requirement. Upon completion of nine hours of graduate work, a student admitted conditionally must have a grade point average of 3.0.

Note: A teaching certificate is no longer required to be a school counselor in Kentucky.

Admission to Candidacy in the Professional School Counseling Training Program requires a 3.0 GPA (based on an *A* equals 4.0)

Requirements for School Counseling Certificate

The following must be accomplished by a student who wishes to be endorsed for provisional certification for the position of school counselor grades P-12.

1. Hold a baccalaureate degree from a regionally accredited college or university.
2. Satisfactorily complete the program requirements and be recommended for certification. A minimum 3.0 GPA is required for completion of this program.
3. Satisfactorily complete a practicum experience in elementary school and secondary school counseling as prescribed by state regulations.
4. Pass comprehensive exam after the candidate has completed 30 semester hours (out of total 36 hour program) or during the final semester of graduate study and complete a professional portfolio.

Other Degree Requirements

- Student must take GUI 619 during the first nine credit hours of their program and receive a grade of *A* or *B* in order to continue in the program. Students who receive unsatisfactory grades will not be able to take additional coursework until the course in question has been successfully retaken. If the student fails to successfully complete the course a second time, they will be dismissed from the program.

SCHOOL COUNSELING

Total Course Requirements36 hours¹

ADM	630	Methods of Research
GUI	615	Behavioral Assessment and Intervention
GUI	619	Laboratory in Guidance and Counseling ²
GUI	620	Practicum in Guidance and Counseling
GUI	635	Developmental Processes
GUI	637	Effective Practice in School Counseling
GUI	670	Multicultural Issues in Human Services
GUI	683	Tests and Measurements
GUI	687	Introduction to Guidance
GUI	689	Individual Testing
GUI	692	Group Dynamics in Counseling
GUI	693	Theories of Counseling

¹EDU 633 must be taken by those without a teaching certificate.

²A grade of *A* or *B* must be received in GUI 619 to continue in program.

Master of Science in Human Development and Leadership

CIP 44.0201

The Master of Science in Human Development and Leadership will prepare individuals to work in administrative, program development and direct service positions in a wide range of settings. The 21 core course hours will provide a solid foundation of information and skills for anyone with leadership responsibilities in organizations. Twelve hours of electives, with consent of an advisor, are provided to expand the individual's knowledge and skills base in their major career path. Students can choose electives with an emphasis on the non-profit organization, dietetics, college student personnel, or public administration or, the student may select 12 hours of coursework to meet specific career goals with the approval of their advisor. The M.S. in human development and leadership program totals 33 semester hours.

Requirements for Admission

Unconditional Admission

The department uses the same requirement as the University. Minimum requirements for unconditional admission are an overall 3.00 grade point average (based on an *A* equals 4.0).

Conditional Admission

Conditional admission may be granted to a student who has an overall grade point average of 2.50-2.99. Upon completion of nine hours of graduate work, a student admitted conditionally must have a grade point average of 3.0.

Students who have a 2.25-2.49 may request conditional admission by contacting the program coordinator and submitting a letter explaining any circumstances surrounding the low GPA, any relevant work experience, and any other pertinent information that would help in assessing likelihood of success in the graduate program.

Required Core Curriculum..... 21 hours

ADM	630	Methods of Research
		-or-
POL	671	Public Policy Analysis

College of Education

COM	681	Seminar in Conflict Resolution
GUI	592	Group Processes
GUI	625	Legal and Ethical Issues
GUI	635	Developmental Processes
GUI	660	Developing Human Potential Seminar
GUI	670	Multicultural Issues in Human Services

Emphasis/Electives.....12 hours

Choose 12 hours from any **one** of the following areas or with the approval of advisor, design 12 hours to meet specific career goals. **These courses must be approved when filing student's program.**

College Student Personnel

CSP	615	Introduction to Student Affairs in Higher Education
CSP	616	The American College Student
CSP	617	Current Issues in Student Affairs
CSP	618	Practicum and Seminar in College Student Personnel Work

Dietetics

NTN	640	Dietetics Clinical Training Primer
NTN	641	Nutrition Therapy I
NTN	642	Foodservice Management
NTN	643	Community Nutrition
NTN	650	Dietetics Clinical Training Primer II
NTN	651	Nutrition Therapy II
NTN	652	Business/Entrepreneur
NTN	653	Culminating Experience
NTN	656	Nutrition Research Literature Review
NTN	680	Independent Study in Nutrition

Non-Profit Organization

GUI	686	Educational and Vocational Guidance
YNL	501	Seminar on Youth and Human Service Organization
YNL	502	Workshop in Financial Resource Development Elective (3 hrs) (With approval of advisor)

Public Administration

POL	573	Public Budgeting and Finance
POL	575	Human Resource Administration
POL	670	Foundations of Public Administration
POL	671	Public Policy Analysis
POL	674	Public Organizations

Thesis Option

Up to six hours of thesis may be taken in place of a similar number of elective hours.

CERTIFICATE: Standard Counseling Certificate

ACCREDITED BY:
National Council for Accreditation of Teacher Education (NCATE).

A student seeking Standard Counseling Certification must possess a Master of School Counseling degree.

Total Course Requirements.....6 hours

GUI	676	Individual Appraisal I
GUI	679	Advanced Practicum: Guidance and Counseling

Other Certificate Requirements

At least one year of experience as a full-time school guidance counselor or at least two years of experience as a full-time school guidance counselor if the individual does not possess a teaching certificate.

CERTIFICATE: Rank I Classification (Beyond the Standard Certificate)

ACCREDITED BY:
National Council for Accreditation of Teacher Education (NCATE).

Upon completion of the required six hours for the Standard Counseling Certification, a student can complete the required hours for the Rank I.

Total Course Requirements.....18 hours

GUI	625	Legal and Ethical Issues
GUI	694	Advanced Counseling Techniques
GUI	697	Organization and Administration of Personnel Services

Electives (9 hours to be chosen with student's advisor)

CERTIFICATE: Individual Intellectual Assessment Endorsement for the School Counselor

This program endorsement is designed to meet state certification requirements for a practicing school counselor to perform district-wide student assessment.

Prerequisites

- School counselor certification: provisional or standard.
- Experience as a certified and practicing school counselor.

Total Course Requirements.....15 hours

GUI	622	Practicum in Psychometrics
GUI	677	Individual Appraisal II
GUI	683	Tests and Measurements
GUI	689	Individual Testing
GUI	690	Advanced Individual Testing

CERTIFICATE: School Psychology - 6th year program

This program leads to a standard certificate in school psychology. Prerequisites are:

- master's degree in a related field (e.g., guidance/counseling, psychology, communication disorders, special education, or social work) from a regionally accredited institution;
- completion of GUI 619 or equivalent;
- three letters of recommendation;
- written goals statement;
- personal interview;
- GRE (V=400, Q=400; V+Q=800 minimum)

Note: Courses taken in the master's degree may be utilized where appropriate with the approval of the student's advisor.

Provisional Certification^{1,2}51 hours

- ADM 630 Methods of Research
- EDU 622 Philosophy of Education
- or-**
- SED 603 Special Education Law and Procedures
- EDU 631 Application of Learning and Motivation
Principles to the Classroom
- GUI 622 Practicum in Psychometrics
- GUI 635 Developmental Processes
- GUI 670 Multicultural Issues in Human Services
- GUI 676 Individual Appraisal I
- GUI 677 Individual Appraisal II
- GUI 683 Tests and Measurements
- GUI 688 Introduction to School Psychology
- GUI 689 Individual Testing
- GUI 690 Advanced Individual Testing
- PSY 581 Abnormal Psychology
- PSY 589 Personality
- PSY 591 Statistics
- SED 552 Functional Behavioral Analysis
- SED 625 Instructional Techniques for Children and
Youth with Mild Disabilities

Note: Rank I or Rank II will be recommended with the provisional certification depending on the individual's entire academic record.

Standard Certification³12 hours

- GUI 792 Internship in School Psychology
- GUI 793 Internship in School Psychology

¹Allows individual to do internship.

²Candidates must take PRAXIS (old NTE) speciality area examination in school psychology and obtain a minimum score of 630 before provisional school psychology certification can be awarded.

³Candidate must have valid provisional certification in school psychology before internship can be contracted



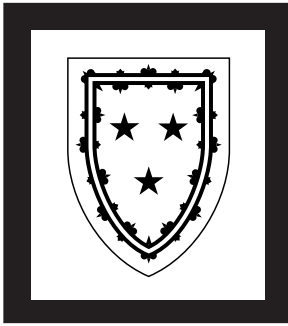
College of Health Sciences and Human Services

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College of Health Sciences and Human Services

James "Corky" Broughton, Dean
Pamela Rice, Interim Assistant Dean
107C Oakley Applied Science Building

The College of Health Sciences and Human Services is comprised of four departments: Nursing; Occupational Safety and Health; Social Work, Criminal Justice and Gerontology; and Wellness and Therapeutic Sciences. The college offers graduate degrees in nursing, occupational safety and health, exercise and leisure studies, and speech-language pathology.

The Master of Science in Nursing offers the three clinical options of nurse anesthesia, clinical nurse specialist (adult health), and family nurse practitioner. The nurse anesthetist option is a collaborative effort with Trover Foundation in Madisonville, Kentucky. A variety of regional settings are utilized to provide excellent clinical experiences for the MSN student. The MSN programs are accredited by the National League for Nursing Accrediting Commission (NLNAC) and have preliminary approval from the Commission on Collegiate Nursing Education (CCNE). The anesthesia program has full accreditation from the Council on Accreditation of Nurse Anesthesia Education Programs.

The program in occupational safety and health is unique in this region. In light of an increased sensitivity to the safety of the work environment and to the overall health of all Americans, the program is a timely response to business and industry needs. Few programs of this type are found in higher education. The M.S. in Occupational Safety and Health provides the philosophical, scientific and technical knowledge needed for professional and administrative positions in the safety field.

In the area of nutrition, dietetics and food management, students holding a bachelor's degree in dietetics may earn the Registered Dietitian (R.D.) credential. This postgraduate program requires a nine month, supervised clinical practice called the Dietetic Internship Program. The program is accredited by the American Dietetic Association. Students successfully completing the internship program and earning the R.D. credential have the option of continuing studies and earn the Master of Science in Nutrition. This degree provides graduates with additional employment opportunities in the areas of food and nutrition serving hospitals and extended-care facilities, wellness centers, professional sports nutrition organizations, school and colleges, food journalism, research, personal training, teaching and education, private consulting, foodservice management, and food sales and marketing.

The graduate program in speech-language pathology is accredited by the American Speech-Language-Hearing Association. In addition to outstanding academic experiences, the program offers practicum experiences in the university's Speech-Language and Hearing Center, in hospitals, clinics, schools, and geriatric facilities throughout the region. The program leads to Kentucky licensure in speech-language pathology, certification by the Kentucky Department of Education, and the ASHA Certificate of Clinical Competence in Speech-Language Pathology.

Department of Nursing

Interim Chair - Michael Perlow
Graduate Coordinator - Nancey France
120 Mason Hall
270-809-2193

The Department of Nursing offers the master of science in nursing degree. Master's study in nursing gives students the opportunity to acquire and expand nursing knowledge and skills needed to provide advanced practice nursing care. Three options are available: (1) clinical nurse specialist with a focus on adults; (2) nurse anesthetist; and (3) family nurse practitioner. All options are placed within a rural health theory context.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). In addition to the general MSU application, applicants must complete an application from the Department of Nursing. This application must be turned in to the departmental office by the deadline set by the department. Requirements for unconditional and conditional admission are as follows; additional requirements are listed under each option.

Unconditional

- For unconditional admission, an applicant must have:
- baccalaureate degree in nursing from an NLNAC/CCNE-accredited institution;
 - Kentucky licensure and/or licensure to practice as a registered nurse in the state of anticipated preceptorship; advanced practice licensure required for post-baccalaureate APN option.
 - proof of liability insurance for advanced practice nursing, current immunizations, hepatitis vaccine or signed waiver, and TB testing are required before enrollment in clinical nursing courses. Submit copies to the Nursing Graduate Coordinator;
 - undergraduate cumulative grade point average of 3.0 on 4.0 scale, post-master's certificate applicants grade point average of 3.5 on a 4.0 scale;
 - for international applicants, RN licensure in Kentucky and/or licensure to practice as a registered nurse in the state of anticipated preceptorship, a TOEFL score of 550;
 - successful completion of prerequisite courses at time of application: anatomy, physiology, chemistry, health assessment, statistics, and nursing research; and
 - three favorable recommendations (submitted on a Department of Nursing form by a faculty member of applicant's BSN program, applicant's current RN supervisor, and a RN peer.);

- a successful interview by the selection committee;
- current CPR certification; current ACLS and PALS certification for NA option only;
- one-year RN experience required for FNP option; one-year RN experience in intensive care required for NA option;
- following the application deadline, the Graduate and Selection Committees will review all completed application packages and offer interviews to the most qualified applicants.

Conditional

Applicants who do not meet all of the requirements for unconditional admission will be considered on an individual basis.

Detailed information about these and other policies, such as academic honesty and confidentiality, is available from the Department of Nursing and in the MSU Student Handbook. The commission on Collegiate Nursing Education is a resource for information about this program and may be obtained from the CCNE at CCNE, NW Suite 530, Washington, DC 20036 or call 202-887-6791.

For further information write: Department of Nursing, Murray State University, 120 Mason Hall, Murray, KY 42071.

Master of Science in Nursing Degree

The purpose of the Master of Science in Nursing (MSN) degree at Murray State University is to prepare advanced practice nurses within a rural setting to the end that wellness in society may be enhanced by 1) providing advanced nursing care; 2) advancing and expanding nursing knowledge and skill through systematic investigation and experimentation; 3) assuming a nursing leadership role within the health care delivery system; and 4) acquiring a foundation for doctoral study.

Clinical Nurse Specialist Critical Care/Advanced Medical-Surgical

The Clinical Nurse Specialist (CNS) is an advanced practice nurse with a concentration in a selected area of clinical nursing. Emphasis is placed on the management, support, and coordination of the care of acutely and critically ill adult patients with episodic illness or acute exacerbation of chronic illness within the context of advanced standards of practice and professional performance. The CNS influences outcomes of client care, nursing, personnel activities, and the organizational environment. The CNS is prepared to function as an expert practitioner, educator, researcher, consultant, and leader within a variety of settings.

Post-Baccalaureate APN-MSN

The Post-Baccalaureate APN-MSN is designed to offer a Master’s degree to baccalaureate prepared advanced practice nurses. Students take core courses along with clinical courses in their specialty area.

Family Nurse Practitioner

The Family Nurse Practitioner (FNP) is an advanced practice nurse who provides primary health care services to all members of the family. Emphasis is placed on health promotion and preventive care across the life-span. The FNP is prepared to manage a wide range of acute and chronic health problems in a variety of settings.

Additional Requirement for Application

One year RN experience.

Nurse Anesthetist

The Nurse Anesthetist is an advanced practice nurse who provides nursing care specific to anesthetic requirements across the life-span in a variety of practice settings.

Additional Requirements for Application

- Minimum of one year of professional nursing experience in intensive care.
- Current ACLS and PALS certification.
- In addition to the other academic prerequisites, organic or biochemistry is required for the nurse anesthetist option.

Master of Science in Nursing

CIP 51.1601.02

ACCREDITED BY:

Commission on Collegiate Nursing Education. The nurse anesthetist option is also accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs.

CLINICAL NURSE SPECIALIST OPTION

CRITICAL CARE/ADVANCED MEDICAL-SURGICAL
Total Course Requirements..... 42 hours

Advanced Nursing Core Courses..... 12 hrs

- NUR 603 Concepts and Theories in Nursing
- NUR 605 Issues in Rural Health Care
- NUR 630 Research in Nursing
- NUR 631 Evidence-Based Clinical Practice

Clinical Core Courses 10 hrs

- NUR 641 Advanced Nursing Assessment
- NUR 642 Advanced Pharmacology
- NUR 673 Pathophysiology in Advanced Nursing Practice

Clinical Specialty..... 15 hrs

- NUR 520 Critical Care Concepts and Application
- NUR 622 Diagnosis and Management of Adult Health Problems
- NUR 623 Advanced Adult Nursing-Acute Care
- NUR 624 Advanced Adult Nursing-Chronic/Rehabilitation

Clinical Practicum 5 hrs

- NUR 650 Advanced Clinical Nurse Specialist Integration Practicum II

Substitutions for required courses can be made only with the approval of the departmental graduate coordinator and/or chair.

Other Degree Requirements

This option can be completed either full-time or part-time. If full-time, one year RN experience prior to admission is required.

POST-BACCALAUREATE APN-MSN OPTION

Total Course Requirements..... 30 hours

Advanced Nursing Core Courses..... 12 hrs

- NUR 603 Concepts and Theories in Nursing
- NUR 605 Issues in Rural Health Care
- NUR 630 Research in Nursing
- NUR 631 Evidence-Based Clinical Practice

College of Health Sciences and Human Services

Clinical Specialty..... 9 hrs
NUR 623 Advanced Adult Nursing-Acute Care
NUR 624 Advanced Adult Nursing-Chronic/Rehabilitation

Electives (as approved by advisor) 9 hrs
Substitutions for required courses can be made only with the approval of the departmental graduate coordinator and/or chair.

FAMILY NURSE PRACTITIONER OPTION

Total Course Requirements..... 44 hours

Advanced Nursing Core Courses..... 12 hrs
NUR 603 Concepts and Theories in Nursing
NUR 605 Issues in Rural Health Care
NUR 630 Research in Nursing
NUR 631 Evidence-Based Clinical Practice

Clinical Core Courses 10 hrs
NUR 641 Advanced Nursing Assessment
NUR 642 Advanced Pharmacology
NUR 673 Pathophysiology in Advanced Nursing Practice

Clinical Specialty..... 13 hrs
NUR 644 Primary Care of the Family I
NUR 645 Primary Care of the Family II

Clinical Practicum 9 hrs
NUR 654 Advanced Family Nurse Practitioner
Integration Practicum

Substitutions for required courses can be made only with the approval of the departmental graduate coordinator and/or chair.

Other Degree Requirements
This is a full-time option.

NURSE ANESTHETIST OPTION

Total Course Requirements..... 61 hours

Advanced Nursing Core Courses..... 19 hrs
NUR 603 Concepts and Theories in Nursing
NUR 605 Issues in Rural Health Care
NUR 630 Research in Nursing
NUR 631 Evidence-Based Clinical Practice
NUR 641 Advanced Nursing Assessment
NUR 673 Pathophysiology in Advanced Nursing Practice

Clinical Specialty..... 27 hrs
NUR 606 Scientific Foundations in Anesthesia I
NUR 607 Scientific Foundations in Anesthesia II
NUR 608 Scientific Foundations in Anesthesia III
NUR 609 Scientific Foundations in Anesthesia IV
NUR 632 Principles of Anesthesia Practice I
NUR 633 Principles of Anesthesia Practice II
NUR 634 Principles of Anesthesia Practice III
NUR 635 Principles of Anesthesia Practice IV

Clinical Practicum 9 hrs
NUR 651 Clinical Practicum I
NUR 652 Clinical Practicum II
NUR 653 Clinical Practicum III

Other Required Courses..... 6 hrs
NUR 655 Seminar in Nurse Anesthesia I
NUR 656 Seminar in Nurse Anesthesia II

Substitutions for required courses can be made only with the approval of the departmental graduate coordinator and/or chair.

Other Degree Requirements
This is a full-time option.

Post-Master's Certificates

The Post-Master's certificate is designed for those registered nurses who already have earned the Master of Science in Nursing degree and now pursue a change in specialty. All prerequisites and clinical experience remain the same as for the Master of Science in Nursing degree.

CERTIFICATE:

Clinical Nurse Specialist Post-Master's

Total Course Requirements..... 28 hours

NUR 520 Critical Care Concepts and Application
NUR 622 Diagnosis and Management of Adult Health Problems
NUR 623 Advanced Adult Nursing-Acute Care
NUR 624 Advanced Adult Nursing-Chronic/Rehabilitation
NUR 641 Advanced Nursing Assessment¹
NUR 642 Advanced Pharmacology¹
NUR 650 Advanced Clinical Nurse Specialist Integration Practicum II
NUR 673 Pathophysiology in Advanced Nursing Practice¹

¹These courses may be transferred to Murray State if taken within the last five years and are at the graduate level.

CERTIFICATE:

Family Nurse Practitioner Post-Master's

Total Course Requirements..... 32 hours

NUR 641 Advanced Nursing Assessment¹
NUR 642 Advanced Pharmacology¹
NUR 644 Primary Care of the Family I
NUR 645 Primary Care of the Family II
NUR 654 Advanced Family Nurse Practitioner Integration Practicum
NUR 673 Pathophysiology in Advanced Nursing Practice¹

¹These courses may be transferred to Murray State if taken within the last five years and are at the graduate level.

CERTIFICATE:

Nurse Anesthesia Post-Master's

Total Course Requirements..... 49 hours

NUR 606 Scientific Foundations in Anesthesia I
NUR 607 Scientific Foundations in Anesthesia II
NUR 608 Scientific Foundations in Anesthesia III
NUR 609 Scientific Foundations in Anesthesia IV
NUR 632 Principles of Anesthesia Practice I
NUR 633 Principles of Anesthesia Practice II
NUR 634 Principles of Anesthesia Practice III
NUR 635 Principles of Anesthesia Practice IV
NUR 641 Advanced Nursing Assessment¹
NUR 651 Clinical Practicum I
NUR 652 Clinical Practicum II
NUR 653 Clinical Practicum III
NUR 655 Seminar in Nurse Anesthesia I

NUR 656 Seminar in Nurse Anesthesia II
 NUR 673 Pathophysiology in Advanced Nursing Practice¹

¹These courses may be transferred to Murray State if taken within the last five years and are at the graduate level.

Department of Occupational Safety and Health

Chair - David G. Kraemer
 Graduate Coordinator - Bassam H. Atieh
 157 Industry and Technology Center
 270-809-2488

The graduate program in occupational safety and health is designed to prepare students to become skilled and demonstrate knowledge in an occupational safety and health option of environmental health and safety, industrial hygiene, or safety management. Persons pursuing this degree must have a B.S. in occupational safety and health, or a related field, and/or complete a 21-credit core of undergraduate work.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). Additional requirements for unconditional and conditional admission are as follows.

Unconditional

- Baccalaureate degree in occupational safety and health or a closely related field.
- At least a 3.0 undergraduate grade point average.

Conditional

Recommendation of the graduate advisory committee and completion of the courses listed below under the *Prerequisite Undergraduate Requirements*. Upon recommendation of the advisor, prerequisite undergraduate requirements may be taken while enrolled for graduate credit.

Prerequisite Undergraduate Requirements 21 hours

- OSH 192 Introduction to Occupational Safety and Health
 OSH 287 OSHA Standards for General Industry and Construction
 OSH 320 Environmental and Occupational Health Engineering Technology
 OSH 353 Prevention of Musculoskeletal Disorders in the Workplace
 OSH 420 Industrial Hygiene I
 OSH 452 Systems Approach to Hazard Control

-and-

One of the following option-specific courses:

Environmental

- OSH 311 Hazardous Materials and Emergency Planning

Safety Management

- OSH 384 Construction Safety

Industrial Hygiene

- OSH 425 Physical Agents

Master of Science in Occupational Safety and Health

CIP 15.0701

PROGRAM ACCREDITED BY:

The Applied Science Accreditation Commission of the Accreditation Board for Engineering and Technology (ASAC/ABET).

Within departmental guidelines, the individual student's program is developed in consultation with advisor.

THESIS TRACK

Total Course Requirements.....30 hours

Technical Requirements¹12 hrs

Choose four from the following:

- OSH 523 Occupational Diseases
 OSH 536 Motor Fleet Safety
 OSH 545 Loss Control Measurement and Management
 OSH 546 Fundamentals of Risk Control
 OSH 550 Safety and Health Program Management and Training
 OSH 591 Engineering and Technical Aspects of Safety
 OSH 621 Industrial Hygiene II
 OSH 626 Industrial Hygiene Sampling Strategies
 OSH 637 Biostatistics and Probability
 OSH 655 Legal Aspects of Safety and Health
 OSH 656 Ergonomics and Biomechanics
 OSH 658 Introduction to Occupational Epidemiology
 OSH 670 Internship in Safety and Health
 (or approved elective with prior safety internship or equivalent)
 OSH 680 Graduate Seminar in Occupational Safety and Health

Thesis 6 hrs

- OSH 698-699 Thesis

¹Technical requirements courses are selected based on the student's program option and must be approved by the graduate program advisor.

NON-THESIS TRACK

Total Course Requirements..... 30 hours

Same as above with the following substitution for thesis:

- OSH 591 Engineering and Technical Aspects of Safety
 OSH 670 Internship in Safety and Health
 (or approved elective with prior safety internship or equivalent)

All students (Thesis or Non-Thesis) must also complete 12 credit hours by selecting one of the following three options. Substitutions within these options can be made only with the approval of the advisor.

Safety Management Option 12 hrs

- OSH 650 Occupational Safety and Health Organizational Leadership and Management
 OSH 654 Philosophy of Safety and Health
 OSH 655 Legal Aspects of Safety and Health
 OSH 657 Current Literature and Research in Safety and Health

College of Health Sciences and Human Services

Industrial Hygiene Option 12 hrs

- OSH 527 Air Contaminants and Industrial Ventilation
- OSH 621 Industrial Hygiene II
- OSH 622 Toxicology of Industrial Materials
- OSH 663 Applied Workplace Ergonomics

Environmental Option..... 12 hrs

- OSH 527 Air Contaminants and Industrial Ventilation
- OSH 687 Wastewater Treatment
- OSH 689 Solid and Hazardous Waste Treatment
- OSH 697 Research in Environmental Health and Safety

-or-

An approved higher-level course in environmental science

Other Degree Requirements

- Comprehensive examination (Non-thesis track).
- Oral defense of thesis (Thesis track).
- 12 hours of 600-level courses excluding thesis (Thesis track).
- 15 hours of 600-level courses excluding practicum and internship credits (Non-thesis track).

**Department of Wellness
and Therapeutic Sciences**

Interim Chair - Pearl Payne
Graduate Coordinators:
Nutrition - Jeff Frame
Speech Pathology - Pearl Payne
108 Carr Health Building
270-809-6124

The Department of Wellness and Therapeutic Sciences offer a Master of Science in Nutrition and a Master of Science in Speech-Language Pathology.

The Master of Science (M.S.) in Nutrition is a 35-credit-hour program which enables graduates of the Registered Dietitian (R.D.) certification program to pursue additional higher education in the areas of professional counseling, education, science, statistics, psychology, management, and nutrition research. The M.S. in Nutrition prepares students to effectively compete in a growing job market in which 5 of 10 dietitians nationally hold master's degrees. Advances in nutrition and genetic research, aging demographics, and accelerating rates of nutrition-related diseases such as obesity and diabetes fuel the demand for highly trained nutrition professionals.

The Division of Communication Disorders offers a wide variety of academic and practicum experiences. The speech-language pathology program has been accredited by the National Council for Accreditation of Teacher Education (NCATE) and American Speech-Language-Hearing Association (ASHA).

**Master of Science in Exercise
and Leisure Studies**

CIP 31.0505

This program has been suspended and no new students are being admitted. For current program information, contact the chair of the department.

Master of Science in Nutrition

CIP 19.0501

ACCREDITED BY:

The American Dietetic Association and eligibility by the Commission on Accreditation of Dietetics Education.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). Additional requirements for unconditional admission are as follows.

- Applicants must complete the Murray State University Dietetic Internship Program or other American Dietetic Association accredited program. Students must successfully complete program, earning a grade of B or better in all program sections.
- Students must pass the Registered Dietitian National Registration Examination administered by the American Dietetic Association prior to admission to the program.

NON-THESIS TRACK ONLY

Total Course Requirements.....35 hours

- NTN 640 Dietetics Clinical Training Primer
 - NTN 641 Nutrition Therapy I
 - NTN 642 Foodservice Management
 - NTN 643 Community Nutrition
 - NTN 650 Dietetics Clinical Training Program Primer II
 - NTN 651 Nutrition Therapy II
 - NTN 652 Business/Entrepreneur
 - NTN 653 Culminating Experience
 - NTN 656 Nutrition Research Literature Review
 - NTN 660 Research Project in Nutrition I
 - NTN 661 Research Project in Nutrition II
 - PSY 545 Behavior Modification
 - PSY 591 Statistics
- Approved Elective (1-4 hrs)

Other Degree Requirements

- Successful completion of a comprehensive research project.

CERTIFICATE:

Nutrition Registered Dietitian (R.D.)

ACCREDITED BY:

The American Dietetic Association and eligibility by the Commission on Accreditation of Dietetics Education.

Total Course Requirements..... 18 hours

- NTN 640 Dietetics Clinical Training Primer
- NTN 641 Nutrition Therapy I
- NTN 642 Foodservice Management
- NTN 643 Community Nutrition
- NTN 650 Dietetics Clinical Training Program Primer II
- NTN 651 Nutrition Therapy II
- NTN 652 Business/Entrepreneur
- NTN 653 Culminating Experience

Master of Science in Speech-Language Pathology

CIP 51.0204

ACCREDITED BY:

American Speech-Language-Hearing Association; National Council for Accreditation of Teacher Education (NCATE)

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). Additional requirements for unconditional admission are as follows.

- Complete application for admission to Murray State University Graduate School by deadline;
- Complete application to the Communication Disorders program by the deadline issued by the Communication Disorders program;
- A baccalaureate degree in communication disorders or equivalent from a regionally accredited institution;
- At least a 3.0 undergraduate grade point average.
- Combined score of 800 or above on verbal and quantitative portions of the Graduate Record Examination.
- Successful completion of the following prerequisite courses (or their equivalents) at time of application.

CDI 215	Clinical Phonetics
CDI 310	Anatomy and Physiology
CDI 315	Speech Science
CDI 325	Pediatric Speech Disorders I
CDI 340	Speech and Language Development
CDI 345	Pediatric Language Disorders I
CDI 405	Audiology
CDI 451	Aural Rehabilitation
CDI 465	Neuroanatomy and Physiology for the Speech-Language Pathologist
CDI 470	Pediatric Speech Disorders II
CDI 472	Pediatric Language Disorders II

Additional course work completed prior to graduate study must be approved by the graduate coordinator in order to be used for certification and/or licensure requirements.

One or more of the courses from the following group may also be required to meet certification and/or graduate degree requirements.

CDI 482	Augmentative-Alternative Communication
-or-	
CDI 582	Communication Programming for Individuals with Severe Disabilities
CDI 550	Neuromuscular Disorders

THESIS TRACK

Total Course Requirements..... 57-60 hours

CDI 615	Instrumental Methods for SLPs
CDI 620	Phonological Disorders
CDI 624	Disorders of Voice
CDI 625	Fluency Disorders
CDI 646	Research Methods for Speech-Language Pathologists
CDI 648	Advanced Language Disorders
CDI 656	Advanced Audiology
CDI 660	Motor Speech Disorders
CDI 670	Practicum Seminar

CDI 674	Practicum
CDI 680	Adult Neurogenic Communication Disorders
CDI 686	Swallowing Disorders
CDI 694	Advanced Clinical Practicum
CDI 698	Thesis
CDI 699	Thesis
Optional Approved Elective	

Professional Semester:

CDI 601	Seminar in Current Trends and Issues <i>and two of the following:</i>
CDI 621	Student Teaching in Speech-Language Pathology ¹
CDI 640	Individualized School Placement
CDI 676	Medical/Clinical Placement

Under unusual circumstances, the graduate advisor may substitute CDI 695 or appropriate related coursework for a required course.

Other Degree Requirements

- 375 clock hours clinical practicum, one of CAA's certification requirements.
- Oral defense and examination of the thesis.

NON-THESIS TRACK

Total Course Requirements..... 57-60 hours

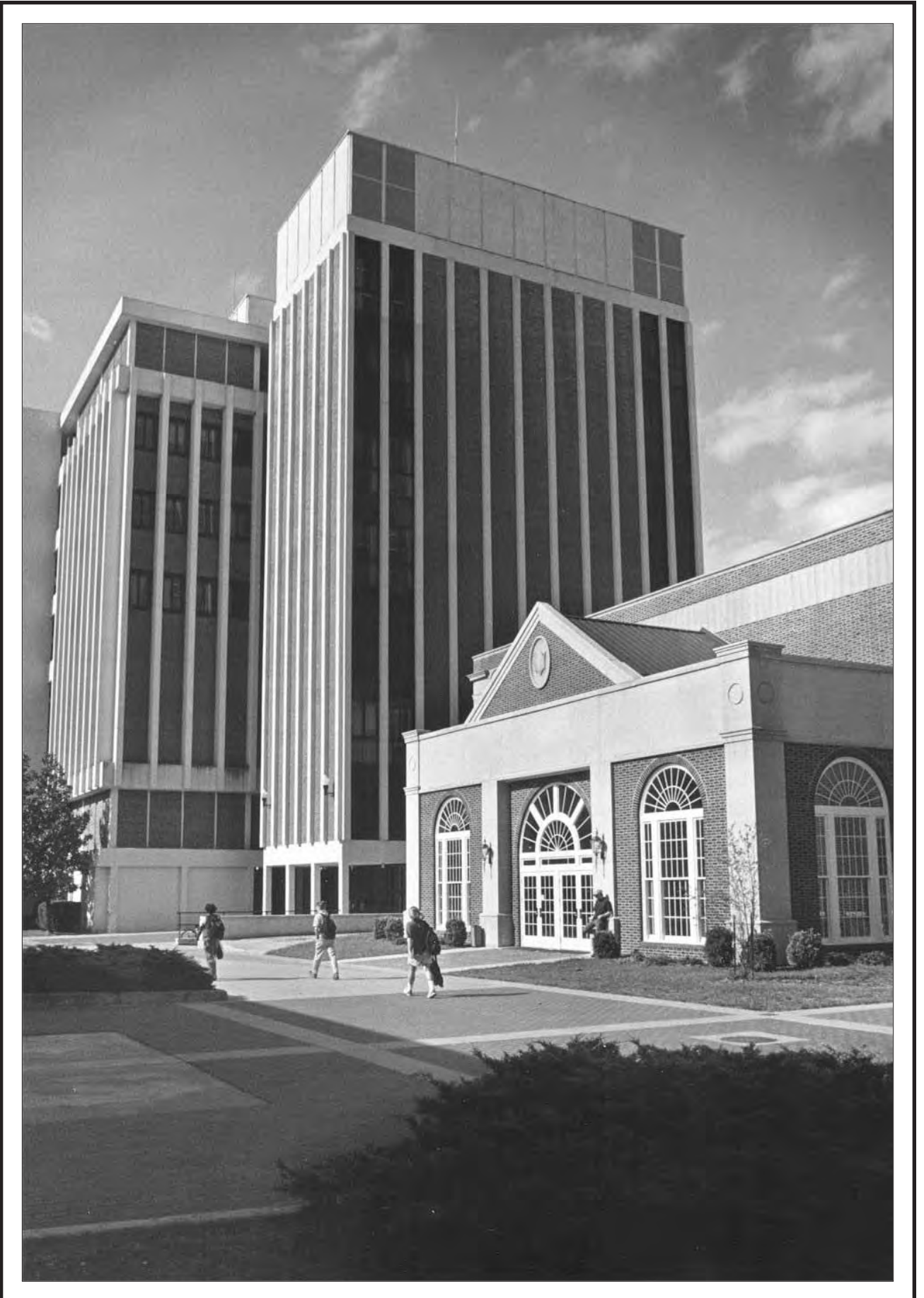
Same as above with the following substitution for thesis:

CDI 684	Cranio-Facial Anomalies
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Other Degree Requirements

- 375 clock hours clinical practicum, one of CAA's certification requirements.
- Written comprehensive examination.

¹For Kentucky teacher certification, student must be admitted to the teacher education program in the College of Education. Additional coursework may be required.



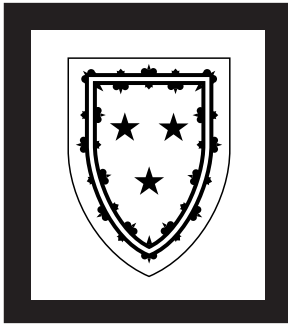
College of Humanities and Fine Arts

Graduate Programs

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College of Humanities and Fine Arts

Ted Brown, Dean
Sonya Baker, Assistant Dean
Faculty Hall, Room 100

The College of Humanities and Fine Arts is composed of the Departments of Art and Design; English and Philosophy; Government, Law and International Affairs; History; Modern Languages; Music; Psychology; and Theatre. The college offers the Master of Arts degree in English, history, psychology, and Teaching English to Speakers of Other Languages (TESOL), the Master of Science in psychology, the Master of Music Education (M.M.E.), the Master of Public Administration (M.P.A), and the Master of Fine Arts (M.F.A.) in creative writing. The college also supports the master of arts in education program in secondary education.

All programs stress high academic standards and reflect current trends in scholarship. Each program provides options that prepare students for employment in a variety of fields, for entry into several professions, or for admission to doctoral programs at other institutions.

Graduate programs in the College of Humanities and Fine Arts are designed to fit the schedules of busy students. Most courses are offered in the evenings and during the summer months. The M.A. in TESOL has a one-year program in which the courses are taught entirely online, the low-residency M.F.A. in creative writing allows students to complete the bulk of their work in their home towns, and other graduate programs offer a growing variety of online courses.

Graduate programs in the College of Humanities and Fine Arts offer several special opportunities. The Forrest C. Pogue Public History Institute, located in the Department of History, provides opportunities for graduate students to work with one of several active public history research projects. The institute also provides opportunities for students to gain experience in historic interpretation, museum studies, historic preservation, and oral history.

Degree candidates for the M.A. in English have several curricular and extra-curricular opportunities. They help plan and participate in an annual Composition and Rhetoric Colloquium which brings nationally recognized scholars to campus, and they participate with faculty members in department seminars. Students also may help coordinate a series of readings by poets and fiction writers as well as gain practical experience in editing through work with departmental publications, workshops, and seminars. A limited number of paid teaching assistantships are available whereby students gain supervised experience in the teaching of writing in the university's composition classes and tutorial programs.

The Department of English and Philosophy offers students the opportunity to gain practical experience in creative and expository writing during all stages from creation to publication. A laboratory with computer equipment enables students to learn about the design, editing, and production of various kinds of publications. Students in the M.F.A. in Creative Writing pro-

gram have the opportunity to work on the staff of *New Madrid*, the program's nationally published literary journal.

The M.A. in TESOL program is located in the Department of English and Philosophy, but also utilizes resources and faculty of the Department of Modern Languages and the English as a Second Language Program (ESL). The M.A. in TESOL is the recommended degree for individuals who wish to teach English to non-native speakers in industry, schools, and universities in this country and abroad. Graduate students in the TESOL program gain practical experience in the Murray State English Language Institute, a pre-college program serving 150 international students a year. The ESL program provides experience for all students through the Practicum in TESOL; in addition, mentorships and teaching assistantships in ESL are available for some students. Computer laboratories offer computer-assisted language learning and Internet access to the program.

The Department of Music features 20 full-time and 10 part-time faculty. The department provides a comprehensive education for the aspiring professional music teacher, performer, and composer. Courses and performance opportunities for both majors and non-majors are designed to involve students in the music-making process.

The Department of Music has an established national reputation dating from the 1930's, when it became the first department in a teachers' college to gain membership in the National Association of Schools of Music, an accreditation that has been sustained since that time. Graduate students are encouraged to participate in many performance organizations sponsored by the department. The marching band, wind ensemble, symphonic band, jazz bands, orchestra, concert choir, and other instrumental and choral ensembles perform for audiences on campus, in the community, and on tour. In addition, students and faculty frequently perform together in select ensembles and recitals.

The Department of Psychology operates research laboratories that provide an array of opportunities for graduate students to conduct research with faculty members. In addition, the Psychological Center, which provides psychological services to the university and surrounding community, is located within the department. The Psychological Center is used as a training facility for graduate students in clinical psychology. It provides supervised experiences in psychodiagnostics and psychotherapy and is an on-site agency for clinical practicum.

The Kentucky Institute for International Studies (KIIS) is a consortium of 19 colleges and universities that is administered by Murray State University and located in the College of Humanities and Fine Arts. KIIS is dedicated to providing excellent international education and offers 25 high-quality, low-cost summer and semester programs in 15 countries around the world. KIIS programs take place in Argentina, Austria, Brazil,

the Czech Republic, China, Costa Rica, Denmark, Ecuador, France, Germany, Greece, Italy, Japan, Mexico, Spain, and Turkey. Graduate courses are offered in a wide variety of academic fields in several of the programs. All courses except language courses are taught in English.

Departments and programs of the College of Humanities and Fine Arts are housed in five buildings on the main campus: the Price Doyle Fine Arts Center, Faculty Hall, Lovett Auditorium, Wells Hall, and Wilson Hall.

Lovett Auditorium is adjacent to the Doyle Center. With a seating capacity of 2,100, the auditorium provides theatre and music students with additional performance space suitable for large dramatic productions and major musical events.

Department of Art and Design

Chair - Richard Dougherty
604 Price Doyle Fine Arts Center
270-809-3784

The graduate courses taught by the Department of Art and Design provide course work for candidates seeking the master of arts in education with a teaching area in studio art, and other graduate programs.

Master of Arts in Education (Secondary Education) with Teaching Area in Studio Art

CIP 13.1205

Students seeking the M.A.Ed. in secondary education (see Chapter 5) may complete a studio art specialization with 12 hours of 500 or 600 level studio art courses.

Department of English and Philosophy

Chair - Staci Stone
Graduate Coordinator - Laura Dawkins
Director, TESOL - M. Sue Sroda
Director, MFA in Creative Writing - Squire Babcock
7C Faculty Hall
270-809-2401

The Department of English and Philosophy offers the Master of Arts in English, the Master of Arts in Teaching English to Speakers of Other Languages, the Master of Fine Arts in Creative Writing and courses toward an English specialization in the Master of Arts in Education (secondary education) degree.

Master of Arts in English

CIP 23.0101

The objectives of the M.A. program in English are (1) to prepare teachers of language, literature and composition at the college and secondary school levels; (2) to provide a broad foundation for those wishing to pursue further graduate study; and (3) to meet the special needs of a variety of pre-professional programs.

Requirements for Admission

Applicants must comply with the Murray State University requirements (see Chapter 2). For non-native speakers of English, a TOEFL score of 20 for each section of the iBT, an IELTS score of 6.5 with no band lower than 6.0 or a previous degree earned from an accredited U.S. institution or successful completion of Level 6 of the MSU ESL program.

Additional requirements for unconditional and conditional admission are:

Unconditional

- Undergraduate major or minor in English.
- Undergraduate GPA of 3.0 or higher.

Conditional

Departmental judgment of probable success based on Graduate Record Examination scores, letters of recommendation, or other evidence such as a planned program of prerequisite courses.

Note: At least half of the total coursework, excluding thesis credit, must be in 600-level courses. Any substitutions for the requirements listed below must be approved by the departmental graduate coordinator.

LITERATURE NON-THESIS TRACK

Total Course Requirements..... 30 hours
ENG 600 Research and Bibliography
American literature courses (6 hrs)
British literature courses (6 hrs)
ENG electives (15 hrs)

CREATIVE WRITING THESIS TRACK

Total Course Requirements.....30 hours
ENG 600 Research and Bibliography
ENG 698 Thesis Writing
ENG 699 Thesis Writing
American literature courses (6 hrs)
British literature courses (6 hrs)

and nine hours from the following:

- ENG 520 Forms of Poetry
- ENG 521 Forms of Fiction
- ENG 610 Graduate Writer's Workshop
- ENG 671 Special Topics in Creative Writing
- ENG 672 Studies in Creative Nonfiction

ENGLISH STUDIES NON-THESIS TRACK

Total Course Requirements..... 30 hours
ENG 600 Research and Bibliography
American literature courses (6 hrs)
British literature courses (6 hrs)
ENG electives (15 hrs)

ENGLISH WITH PHILOSOPHY AS A COGNATE DISCIPLINE THESIS TRACK

Total Course Requirements..... 30 hours
ENG 600 Research and Bibliography
ENG 698-699 Thesis Writing
American literature courses (6 hrs)
British literature courses (6 hrs)
ENG or PHI electives (9 hrs)

NON-THESIS TRACK

Total Course Requirements.....30 hours
Same as above, with the following substitution for thesis:

ENG or PHI electives..... increase to 15 hrs

Other Degree Requirements

- Written comprehensive examination over an approved reading list.
- Oral examination over the approved reading list or an oral thesis defense.
- Exit portfolio or thesis.

Master of Arts in Education (Secondary Education) with English Specialization

CIP 13.1205

Students seeking the M.A.Ed. in secondary education (see Chapter 5) may complete an English specialization with 12-15 hours of 500- or 600-level English courses. If approved by the English graduate coordinator, nine of these hours also may be counted toward the M.A. in English (thesis or non-thesis) as a second degree if they fall within the eight-year time limit.

Master of Fine Arts in Creative Writing

CIP 23.0101

The M.F.A. in Creative Writing (low-residency program) offers advanced instruction to creative writers whose circumstances prohibit them from pursuing a traditionally structured course of graduate study. The M.F.A. offers possible concentrations in fiction, poetry, creative non-fiction and writing for young people. The degree requires four 10-day residencies at Murray State University, offered twice annually; most of the curriculum requirements are satisfied via distance learning. Furthermore, the program encourages collaboration with other institutions of higher learning by allowing students to transfer nine hours from any accredited graduate institution.

Requirements for Admission

Applicants must comply with the Murray State University requirements (see Chapter 2). Additional requirements for admission are:

- a baccalaureate degree with a major, minor, or evidence of sufficient study in, literature;
- committee approval of application based on the following factors:
 - writing sample in appropriate genre (see below).
 - GPA at previous undergraduate and/or graduate programs.
 - two letters of recommendation.
 - a personal essay (200-300 words) addressing your experiences and goals as a writer.
 - preparation and experience as demonstrated in personal statement.

Submission of Writing Sample

All applicants must declare a specialization in fiction, poetry, creative non-fiction, or writing for young people and submit a writing sample within the chosen genre. The writing sample may

be composed of one or multiple works. Prose samples should be double-spaced, and all samples should be typed in a legible font: fiction 20-30 pages; creative non-fiction 20-30 pages; poetry, 15-20 pages; writing for young people, 20-30 pages. Writing samples are not returnable.

THESIS TRACK ONLY

Total Course Requirements..... 48 hours

Three semesters of the following. Students must take at least two sections in chosen field: fiction, poetry, creative non-fiction, or writing for young people.

ENG 661 Fiction Tutorial

-or-

ENG 662 Poetry Tutorial

-or-

ENG 663 Creative Non-Fiction Tutorial

-or-

ENG 673 Writing for Young People Tutorial

Four semesters of the following. Students must take at least three sections in chosen concentration: fiction, poetry, creative non-fiction, or writing for young people.

ENG 665 Fiction Residency

-or-

ENG 666 Poetry Residency

-or-

ENG 667 Creative Non-Fiction Residency

-or-

ENG 674 Writing for Young People Residency

Required Courses

ENG 664 Field Study

ENG 668 Creative Thesis

Required Electives.....9 hrs

Graduate-level contemporary literature course (3 hrs)

Graduate-level literature courses (6 hrs)

Other Requirements

The creative thesis is the final body of work produced and submitted by the M.F.A. student. The thesis semester culminates in an oral thesis defense.

Master of Arts in Teaching English to Speakers of Other Languages

Requirements for Admission

Applicants must comply with the Murray State University requirements (see Chapter 2). Additional requirements for unconditional admission are as follows:

- an undergraduate major in English *or* a modern foreign language *or* approval by the TESOL Advisory Committee;
- at least 12 semester hours in one modern foreign language *or* demonstrated proficiency at that level (permission may be granted to complete this proficiency during the program; for non-native speakers, language may be English);
- For non-native speakers of English, a TOEFL score of 20 for each section of the iBT, an IELTS score of 6.5 with no band lower than 6.0 or a previous degree earned from an accredited U.S. institution or successful completion of Level 6 of the MSU ESL program.

- Students who have a minimum of 18 for each section of the iBT or an IELTS score of 5.5-6.0 with no band below 5.5, but meet all other conditions for admittance may be admitted conditionally by the TESOL Advisory committee. Under these conditions, students will have their English language skills assessed by the director of the TESOL program immediately after they arrive on campus to determine if further classes are needed to develop English language proficiency. After assessment the students may be assigned to full-time language study in the English as a Second Language Program, or permitted to take graduate-level classes on a conditional basis along with further designated language study, or permitted to begin graduate study without further restrictions.

NON-THESIS TRACK ONLY

Total Course Requirements.....34 hours

TSL 510	Applied Linguistics for Second Language Teaching
TSL 520	Computer Assisted Language Learning
TSL 530	Methods and Materials for Teaching ESL
TSL 533	Language and Culture
TSL 580	Practicum
TSL 610	Applied Linguistics and Professional Practices
TSL 615	Course and Syllabus Design in ESL
TSL 623	Testing and Evaluation in Second Language Teaching
TSL 630	Developing Intercultural Competence
TSL 653	Integrated ESL Skills Seminar
TSL 690	Internship

Other Degree Requirements

Formal evaluations during the course of the program, to include a one-hour oral exit examination.

CERTIFICATE:

Endorsement in English as a Second Language

In keeping with Kentucky Department of Education guidelines, students who hold or are earning a certificate to teach at the elementary, middle school or secondary level may seek a K-12 certificate endorsement in English as a second language by completing the following 12 semester hours of course work:

ENG 531	Introduction to Linguistic Science
ENG 533	Language and Culture
TSL 510	Applied Linguistics for Second Language Teaching
TSL 530	Methods and Materials for Teaching ESL

Other Degree Requirements

An oral examination is required. English as a Second Language certificate endorsement seekers are required in Kentucky to take the Teaching English as a Second Language Praxis exam upon completion of the above courses.

Department of Government, Law and International Affairs

Chair - Farouk Umar
5A Faculty Hall
270-809-2661

The Master of Public Administration (M.P.A.) degree program prepares students for careers as administrators in public service organizations. The program provides in-service personnel an opportunity to refine their administrative skills; it also provides individuals seeking positions (pre-service) an opportunity to develop administrative skills.

The program has two components: a) 21 hours or seven required core courses that provide a general foundation in public administration and b) 12 hours or four elective courses that may be selected to develop an area of specialization. The graduate courses taught by the Department of Government, Law and International Affairs support other graduate programs at Murray State University.

Requirements for Admission

Applicants must meet Murray State University requirements (see Chapter 2). Additional requirements for unconditional and conditional admission are as follows.

Unconditional

To qualify for unconditional admission, an applicant must have:

- an undergraduate major in political science, other social science or business, **or** substantial background in relevant disciplines;
- a grade point average of 2.75 (on a 4.00 scale);
- students whose native language is not English must present a minimum TOEFL score of 550 on paper based test or 213 on computer based test.

Conditional

For conditional admission, an applicant may have:

- a grade point average between 2.25 and 2.74 (on a 4.00 scale) **or**
- an overall grade point average of 2.0 to 2.24 **if** the student's experience is evaluated by the director and faculty of the M.P.A. program as indicating the likelihood of success;
- students whose native language is not English must present a minimum TOEFL score of 550 on paper based test or 213 on computer based test before the completion of nine (9) graduate hours.

Master of Public Administration

CIP 44.0401

NON THESIS TRACK ONLY

Total Course Requirements..... 33 hours

POL 573	Public Budgeting and Finance
POL 575	Human Resource Administration
POL 660	Research Methods
POL 670	Foundations of Public Administration
POL 671	Public Policy Analysis
POL 674	Public Organizations
POL 685	Public Administration Capstone
Graduate Electives (12 hrs)	

College of Humanities and Fine Arts

A student may take 12 hours of graduate electives from outside the Department of Government, Law and International Affairs to fulfill a specialized option or area of interest with the approval of the M.P.A. director.

At least half of the total course work must be taken at the 600 level.

NOTE: A maximum of 12 hours of relevant graduate courses with a grade of **B** or better may be transferred from a regionally accredited university for credit in the M.P.A. program. No more than nine hours of comparable courses may be transferred into the core as evaluated by the M.P.A. director. Official transferral of this credit shall take place after successful completion of nine hours of graduate work at Murray State University.

Department of History

Chair -Terry W. Strieter
Graduate Coordinator - William H. Mulligan, Jr.
6B Faculty Hall
270-809-2231

The master of arts program in history offers advanced study to qualified students in American, European, and Third World history. The course of study emphasizes the development of a coherent view of the past, the effective communication of ideas, and the familiarity with a variety of historical schools of interpretation.

The department offers three programs leading to the master of arts degree. The thesis track option is a general program of advanced study that requires a thesis; the two non-thesis tracks replace the thesis with additional training in the major/minor areas.

The master of arts in history provides excellent preparation for doctoral work in history, for law school, or for other professional and graduate education. The history M.A. is also excellent preparation for careers in government, public and private agencies concerned with history, and any career requiring research, analytical and writing skills. It also enables teachers to meet Rank II certification in Kentucky public schools.

The department's principal graduate course offerings are in American and modern European history, complemented by course offerings in Third World history.

The history department awards a limited number of assistantships each academic year. Applications for assistantships should be made directly to the graduate coordinator of the Department of History. Applications are due in April 1 for the forthcoming academic year.

Admission applications for the upcoming fall term should be received by June 1 of the same calendar year. The Department of History does not review any graduate applications until all materials—the graduate application, Graduate Record Examination (GRE) scores, letters of recommendation, writing sample, and official transcript—have been received by the graduate coordinator. The Department of History reserves the right to review transfer credit viability.

The graduate application and GRE scores should be sent to Graduate Admissions, Murray State University, Sparks Hall, Murray, KY 42071. All other materials should be sent to Graduate Coordinator, Department of History, Murray State University, 6B Faculty Hall, Murray, KY 42071-3341.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). Additional requirements are as follows.

Unconditional

- An undergraduate major or minor in history.
- GPA of 3.0 or better in history courses.
- GRE score of at least 900 (V+Q).
- 3-5 page (minimum) sample of historical writing.
- Two letters of recommendation that addresses candidates ability to do graduate work in history.

Conditional

A student with a GRE score of less than 900 (V+Q) may be admitted conditionally to the history M.A. program, but the student must satisfy the conditional requirements for admission as specified in Chapter 2.

Master of Arts in History

CIP 54.0101

Students admitted to history graduate study should consult with the department graduate advisor to declare a course of study which meets the requirements of the thesis and non-thesis options.

THESIS TRACK

Total Course Requirements..... 30 hours

HIS 600	Development of Historical Thinking
HIS 605	Seminar in European History
-or-	
HIS 631	Seminar in United States History to 1865
-or-	
HIS 633	Seminar in United States History since 1865
HIS electives in major area (12 hrs)	
HIS electives in minor area (6 hrs)	
HIS 698-699	Thesis

Other Degree Requirements

- A comprehensive examination of major and minor fields of study.
- Oral defense of thesis.
- Competency in an approved foreign language,
- or-
- Equivalent tool of research or special field of study (approval by graduate committee and department chair required; approval will be granted only when proposed alternative is demonstrably necessary to the student's academic needs).

NON-THESIS TRACK

UNITED STATES HISTORY OPTION

Total Course Requirements.....36 hours

HIS 600	Development of Historical Thinking
HIS 622	Readings in United States History
HIS 631	Seminar in United States History to 1865
HIS 633	Seminar in United States History since 1865
HIS electives in major area (9 hrs)	
HIS electives in minor area* (15 hrs)	

*The minor area is considered to be a combination of electives in European and/or Third World history.

Students may, on occasion, substitute graduate-level, non-history courses for electives in their major and/or minor fields. Such substitutions, however, require the consent of the graduate coordinator for the Department of History.

Other Degree Requirements

- Comprehensive written and oral examinations in major and minor areas.

EUROPEAN HISTORY OPTION

Total Course Requirements.....36 hours

HIS 600 Development of Historical Thinking

HIS 602 Readings in European History

HIS 605 Seminar in European History

HIS 663 Readings in Third World History

HIS electives in major area (9 hrs)

HIS electives in minor area (15 hrs)

*The minor area is considered to be a combination of electives in United States and/or Third World history.

Students may, on occasion, substitute graduate-level, non-history courses for electives in their major and/or minor fields. Such substitutions, however, require the consent of the graduate coordinator for the Department of History.

Other Degree Requirements

- Comprehensive written and oral examinations in major and minor areas.

**Master of Arts in Education
(Secondary Education) with
History Specialization**

CIP 13.1205

Students seeking the M.A.Ed. in secondary education (see Chapter 5) may complete a history specialization with 12 hours of 500- or 600-level history courses.

Department of Modern Languages

Chair - Janice Morgan
4A Faculty Hall
270-809-2501

**Master of Arts in Education
(Secondary Education) with
French, German, or Spanish Specialization**

CIP 13.1205

The Department of Modern Languages provides instruction in support of the M.A.Ed. in secondary education with a specialization in French, German or Spanish with 12 hours of 500-level courses in the appropriate language. Prospective students should contact the chair of the department for details on advising and graduate program design.

Foreign Language Examination

Students who are required by their departments to demonstrate proficiency in a foreign language may satisfy the requirement in one of the following ways:

- by completion of two years of college-level study in one language with an average grade of C or better; or
- by scoring 500 or above on the Placement Exam given by the Department of Modern Languages.

The native language of a foreign student may be accepted to meet the graduate language requirements if recommended by the student's advisor and approved by the graduate coordinator of the student's college.

For those disciplines which permit the substitution of statistics, computer science, or a combination thereof for a foreign language, the requirement may be met by the satisfactory completion of two semesters of the permitted substitute courses with grades of C or better. These courses are in addition to the total number of hours required for the degree. A proficiency examination administered by the appropriate department may be accepted in lieu of the required course work.

Department of Music

Chair - Pamela Wurgler
Graduate Coordinator - Pamela Wurgler
504 Price Doyle Fine Arts Center
270-809-4288

The Department of Music offers the Master of Music Education (M.M.E.) degree. The M.M.E. degree seeks to serve the region's teachers with opportunities to continue their professional growth, refining and extending their skills and knowledge beyond the baccalaureate level. The program provides leadership, enrichment, and resources for the region's music professionals in an atmosphere of musical activity. The curriculum is planned to:

- promote depth in critical thinking and analysis, resulting in the formulation of a personal philosophy of music education and an arts advocacy position;
- provide awareness of current issues in music, education, and the profession of teaching music at all levels;
- prepare students to assume leadership in music program administration through curriculum development aligned with state and national standards in the arts;
- refine and extend knowledge and skills in music: its history, composition, performance, pedagogy, and cultural values;
- provide opportunities for students to explore and apply technology as a tool for teaching music; and
- create networks among music professionals and assist the transition from intern teacher to mentor teacher and cooperating teacher.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). Each student who wishes to be considered for unconditional admission to graduate study leading to the Master of Music Education degree must have the following additional qualifications:

- an undergraduate music major, or the equivalent, with teacher certification;

Additional Requirements

During the first semester of course work the student, in consultation with the graduate advisor, must list chosen courses from the 30-hour curriculum on the Program of Studies form supplied by Graduate Admissions. Thereafter, any changes in this program must be accompanied by a Change of Program form in consultation with the graduate advisor.

College of Humanities and Fine Arts

The following must be completed during the **first term** of enrollment:

- graduate keyboard proficiency
- entrance proficiency in applied music (if applied study is an elective option);

Deficiencies in any one of these areas will be evaluated by the graduate coordinator and the graduate committee in consultation with unit chairpersons.

Master of Music Education

CIP 13.1312

ACCREDITED BY:

National Association of Schools of Music (NASM).

Each candidate's program is individually arranged with approval of the graduate coordinator in the Department of Music. The program is in accord with requirements for the Kentucky Certificate for Teaching Music Grades K-12 and includes a 12-semester-hour specialization component. The program may be completed in four semesters. Two summer terms are required.

THESIS TRACK

Total Course Requirements..... 30 hours

Professional Education Courses 12 hrs

- EDU 633 Curriculum Development
MUS 600 Historical and Philosophical
Foundations of Music Education
MUS 601 Psychological Foundations of Music Education
MUS 639 Methods of Research in Music Education

Specialization Component.....12 hrs

Music Theory

- MUS 610 Advanced Music Theory and Analysis

Music History

- MUS 659 Advanced Music History and Literature

Music Education

- MUS 629 Contemporary Instructional Practices
in Music Education

-and-

- MUS 627 The Elementary Music Program

-or-

- MUS 628 The Secondary Music Program

Thesis 6 hrs

- MUS 698 Music Thesis I
MUS 699 Music Thesis II

Other Degree Requirements

Written comprehensive examinations over all music and music education course work will be administered upon completion of all music course work and at least 24 hours of total course work. The student must complete the Application for Comprehensive Examination form, pay all required fees, and pass the functional keyboard proficiency exam before the comprehensive examination is administered.

NON-THESIS TRACK

Total Course Requirements.....30 hours
Same as above, with the following substitution for thesis:

Approved MUS electives, 500 or 600 level (6 hrs)

Department of Psychology

Chair - Renae Duncan

212A Wells Hall

270-809-2851

The Department of Psychology offers either the master of arts or the master of science degree in general psychology and in clinical psychology. A joint objective of both graduate programs is to provide graduate study whereby the student can seek career opportunities in governmental agencies, teach in two-year colleges, or pursue doctoral level study in psychology or related fields. An additional objective of the program in clinical psychology is to train the student in the areas of psychodiagnostics and psychotherapeutic techniques where these skills can be utilized in a community setting to include comprehensive care centers, schools and mental hospitals.

The curriculum has been developed to provide exposure to the breadth of psychology as well as intensive study of those areas which are currently of greatest concern in the field. In addition, work in statistics and research design is provided and participation in research is encouraged. The program in clinical psychology is approved by the Council of Applied Masters Programs in Psychology.

Psychology graduate courses are offered on a regularly scheduled rotation. Assuming no undergraduate course deficiencies, it is possible for a student to complete the general psychology program in one year and the clinical psychology program in two years.

Requirements for Admission

Early submission of applications is encouraged, as admission is competitive. Applications arriving after March 15 may not receive full consideration. Applicants must meet the Murray State University requirements (see Chapter 2). Additional requirements for unconditional and conditional admission are as follows.

Unconditional

- A minimum of 15 undergraduate credit hours in psychology, including courses in research methods, statistics and physiological psychology or their equivalent.
- A grade point average of 3.0 or higher overall and in psychology courses.
- Official score report of the Graduate Record Examination.
- Three letters of recommendation.
- A written statement of purpose for entering graduate work in psychology.

Conditional

The Department of Psychology does not normally admit students who fail to meet the university requirements for unconditional admission (see Chapter 2). However, students who otherwise meet those standards but lack the prerequisite undergraduate courses in psychology are encouraged to enroll in those classes as irregular or unclassified students. Such students should contact the department chairperson.

In some cases students lacking only one or two undergraduate prerequisite courses may be admitted with the understand-

ing that they must complete those undergraduate courses along with their graduate courses.

Please Note: Admission into Department of Psychology graduate programs obligates students to adhere to the ethical standards of the American Psychological Association as well as the academic conduct principles and the interpersonal skills policies of the department. Any violation of these is cause for dismissal from the program. In the case of the clinical program, the department reserves the right to deny admission to or discontinue the training of any student who in the judgment of the department's graduate training committee would not be able to function competently in the profession of clinical psychology.

Master of Arts or Master of Science in General Psychology

CIP 42.0101

THESIS TRACK ONLY

Total Course Requirements..... 30 hours

Foundations of Behavior

- PSY 621 Biological Bases of Behavior
- PSY 622 Cognitive Bases of Behavior
- PSY 623 Social Bases of Behavior
- PSY 624 Developmental Bases of Behavior

Research Foundations

- PSY 652 Univariate Research Design and Statistics
- PSY 688 Multivariate Research Design and Statistics
- 500- or 600-level PSY courses approved by graduate training committee (6 hrs)
- PSY 698-699 Thesis

Other Degree Requirements

- Oral defense and examination of the thesis.
- Competency in an approved foreign language (M.A. only).

Master of Arts in Education (Secondary Education) with Psychology Specialization

CIP 13.1205

Students seeking the M.A.Ed. in secondary education (see Chapter 5) may complete a psychology specialization with 12 hours of 500- or 600-level psychology courses.

Master of Arts or Master of Science in Clinical Psychology

CIP 42.0201

ACCREDITED BY:

Masters in Psychology Accreditation Council

The graduate admissions and training committee reserves the right to deny admission to an applicant or to discontinue the training of a student who, in the opinion of the committee, would not be able to function competently in the area of clinical psychology.

THESIS TRACK ONLY

Total Course Requirements..... 49 hours

Foundations of Behavior

- PSY 620 Graduate Seminar in Professional and Ethical Issues
- PSY 621 Biological Bases of Behavior
- PSY 622 Cognitive Bases of Behavior
- PSY 623 Social Bases of Behavior
- PSY 624 Developmental Bases of Behavior

Clinical Foundations

- PSY 645 Clinical Measurement and Evaluation I
 - PSY 664 Psychopathology
 - PSY 665 Clinical Measurement and Evaluation II
 - PSY 667 Practicum in Psychology (6 hrs)
 - PSY 670 Psychotherapeutic Procedures
- Two of the following courses:*
- PSY 671 Behavior Therapy
 - PSY 672 Family Therapy
 - PSY 682 Child Clinical Psychology
 - PSY 686 Group Psychotherapy Techniques

Research Foundations

- PSY 652 Univariate Research Design and Statistics
- PSY 688 Multivariate Research Design and Statistics
- PSY 698-699 Thesis

Other Degree Requirements

- Comprehensive examination over the course work.
- Oral defense and examination of the thesis.
- For the Master of Arts only, competency in an approved foreign language.



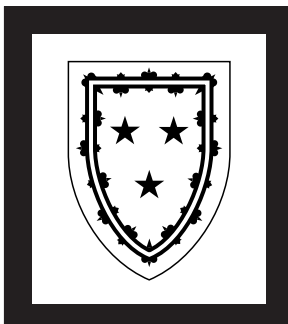
College of Science, Engineering and Technology

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College of Science, Engineering and Technology

Steve Cobb, Dean
Robert Pervine, Associate Dean and Graduate Coordinator
Martha Layne Collins Center for Industry and Technology,
Room 201A

The College of Science, Engineering and Technology has an outstanding record of excellence in teaching and research in the departments of Biological Sciences, Chemistry, Geosciences, Industrial and Engineering Technology, Mathematics and Statistics, and Engineering and Physics. The college's programs are strong because of its talented, dedicated, and student-oriented faculty. The faculty also have an impressive record of attracting extramural research funding which enhances equipment holdings and promotes the involvement of students in research. Students can expect to have considerable interaction with research faculty in both the classroom and laboratory, and will be exposed to state-of-the-art hardware and software. Graduates from the College of Science, Engineering and Technology are well prepared for further graduate study or to enter the workplace immediately.

Graduate degrees offered through the College of Science, Engineering and Technology are the master of arts in mathematics; the master of science in biology, chemistry, geosciences, management of technology, mathematics, and water science; and master of arts in teaching in mathematics. The college also offers courses in support of the master of arts in education. Further, the College of Science, Engineering and Technology, in conjunction with the College of Business and Public Affairs, offers a master of science in telecommunications systems management.

The Center for Reservoir Research (CRR), one of only five designated Centers of Excellence in the Commonwealth of Kentucky, has been in existence since 1987. In cooperation with state and national agencies such as the Tennessee Valley Authority, the U.S. Army Corps of Engineers, the U.S. Department of Energy, and the Kentucky Department of Natural Resources, and with private organizations and regional industry, the CRR maintains a program of research that insures Murray State's involvement in environmental concerns on regional, state, national, and international levels.

The Center for Watershed Environments (CWE) is a center that builds upon the accomplishments of the CRR and significantly expands the scope of Murray State's reservoir related research programs to explicitly include comprehensive studies of reservoirs at the landscape scale. The CWE, which is located in a unique region consisting of the confluence of four major rivers and two large reservoirs, offers the opportunity for graduate study and interdisciplinary research applied to understanding the complexity of interactions between human-altered landscapes and adjoining reservoirs.

The CRR and the CWE each draw on three components within the College of Science, Engineering and Technology: the Hancock Biological Station (HBS), the Mid-America Remote Sensing Center (MARC), and the Chemical Analysis Laboratory (CAL). The HBS, located on Kentucky Lake, is one of the finest facilities of its kind in the Midwest. Serving as the primary research facility for aquatic biologists and ecosystem scientists,

the HBS provides a unique opportunity for graduate study and research. At MARC, scientists and students apply remote sensing technology and geographic information science to study environmental data obtained from observational satellites and aircraft. The CAL provides state-of-the-art chemical analysis for studies in environmental chemistry, ecotoxicology, trace elements, and acid deposition.

The Center for Telecommunications Systems Management, designated a Center of Distinction by the Kentucky Council on Postsecondary Education, offers interdisciplinary courses and programs in conjunction with the College of Business and Public Affairs. Controlled student/teacher ratios, excellent computer support, and close collaboration with related business and industry, insures that students in the Center's programs develop professionally and graduate with the business insight and technical ability to manage all aspects of telecommunications systems.

With a highly qualified faculty dedicated to excellence in teaching and research, the College of Science, Engineering and Technology provides its graduates with the educational foundation on which to build a successful and fulfilling career.

Interdisciplinary Program in Water Science

Graduate Coordinator - Howard Whiteman
Hancock Biological Station
(270) 474-2272

The Center for Reservoir Research program in water science is an interdisciplinary master's program designed to prepare students for careers or for further graduate study in the broader aspects of water management and science. Each student's course of study will be designed to fit individual educational goals and may be concentrated in any aspect of water science. All students must complete a core curriculum, advanced courses in their areas of interest and a research thesis. During the first semester, students must work at either the Chemical Services Laboratory, the Mid-America Remote Sensing Center, or the Hancock Biological Station.

Requirements for Admission

Applicants must meet all Murray State University requirements (see Chapter 2). A faculty member must agree to mentor the student. Additional requirements for unconditional and conditional admission are as follows:

Unconditional

- Baccalaureate degree in biology, chemistry, geosciences, mathematics, physics, or a closely related field.
- At least a 3.0 undergraduate GPA.

- Composite GRE score of at least 1,000 (500 verbal + 500 quantitative).

Conditional

Recommendation of the advisory committee.

Master of Science in Water Science

CIP 26.1304

THESIS TRACK ONLY

Total Course Requirements..... 36 hours

BIO 535 Watershed Ecology (same as GSC 535)

BIO 669 Biological Limnology

BIO 670 Limnological Analysis Lab

GSC 665 Physical/Chemical Limnology

WSC 690 Seminar

WSC 698-699 Thesis

Graduate courses in related fields (16 hrs)

(as determined by advisory committee; at least seven hours at 600-level)

Other Degree Requirements

- Successful completion of courses in both statistics and introduction to computers, or MAT 565.
- Written and oral comprehensive examinations as specified by the advisory committee in broad aspects of water science and area of concentration (usually taken in third semester of residence).
- Defense of thesis.

Department of Biological Sciences

Chair - Tom Timmons

Graduate Coordinator - Edmund J. Zimmerer

2112 Biology Building

270-809-2786

The Department of Biological Sciences offers the master of science degree. The M.S. program is designed to prepare the student to assume an active career in teaching and/or research or to pursue further graduate studies. The department also participates in a cooperative Ph.D. program with the University of Louisville (see graduate coordinator for information) and the master of arts in education degree in secondary education with a teaching area in biology (see Chapter 5).

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). A faculty member must agree to mentor the student. Additional requirements for unconditional and conditional admission are as follows.

Unconditional

- Undergraduate courses in botany, zoology, ecology, and genetics.
- Eight undergraduate hours in chemistry.
- Composite GRE score of 1,000 (V+Q) or higher.

Conditional

Recommendation of the advisory committee.

Master of Science in Biology

CIP 26.0101

Within the guidelines, the individual's program is developed by an advisory committee to ensure proficiency in the basic areas of zoology, botany, ecology and genetics. The thesis track is strongly recommended for anyone considering further research or graduate activities.

THESIS TRACK

Total Course Requirements..... 30 hours

BIO 689 Introduction to Graduate Study

BIO courses, 600-level (8 hrs)

BIO courses, 500- or 600-level (3-12 hrs)

Graduate courses in related fields (0-9 hrs)

BIO 696 Understanding Scientific Communication

BIO 697 Seminar

BIO 698-699 Thesis

Other Degree Requirements

- Proficiency in quantitative methods through MAT 565 or a graduate course in bioinformatics, such as BIO 530.
- A preliminary examination will be given in the student's first semester to assess the student's understanding of principles across the diverse disciplines of biology.
- Oral defense of thesis.

NON-THESIS TRACK

Total Course Requirements..... 36 hours

BIO 689 Introduction to Graduate Study

BIO courses, 600-level (14 hrs)

BIO courses, 500- or 600-level (6-18 hrs)

Graduate courses in related fields (0-12 hrs)

BIO 696 Understanding Scientific Communication

BIO 697 Seminar

Other Degree Requirements

- Successful completion of an undergraduate level statistics course plus either MAT 565 or a graduate course in bioinformatics, such as BIO 530.
- A preliminary examination will be given in the student's first semester to assess the student's understanding of principles across the diverse disciplines of biology.
- BIO 695 Biological Research (4) with prior approval of the research topic by the student's graduate committee; results to be presented while enrolled in BIO 697.

Graduate courses must include a minimum of one 500- or 600-level course from each of the following fields: botany, zoology, ecology, and genetics. Specific courses that fulfill the requirements for these fields will be defined by the faculty.

**Master of Arts in Education
(Secondary Education) with
Biology Specialization**

CIP 13.1205

Students seeking the M.A.Ed. in secondary education (see Chapter 5) may complete a biology specialization with 12 hours of 500- or 600-level biology courses.

Joint Doctoral Program (Ph.D.)

CIP 26.0101

The department has a cooperative Ph.D. program with the University of Louisville in aquatic biology and the environmental sciences. A student accepted to this program will complete at least one year of work at the University of Louisville taking specific course work and/or conducting research. The remaining two to three years will be spent in residence at Murray State University. A written dissertation will be required and the degree conferred by the University of Louisville. Additional information can be obtained from the graduate coordinator in the Department of Biological Sciences, Murray State University.

Department of Chemistry

Chair - Judy Ratliff
Graduate Coordinator - Judy Ratliff
270-809-2584

The Department of Chemistry offers the master of science degree. The M.S. degree in chemistry is designed to prepare students for additional graduate work, as well as for immediate employment in industry or community colleges.

Master of Science in Chemistry

CIP 40.0501

The department offers both a thesis and a non-thesis track toward the M.S. in Chemistry.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). Additional information regarding unconditional and conditional admission is given below.

Unconditional

To qualify for unconditional admission, an applicant must have undergraduate preparation in chemistry. If that preparation does not conform to an American Chemical Society certified program, the student may be required to correct any deficiencies.

Conditional

Requirements for conditional admission are the same as MSU requirements (Chapter 2).

THESIS TRACK

Total Course Requirements.....30-32¹ hours²

CHE 511 Advanced Inorganic Chemistry I
CHE 527 Advanced Organic Chemistry
CHE 581 Advanced Physical Chemistry
CHE 601 Seminar³
CHE 602 Seminar³

Research and Other Requirements

CHE courses, 600-level (10-12 hrs)
CHE 698-699 Thesis Research

¹32 hours required if student must take all 500-level core courses as

a graduate student. Courses to be substituted for any of these required 500-level courses that were completed at the undergraduate level must be approved by the graduate advisor.

²At least half of the total formal coursework hours must be earned in 600-level courses, excluding CHE 698 and CHE 699.

³Each student is required to prepare and present one seminar based on a thorough search of the chemical literature and one based on the student's thesis research.

Other Degree Requirements

- Successful completion of an advanced instrumental analysis course (CHE 519 or equivalent). This course can not be used for graduate degree credit.
- Successful completion of an advanced biochemistry course (CHE 530 or equivalent). This course can not be used for graduate degree credit.
- Submission and defense of a satisfactory thesis.

NON-THESIS TRACK GENERAL CHEMISTRY OPTION

Total Course Requirements.....36 hours^{1,2,3}

CHE 511 Advanced Inorganic Chemistry I
CHE 527 Advanced Organic Chemistry
CHE 581 Advanced Physical Chemistry
CHE 601 Seminar⁴
CHE 602 Seminar⁴

Graduate courses approved by advisory committee (0-9 hrs)

¹Courses to be substituted for any required 500-level courses that were completed at the undergraduate level must be approved by the graduate advisor.

²At least half of the total formal coursework hours must be earned in 600-level courses.

³CHE 591, 592, and 593 will not count toward completion of this degree.

⁴Each student is required to prepare and present two seminars based on a thorough search of the chemical literature.

Other Degree Requirements

- Successful completion of an advanced instrumental analysis course (CHE 519 or equivalent). This course can not be used for graduate degree credit.
- Successful completion of an advanced biochemistry course (CHE 530 or equivalent). This course can not be used for graduate degree credit.
- CHE 600-level electives to total 36 hours.

Master of Arts in Education (Secondary Education) with Chemistry Specialization

CIP 13.1205

Students seeking the M.A.Ed. in secondary education (see Chapter 5) may complete a chemistry specialization with 12 hours of 500- or 600-level chemistry courses.

Department of Geosciences

Chair - Tom Kind
Graduate Coordinator - Tom Kind
104 Wilson Hall
270-809-2591

The Department of Geosciences offers a master of science degree that focuses upon applications of remote sensing, archaeologic and geographic information technologies. Students are prepared for positions in the public and private sectors and study at the Ph.D. level. The department also offers courses in support of the master of arts in education.

Geosciences is closely associated with the Mid-America Remote sensing Center (MARC) where hardware and software related to remote sensing and geographic information science are located. Students also have the opportunity to conduct research through activities of the department's Archaeology Laboratory.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). The department requires that three letters of recommendation accompany application materials. A letter discussing reasons for the applicant's interest in the program should also be forwarded. Submission of GRE scores is encouraged but not required. Additional requirements for unconditional and conditional admission are as follows.

Unconditional

To qualify for unconditional admission, an applicant must have an overall grade point average of 3.0 (on a 4.0 scale) in a geoscience (or related) field.

Conditional

Students admitted conditionally are admitted to full standing after completing (1) any remedial courses required by the graduate faculty and (2) one semester of graduate work with an overall grade point average of 3.0 or above.

Master of Science in Geosciences

CIP 40.0699

The student's program is developed in consultation with the graduate coordinator.

THESIS TRACK

Total Course Requirements..... 30 hours

- GSC 512 Remote Sensing
- GSC 521 Geographic Information Systems
- GSC 601 Graduate Study in the Geosciences
- GSC 640 Advanced Remote Sensing
- GSC 660 Spatial Analysis Techniques
- GSC courses at 600-level (3 hrs)
- GSC or related courses at 500- or 600-level (6 hrs)
- GSC 698-699 Thesis Research

Other Degree Requirements

- Proficiency in quantitative methods through MAT 565.
- Oral defense of thesis.

NON-THESIS TRACK

Total Course Requirements..... 33 hours

Same as above with the following substitution for thesis:

- GSC 696 Understanding Scientific Communication
- GSC courses, at 600-level..... increase to 6 hrs
- GSC or related courses at 500- or 600-level. increase to 10 hrs

Other Degree Requirements

- Proficiency in quantitative methods through MAT 565.
- Written and oral comprehensive examinations.

Master of Arts in Education (Secondary Education) with Geography Specialization

CIP 13.1205

Students seeking the M.A.Ed. in secondary education (see Chapter 5) may complete a geography specialization with 12 hours of 500- or 600-level geography courses.

Master of Arts in Education (Secondary Education) with Earth Science Specialization

CIP 13.1205

Students seeking the M.A.Ed. in secondary education (see Chapter 5) may complete an earth science specialization with 12 hours of 500- or 600-level earth science courses.

Department of Industrial and Engineering Technology

Chair - Daniel M. Claiborne
Graduate Coordinator - Michael Kemp
253 Industry and Technology Center
270-809-3392

The Department of Industrial and Engineering Technology offers the master of science degree in management of technology. This degree is designed for individuals who wish to further their knowledge of management, leadership, and technology. The program is appropriate for graduates with backgrounds in technology, engineering, science, and mathematics and other related fields who have significant business/industrial work experience.

The management of technology degree places emphasis on the involvement with real situations and problems for an industrial setting. A broad range of selections are provided in the areas of resource management, supervision and training, quality control, environment and safety management, business and finance, research, communications, and information systems.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). Additional requirements for unconditional and conditional admission are as follows. The Graduate Record Examination (GRE) is not required for admission to this program.

Unconditional

Admission to the master of science program in management of technology is open to persons holding a baccalaureate or higher degree from a regionally accredited college in engineering, engineering technology, science, or related fields. Persons holding degrees in other fields may also apply if the nature of the professional employment has provided significant technology-related experience. Courses included in the program of study may require prerequisite course work.

Unconditional admission requires a 2.75 grade point average (GPA based on an *A* equals 4.0).

Conditional

Students denied unconditional admission to master of science degree programs in the Department of Industrial and Engineering Technology, but who meet University requirements for conditional admission (outlined in Chapter 2), may petition for conditional admission. Conditional admission is usually reserved for applicants whose previous education and/or experience is evaluated by the department chair to indicate a likelihood of success. Students applying for conditional admission must have a GPA of 2.25 to 2.74 (2.00 to 2.24 with department permission). A student accepted conditionally will be expected to complete nine hours of prescribed work with a minimum 3.0/4.0 GPA. These initial nine hours are assigned by the advisor and may be in addition to the student's program of study. After completion of these nine hours the Departmental Graduate Committee will evaluate the student's progress. The first nine hours may include undergraduate or graduate courses as directed by the department. Depending on the student's undergraduate preparation, undergraduate courses may be required before enrolling in any graduate courses. Graduate courses may be allowed concurrently with these undergraduate courses in special situations.

Language Proficiency

Applicants whose native tongue is not English or who did not graduate from an English speaking college or university must demonstrate language proficiency. Applicants must adhere to the university's guidelines for language proficiency.

**Master of Science in
Management of Technology**

CIP 15.0000

The Management of Technology program is designed for individuals who are seeking positions of increased leadership and responsibility in business, industry, and government. Emphasis is placed on involvement with real situations and problems. The student, in consultation with an advisor, will develop an interdisciplinary plan of study to increase skills in a specific technical area and to strengthen abilities to communicate effectively in the management of technical functions.

Total Course Requirements..... 30 hours¹

CET	682	Industrial Environmental Management
IET	584	Engineering Economic Analysis
IET	597	Quality Control ²
IET	691	Industrial Operations
IET	693	Systems Management Technology
IET	695	Industrial Supervision

Electives 30 hrs

Select four electives from within or across any of the following categories. (No more than two courses total may be taken with the following prefixes: ACC, BPA, CIS, ECO, FIN, MGT, or MKT.)

Resource Management

GCM	560	Plant Equipment Layout and Purchasing
IET	619	Industrial Energy Management
TSM	603	Telecommunications Project Management

Supervision/Training

GCM	554	Printing Production and Manufacturing Management
GUI	670	Multicultural Issues in Human Services
MGT	550	Human Resource Management
MGT	551	Organizational Behavior
POL	575	Human Resource Administration

Environment, Safety Management

CET	555	Environmental Regulatory Affairs
CET	681	Pollution Assessment and Control
CET	686	Environmental Assessment and Remediation
OSH	550	Safety and Health Program Management Training

Business, Finance

ECO	500	Foundations of Economic Analysis
FIN	520	Risk Management
GCM	556	Communications Sales Management
MKT	568	Global Marketing Management
POL	671	Public Policy Analysis

Research, Communications and Information Systems

ADM	630	Methods of Research
COM	585	Advanced Organizational Communication
COM	681	Seminar in Conflict Resolution
GCM	552	Survey of Graphic Communication Management
GCM	558	Trends in Graphic Communication
IET	679	Technical Writings
IET	697	Research in Industrial and Engineering Technology
TSM	601	Telecommunications Principles
TSM	602	Telecommunications Systems
TSM	610	Telecommunication Networks Management

Other Degree Requirements

- A written comprehensive examination is required as a component of graduation requirements.
- Independent study courses and other elective courses may only be scheduled with prior advisor approval.

Note: A thesis track is available with the management of technology degree. Students interested in this track must receive departmental approval and direct guidance in the development of the thesis direction.

¹A minimum of 15 hours, excluding thesis, special problems, practicum, internship, or co-op credit, must be in courses open only to graduate students (600-level).

²A basic statistics course or equivalent is required prior to enrolling in IET 597.

Telecommunications Systems Management

SET Coordinator - Daniel Claiborne
270-809-6970

A joint venture between the College of Business and Public Affairs and the College of Science, Engineering and Technology, the masters program in telecommunications systems management provides students a core of fundamental courses and the option of choosing a specialization within the curriculum. Although students in the masters program will have the insight and ability to manage all aspects of telecommunications systems, the program option choice will support the aspect of management which interests them most, the physical systems and its components or the business structure and operations that depend on the system.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2).

Unconditional

TSM applicants will be unconditionally admitted if their undergraduate grade point average (GPA) is 3.0 or higher and they submit a Graduate Management Test (GMAT) score of at least 400 or submit a Graduate Record Examination (GRE) score of at least 800. However, if the applicant's GPA is less than 3.0 and they submit a GMAT score that satisfies the GMAT admission formula, or they submit a GRE score that satisfies the GRE admission formula, they will be fully admitted.

GMAT formula: $(200 \times \text{GPA}) + (\text{GMAT score}) > 1,000$

GRE formula: $(200 \times \text{GPA}) + \text{GRE} \geq 1,400$

Note: The GRE formula uses the combined score from the quantitative and verbal sections only. Ask the Educational Testing Service (ETS) to send scores directly to Murray State University using our institution code: 1494.

In addition, candidates must take the TOEFL and score at least 550 on the paper-based exam (or 213 on the computerized version) if English is not their native language or they have not graduated from an accredited English speaking university.

Conditional

TSM applicants may be admitted conditionally if their overall GPA is 2.75 or higher, or at least 3.0 for their last 60 hours of undergraduate study. The applicant could then be fully admitted to the program if the applicant meets at least one of the following two conditions:

1) The applicant takes TSM 601, TSM 610 and one other core course (ACC 604, MGT 651, TSM 602, TSM 603, or TSM 630) as their first nine hours of the program and maintains a 3.33 GPA for these nine hours; or

2) the applicant takes the GMAT or GRE and meets the unconditional admission formula within their first semester in the program.

If either of these conditions is not met, the applicant will be denied admission to the program even if the student has taken coursework in the program.

International Admission

Applicants, from any country where English is a second language, will be required to demonstrate English language proficiency. This can be done by taking the Test of English as a Foreign Language (TOEFL) exam and score at least:

1) 550 pBT (paper-based test)

- 2) 213 cBT (computer-based test)
 - 3) Minimum of 20 in each band iBT (internet-based test)
- Or take the International English Language Testing System (IELTS) exam and score 6.0 on the academic test (with no band <5.5) to be fully admitted into the program.

Master of Science in Telecommunications Systems Management

CIP 11.0401

NON-THESIS TRACK ONLY

Total Course Requirements.....30 hours

ACC 604	Quantitative Financial Controls
MGT 651	Seminar in Organizational Behavior
TSM 601	Telecommunications Principles
TSM 602	Telecommunications Systems
TSM 603	Telecommunications Project Management
TSM 610	Telecommunication Networks Management
TSM 630	Telecommunications Legal Environment: Law, Policy and Regulations
TSM 680	Telecommunications Solution Development

and two of the following:

ACC 608	Seminar in Accounting Information Systems
CIS 507	Fundamentals of Distributed Database Applications
CIS 609	Data Warehousing and Data Mining
CIS 645	Decision Support and Expert Systems
CIS 646	Manager's Guide to Database
CIS 647	Systems Analysis and Design for End User/Manager
ECO 625	Managerial Economics
FIN 612	Capital Investment Analysis
MKT 667	Marketing Planning and Application
MKT 675	Marketing Applications in E-Business
MKT 685	Business Geographics for Managers
TSM 670	Developing E-Commerce Applications
TSM 688	Telecommunications Systems Practicum

Department of Mathematics and Statistics

Chair - Donald Bennett
Graduate Coordinator - Renee Fister
6C-9 Faculty Hall
270-809-2311

The master of science and master of arts degrees are designed to provide students with the opportunity to study graduate level mathematics so that they may (1) obtain preferred employment in mathematics with government or industry, (2) teach at the junior college level or be better prepared to teach at the secondary school level, or (3) continue working toward a doctor of philosophy degree.

The master of arts program is a broadly based program which includes a study of algebra, analysis, topology, and the foundations of mathematics. The master of science program consists of a core of applied mathematics together with a core (at most 12 hours) in an allied field such as business, computer science, or physics. The program is flexible and is particularly suited to meet the needs of students preparing for careers in business, industry, or government.

The department also offers the master of arts in teaching degree in mathematics. This program is designed for certified teachers who wish to strengthen their discipline-based background and keep up with current information in educational theory, curriculum, and research.

All graduate programs in mathematics are planned in close consultation with the student's advisory committee and subject to its approval.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). Additional requirements for unconditional and conditional admission to M.S. or M.A. programs are as follows:

Unconditional

- Bachelor's degree from a regionally accredited college with a major (or the equivalent) in mathematics.
- Overall GPA of 3.0 or above in all mathematics courses beginning with the last elementary calculus course.

Conditional

Recommendation of the student's advisory committee.

Master of Arts in Mathematics

CIP 27.0101

THESIS TRACK

Total Course Requirements.....30 hours

MAT courses, 600-level* (12 hrs)

MAT courses, 500- or 600-level (12 hrs)

MAT 698-699 Research and Thesis (6 hrs)

*Must be approved by student's advisory committee.

Other Degree Requirements

Oral defense and examination of thesis.

NON-THESIS TRACK

Total Degree Requirements..... 30 hours

MAT courses, 600-level* (15 hrs)

MAT courses, 500- or 600-level (15 hrs)

*Must be approved by student's advisory committee.

Other Degree Requirements

Comprehensive examination over coursework.

Master of Science in Mathematics

CIP 27.0101

THESIS TRACK

Total Course Requirements..... 33 hours*

MAT courses, 600-level (9 hrs)

MAT courses, 500- or 600-level (6-18 hrs)

Allied field, 500- or 600-level (0-12 hrs)

MAT 698-699 Research and Thesis

*Must include at least 14 hours of 600-level courses, excluding thesis.

Other Degree Requirements

Oral defense and examination of thesis.

NON-THESIS TRACK

Total Course Requirements..... 33 hours*

MAT courses, 600-level (15 hrs)

MAT courses, 500- or 600-level (6 hrs)

Allied field, 500- or 600-level (12 hrs)

*Must include at least 17 hours of 600-level courses.

Other Degree Requirements

Comprehensive examination over course work.

Master of Arts in Teaching in Mathematics (M.A.T.)

CIP 27.0101

The M.A.T. program is designed for certified teachers who wish to strengthen their background in mathematics and keep up with current information in educational theory, curriculum and research. The program provides for both reasonable depth in the mathematics area and graduate-level exposure in supporting disciplines. Completion of this program fulfills the requirements for Rank II classification. A departmental advisor and an advisory committee must be established during the first semester of residence. A student portfolio is required.

Requirements for Admission

Applicants must meet the Murray State University requirements (see Chapter 2). Additional requirements for unconditional and conditional admission to the M.A.T. program are as follows.

Unconditional

- Minor in mathematics.
- Completion of requirements for teaching certification.

Conditional

See MSU requirements (Chapter 2) and conditional admission requirements for certification (Chapter 5).

NON-THESIS TRACK ONLY

Total Course Requirements..... 36 hours

MAT courses, 600-level (3 hrs)

MAT courses, 500- or 600-level (15-18 hrs)

Supporting field of science courses, 500- or 600-level (0-3 hrs)

Education Courses

ADM 630 Methods of Research

EDU 631 Application of Learning and Motivation Principles to the Classroom

EDU 633 Curriculum Development

EDU 645 History of Education in the United States

EDU 649 Research in Education

Master of Arts in Education (Secondary Education) with Mathematics Specialization

CIP 13.1205

Students seeking the M.A.Ed. in secondary education (see Chapter 5) may complete a mathematics specialization with 12 hours of 500- or 600-level mathematics courses.

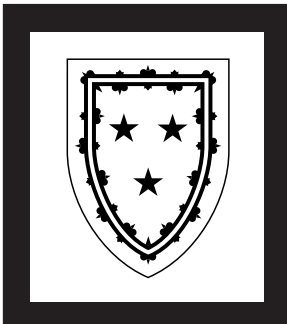


School of Agriculture

Graduate Program

Agriculture

98



School of Agriculture

Tony Brannon, Dean
Jay Morgan, Graduate Program Coordinator
103 Applied Science Building South

The School of Agriculture offers a master of science degree. The purpose of this degree is to provide an opportunity for professional agricultural personnel to obtain an education at the graduate level or to prepare for terminal degree work at the doctoral level. Faculty advisors assist students in planning an appropriate course of study to meet their individual goals and to assure a balanced program.

The master of science degree in agriculture provides concentration in either agricultural science or agricultural education.

Requirements for Admission

Applicants must meet all Murray State University requirements (see Chapter 2). The status (conditional/unconditional) of an applicant must be determined before the student enrolls in their first class. Additional requirements for unconditional and conditional admission are as follows.

Unconditional

For unconditional admission, students must meet both of the following requirements:

- An overall grade point average (GPA) of 3.0 in the last 60 hours of undergraduate work; and
- The equivalent of an undergraduate area or major in agriculture is required.

Conditional

Students may be conditionally admitted according to the following requirements:

- An undergraduate GPA of at least 2.5 or a GPA of 3.0 in the last 60 hours of undergraduate work; and
- In some cases, students without the undergraduate area or major may be admitted on the condition that they have significant agricultural work experience and/or complete prerequisites consisting of at least the undergraduate agriculture core courses in their respective field. The plan of study must be approved by the advisor and academic coordinator and may allow taking of a combination of undergraduate/graduate courses concurrently.

Upon completion of nine hours of graduate work a student admitted conditionally must have a 3.0 GPA or the student will be dropped from the program. A graduate student dropped for academic reasons may reapply after withdrawal from the graduate program for one semester. Readmission decisions will be made according to the recommendation of an appointed graduate admissions committee.

Master of Science in Agriculture

CIP 01.0000

THESIS TRACK

Total Course Requirements.....31 hours

AGR 620	Agricultural Experimental Design and Analysis
AGR 622	Graduate Capstone Seminar ¹
AGR 635	Research Methodology
AGR 698	Thesis
AGR 699	Thesis

Select nine hours from the following:

AGR 539	Advanced Computer Applications for Agriculture
AGR 566	Advanced Greenhouse Management and Production
AGR 573	Agricultural Processing Systems
AGR 601	Forage Management System
AGR 639	Agribusiness Management
AGR 645	Biotechnology and Agriculture

Specialty9 hrs
500- or 600-level, approved by faculty advisor.

The specialty area courses may be chosen, in consultation with an advisor, from courses that most effectively achieve the student's educational goals. **Note:** At least six hours of the 18 elective hours must be at the 600-level.

Other Degree Requirements

Comprehensive written examination over coursework.

¹Class must be taken during the last semester of enrollment. Each student will be expected to prepare and present one seminar based on their thesis project.

NON-THESIS TRACK

Professional Option

Total Course Requirements.....31 hours

AGR 600	Research in Agriculture ¹
AGR 620	Agricultural Experimental Design and Analysis
AGR 622	Graduate Capstone Seminar ²
AGR 635	Research Methodology

Select nine hours from the following:

AGR 539	Advanced Computer Applications for Agriculture
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- AGR 566 Advanced Greenhouse Management and Production
- AGR 573 Agricultural Processing Systems
- AGR 601 Forage Management System
- AGR 639 Agribusiness Management
- AGR 645 Biotechnology and Agriculture

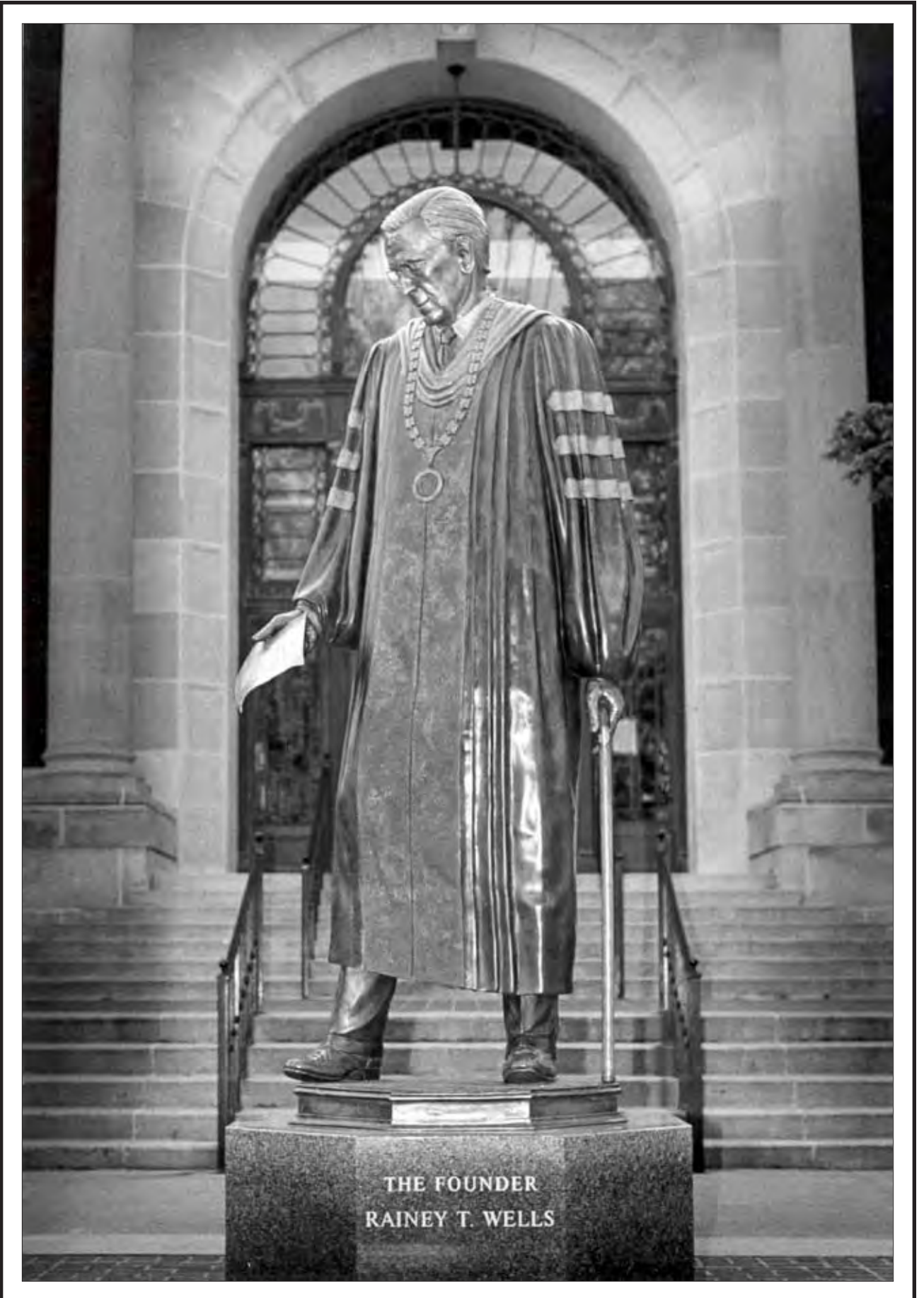
Specialty 12 hrs
500- or 600-level, approved by faculty advisor.

The specialty area courses may be chosen, in consultation with an advisor, from courses that most effectively achieve the student’s educational goals. **Note:** At least six hours of the 21 elective hours must be at the 600-level.

Other Degree Requirements

Comprehensive written examination over coursework.

¹Course must include a creative component or significant research report.
²Class must be taken during the last semester of enrollment. Each student will be expected to prepare and present one seminar based on their creative component, research report or work experience.



THE FOUNDER
RAINEY T. WELLS

Center for Continuing Education and Academic Outreach

Brian Van Horn, Interim Dean
303 Sparks Hall

The University has a responsibility to provide education access to the people of the region who desire educational opportunities. Extending the reach of the University throughout the region by providing opportunities for working professionals to pursue advanced degrees is a high priority. A number of graduate degree programs are made available through our network of regional campuses and through various distance learning methodologies. The Center for Continuing Education and Academic Outreach is a member of the Association for Continuing Higher Education (ACHE).

Distance Learning

For students who cannot attend traditional classes either on-campus or at one of the regional campuses, the University has developed an extensive program of distance learning classes delivered through the Internet. Murray State University utilized the Blackboard course management software to deliver these courses and works with the Kentucky Virtual University to further extend the outreach of the University through distance learning. Information about distance learning opportunities can be found through the KYVU web-site, www.kyvu.org or from Murray State as referenced to the right.

Regional Campuses

The primary service area of Murray State University encompasses 18 counties in far west Kentucky. To extend the outreach of the University throughout the service area, regional campuses have been established in Henderson, Hopkinsville, Madisonville, and Paducah. Programs are also offered at Ft. Campbell, as well as other sites throughout the region. Information concerning programs available at each site, admissions and registration procedures, and class schedules are published each semester in the Murray State University *Schedule*

of Classes. This information is also available by calling toll-free, 800-669-7654 or online at <http://ceao.murraystate.edu>.

Henderson Regional Campus

Henderson Community College
7B ADM Building
2660 South Green Street
Henderson, KY 42420
270-831-5111

Hopkinsville Regional Campus

West Regional Postsecondary Education Center
5305 Ft. Campbell Boulevard
Hopkinsville, KY 42241
270-707-1525

Madisonville Regional Campus

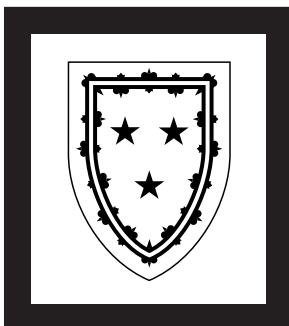
Madisonville Community College
333 Academic Building
2000 College Drive
Madisonville, KY 42431
270-825-4379

Paducah Regional Campus

Crisp Regional Higher Education Center
3000 Irvin Cobb Drive
Paducah, KY 42003
270-442-4753



Graduate Faculty



Graduate Faculty

Dates in parentheses indicate year of appointment at Murray State University.

- Almquist**, Bradley L., director of choral activities; professor, music. B.S., M.M., University of North Dakota; D.M.A., Louisiana State University. (1992)
- Anderson**, Jeffrey E., professor, chemistry. B.A., Gustavus Adolphus College; Ph.D., North Dakota State University. (1983)
- Anderson**, Ryan, assistant professor of agricultural systems technology; B.S., Illinois State University; M.S., Texas A&M-Commerce; Ph.D., Virginia Polytechnic Institute and State University. (2006)
- Atieh**, Bassam H., graduate program coordinator, professor, occupational safety and health. B.Sc., Old Dominion University; M.P.H., University of Tennessee; M.B.A., University of Texas-Permian Basin; Sc.D., Tulane University. (1991)
- Babcock**, Squire K., associate professor, English. B.A., M.F.A., University of Massachusetts. (1992)
- Baker**, Sonya G., assistant dean, College of Humanities and Fine Arts; associate professor, music. B.A., Yale University; B.M., M.M., Indiana University; D.M., Florida State University. (2002)
- Balthrop**, David S., chair, Department of Theatre and Dance, professor, theatre. B.A., Eastern Kentucky University; M.A., M.F.A., University of Cincinnati. (1993)
- Badasyan**, Narine, assistant professor, telecommunications systems management; B.S., Yerevan State University; M.B.A., American University of Armenia; M.A., Ph.D., Virginia Polytechnic Institute and State University. (2004)
- Bartnik**, Linda, lecturer, library; B.A., Anderson College; M.L.S., Indiana University; M.A., Murray State University. (1984)
- Batts**, R. Andrew, technology coordinator; College of Business and Public Affairs, associate professor, computer science. B.S., M.A., Ph.D., University of Kentucky. (1975)
- Baust**, Joseph A., director, Center for Environmental Education; professor, education. B.S.E., M.A.Ed., Memphis State University; Ed.D., University of Tennessee. (1978)
- Beahan**, Charlotte L., professor, history. B.A., Michigan State University, M.A., Ph.D., Columbia University. (1980)
- Beaver**, Jeanne, assistant professor. B.F.A., M.A., Iowa State University; M.F.A., Indiana University. (1999)
- Begley**, Thomas R., associate professor, occupational safety and health. B.S., M.S., University of Illinois; P.E. (1976)
- Bennett**, Donald E., chair, Department of Mathematics and Statistics; professor, mathematics. B.S., Murray State University, M.S., Ph.D., University of Kentucky. (1970)
- Bierwirth**, H. Chris, director, Kentucky Institute for International Studies; associate professor, history. B.A., University of Minnesota; M.A., University of Colorado; Ph.D., University of Wisconsin-Madison. (2002)
- Binfield**, Kevin A., professor, English. B.A., Nebraska Wesleyan University; M.A., University of Nebraska-Lincoln; Ph.D. University of Nebraska-Lincoln. (1997)
- Bishop**, Steven, professor, art. B.A., M.F.A., Southern Illinois University. (1979)
- Black**, Randall, professor, music. B.M., Southern Illinois University; M.M., D.M., Indiana University. (1986)
- Blaylock**, Charles, assistant professor, finance; A.A., Florida College; B.S., Delta State University; M.B.A., M.S.B.A., Ph.D., Mississippi State University. (2005)
- Blodgett**, Elizabeth G., professor emeritus, communication disorders. B.A., Stetson University; M.A., Auburn University; M.A., Ed.D., University of Alabama. (1977)
- Bodevin**, Leon, associate professor, Spanish. B.A., M.A., University of Texas-San Antonio; Ph.D., Texas Tech University. (1999)
- Bokeno**, R. Michael, professor, organizational communication. B.S.C., Ohio University; M.S., Murray State University; Ph.D., Purdue University. (1995)
- Bolin**, J. Duane, professor, history. B.A., Belmont University M.A., Ph.D., University of Kentucky. (1996)
- Booth**, James L., professor emeritus, organizational communication. B.A., Glenville State College; M.A., West Virginia University; Ph.D., Purdue University. (1976)
- Brannon**, Tony L., dean, School of Agriculture, professor, agriculture. B.S., M.S., Murray State University; Ed.D., Oklahoma State University. (1988)
- Brasfield**, David W., chair, Department of Economics and Finance; professor, economics. B.A., M.S., Louisiana State University; Ph.D., University of North Carolina. (1986)
- Brockway**, Gary R., provost and vice president of academic affairs; professor, marketing. A.A.S., B.S., Rochester Institute of Technology; M.B.A., Ph.D., University of Arkansas. (1976)
- Brookhiser**, Judy, associate professor, outdoor recreation. B.S., Western Illinois University; M.S., Pennsylvania State; Re.D., Indiana University. (1990)
- Broughton**, James C., dean, College of Health Sciences and Human Services; professor, recreation. B.S., Lander College; M.S., Memphis State University; Ph.D., University of Maryland. (1989)
- Brown**, Margaret H., professor, German and Spanish. B.A., Murray State University; M.A., University of Southwestern Louisiana; Ph.D., University of Texas-Austin. (1990)
- Brown**, Ogden III (Ted), dean, College of Humanities and Fine Arts; associate professor, English. B.A., University of Redlands; M.A., Ph.D., Claremont Graduate School. (1991)
- Brown**, Stephen B., professor, music. B.A., Tufts University; M.M.A., Yale University; D.M.A., Ohio State University. (1982)
- Bryant**, Jim, associate professor, art. B.F.A., Indiana University; M.F.A., Louisiana State University. (2001)
- Calvert**, Wesley C., assistant professor, mathematics; B.A., Augustana College; M.S., Ph.D., University of Notre Dame. (2005)
- Campoy**, Renee W., professor, education. B.S., University of Missouri-St. Louis; M.A., Webster University; Ed.D., University of Missouri-St. Louis. (1996)
- Canerdy**, Terry D., head, Department of Animal Health Technology and Pre-Veterinary Medicine; professor, agriculture. B.S., University of Tennessee-Martin; D.V.M., University of Tennessee-Knoxville. (1984)
- Canning**, David R., associate professor, biology. B.S., University of Manchester; Ph.D., University of Oxford. (1996)
- Carpenter**, Floyd W., professor, accounting. B.S., M.B.A., Murray State University; Ph.D., University of Mississippi; C.P.A. (1987)
- Carpenter**, Stephanie A., associate professor, history. B.S., University of Vermont; M.S., Ph.D., Iowa State University. (1998)
- Cetin**, Haluk, associate professor, geosciences. B.S., M.A., Hacettepe University; Ph.D., Purdue University. (1995)
- Chakradhar**, Kala, assistant professor, social work; B.A., M.S.W., University of Madras; M.P.S.W., Bangalore University, National Institute of Mental Health and Neurosciences; Ph.D., Tata Institute of Social Sciences. (2004)
- Chamberlain**, Don, chair, Department of Accounting; professor, accounting. B.S., West Virginia Institute of Technology; M.B.A., Murray State University; D.B.A., University of Kentucky; C.G.F.M. (1986)
- Chaney**, Joseph G., senior lecturer, legal studies. B.S., Murray State University; J.D., University of Arizona. (1986)
- Claiborne**, Daniel M., chair, Department of Industrial and Engineering Technology; associate professor, industrial technology. B.S., M.S., Murray State University; Ph.D., University of Missouri. (1985)

- Clardy, Brian**, associate professor, history. B.A., University of Tennessee-Martin; M.A., Murray State University; Ph.D., Southern Illinois University-Carbondale. (2006)
- Claywell, Gina**, professor, English. B.A., Western Kentucky University; M.A., University of Tennessee; Ph.D., University of Tennessee. (1997)
- Clinger, James C.**, associate professor, political science. B.A., M.A., University of Kansas; Ph.D., Washington University. (2002)
- Cobb, Barbara**, associate professor, English. B.A., Wellesley College; M.A., Ph.D., Rutgers University. (2002)
- Cobb, Stephen H.**, dean, College of Science, Engineering and Technology; professor, physics and engineering. B.S., M.S., Murray State University; M.S., Ph.D., Georgia Institute of Technology. (1988)
- Cox, J. Ricky**, professor, chemistry. B.S., University of Tennessee-Martin; M.S., Murray State University; Ph.D., University of Tennessee-Knoxville. (2000)
- Cox, Stephen A.**, chair, Department of Organizational Communication; associate professor, organizational communication. B.A. and M.A., Western Kentucky University; Ph.D., University of Missouri-Columbia. (1997)
- Crofton, John B.**, professor, physics and engineering. B.S., B.E.E., M.S., Ph.D., Auburn University. (1994)
- Culpepper, Jetta C.**, associate professor, library science; B.S., M.A.Ed., Murray State University; M.L.S., Ed.S., George Peabody College of Vanderbilt University. (1969)
- Daughaday, Lillian L.**, associate professor, sociology. B.A., M.A., Western Kentucky University; Ph.D., University of Cincinnati. (1981)
- Davis, James D.**, head, Department of Animal and Equine Science; professor, agriculture. B.S., M.S., Ph.D., Mississippi State University. (1984)
- Dawkins, Laura**, graduate coordinator, associate professor, English. B.A. University of Louisville; M.A. University of Kentucky; Ph.D. Indiana University. (1998)
- DeBella, Joe**, associate professor, physical education. B.S., Northeastern University; VT MED, Norwich University; Ph.D., Texas A&M University. (2002)
- Derting, Terry L.**, professor, biology. B.A., Mount Holyoke College; M.S., Virginia Polytechnic Institute and State University; Ph.D., Indiana University. (1993)
- DeWees, William**, assistant professor; animal health technology; B.S., M.S., University of Tennessee; DVM, Mississippi State University. (2005)
- Dillon, John F.**, professor, journalism and mass communications. B.A., City University of New York; M.A., University of Missouri-Columbia; Ph.D., Southern Illinois University. (1984)
- Donnelly, Robert G.**, professor, mathematics. B.S., Liberty University; Ph.D., University of North Carolina. (1997)
- Dougherty, Richard J.**, chair, Department of Art, professor, art. B.F.A., M.F.A., Maryland Institute, College of Art. (1992)
- Dressler, John C.**, professor, music. B.M.E., Baldwin-Wallace College; M.M., D.M., Indiana University. (1987)
- Driskill, C. Dwayne**, head, Department of Agricultural Sciences; professor, agriculture. B.S., M.S., Murray State University; Ed.D., Oklahoma State University. (1984)
- Duncan, Rena E.**, chair, Department of Psychology; professor, psychology. B.A., University of Maryland; M.S., Ph.D., Florida State University. (1993)
- Dunham, Mardis D.**, professor, school psychology. B.A., M.S., S.S.P., Northeast Louisiana University; Ph.D., University of Missouri. (1997)
- Duobinis-Gray, Leon F.**, associate professor, biology. B.S., M.S., East Tennessee State University; Ph.D., Louisiana State University. (1988)
- Durr, David**, Bauernfeind Endowed Chair in Investment Management; professor, finance. B.B.A., University of Texas-Austin; M.B.A., Stephen F. Austin University; Ph.D., University of North Texas. (2003)
- Eaton, David H.**, professor, economics. B.A., University of Maryland; M.A., Ph.D., University of Michigan. (1996)
- Ebert, Reika**, associate professor, German. B.A., M.A., Philipps Universität, Marburg, Germany; Ph.D., University of Washington. (2000)
- Edington, Susan**, senior lecturer, education. B.A., Kentucky State University; M.A.Ed., State University of New York -Plattsburgh; Ed.D., University of Kentucky. (2002)
- Edminster, Warren**, associate professor, English. B.A., Ph.D., Baylor University; M.A., Clemson University. (2000)
- Fairbanks, Kenneth B.**, professor, mathematics. B.S., Roberts Wesleyan College; M.A., Ph.D., University of Missouri-Columbia. (1979)
- Fannin, Harry B.**, professor, chemistry. B.S., Murray State University; Ph.D., University of Cincinnati. (1988)
- Farrell, Kathleen**, associate professor, nursing. B.S.N., M.S.N., State University of New York-Stonybrook; D.N.Sc., University of Tennessee Health Science Center. (1997)
- Fender, David**, associate professor, occupational safety and health. B.S., Central Missouri State University; M.S., University of Southern California; Ed.D., Vanderbilt University. (1995)
- Ferguson, David**, professor, agriculture. B.S., M.S., Ohio State University; Ph.D., Kansas State University. (1996)
- Ferreira, Bertus R.**, professor, criminal justice; B.A., University of South Africa; B.A., Wichita State University; M.S., M.S., Central Missouri State University; M.Phil., St. John's College, University of Cambridge, England; Ed.D., Oklahoma State University. (2005)
- Fister, Renee**, graduate coordinator, professor, mathematics. B.A., Transylvania University; M.S., Ph.D., University of Tennessee. (1996)
- Flynn, Richard F.**, assistant professor, school administration. B.S., Indiana State Teachers College; M.S., University of Notre Dame; Ed.D., Ball State University. (1996)
- Frame, Jeffrey C.**, director, Dietetics Internship Program, associate professor, dietetics. B.S., Purdue University; M.S., Kansas State University; Ph.D., University of North Carolina. (1999)
- France, Nancy E.M.**, graduate coordinator, professor, nursing. B.S.N., Murray State University; M.S.N., Vanderbilt University; Ph.D., University of Colorado. (1982)
- Fuller, Claire A.**, associate professor, biology. B.A., University of California, San Diego; M.S., Oregon State; Ph.D., Oregon State. (1997)
- Gannon, B. Anthony**, associate professor, history. B.S., M.S., Marquette University; Ph.D., Southern Illinois University-Carbondale. (1997)
- Garfield, Gene J.**, professor emeritus, political science. B.S., M.S., Utah State University; Ph.D., Southern Illinois University. (1970)
- Garth, Katy E.**, lecturer. B.S.N., Murray State University; M.S.N., Vanderbilt University. (1993)
- Gayman, Cynthia**, assistant professor, philosophy. B.A., Seattle University; M.A., Ph.D., Southern Illinois University. (2003)
- Gesler, David M.**, assistant professor, organizational communication. B.A., University of California-Davis; M.A., Murray State University; Ph.D., University of Tennessee. (2003)
- Gibson, David R.**, associate professor, mathematics. B.A., M.S., M.A., Ed.D., University of Kentucky. (1995)
- Gill, Sharon**, professor, education. B.A., University of Louisville; B.A., M.A.Ed., Northern Kentucky University; Ed.D., University of Cincinnati. (1994)
- Glover, Thomas**, assistant professor of legal studies; B.A., University of Mississippi; M.S., Pepperdine University; M.P.A., Murray State University; J.D., University of Kentucky. (2005)
- Graham-Schneider, Lissa L.**, assistant professor, theatre; B.A., Christopher Newport University; M.F.A., Virginia Commonwealth University. (1996)
- Guin, Larry D.**, professor, finance. B.S., M.B.A., D.B.A., Mississippi State University; C.F.A. (1978)
- Gupta, Ramesh C.**, head veterinary toxicologist, Breathitt Veterinary Center; professor, veterinary pathology. D.V.M., G.B., Pant University of Agriculture and Technology; Ph.D., Punjab Agricultural University. (1987)
- Gutwirth, Sarah**, professor, art. B.A., Reed College; B.F.A., Museum Art School, Portland, Oregon; M.F.A., Pratt Institute. (1998)
- Hall, Arlene M.**, associate professor, special education. B.S., Ball State University; M.Ed., University of South Carolina, Ph.D., Purdue University. (1997)
- Hammons, Jo-Ann**, professor, communication disorders. B.S., Jackson State University; M.S., Atlanta University; Ph.D., Smith College. (1989)
- Handayani, Iin**, assistant professor of soil science; B.S., Gadjah Mada University; M.S., University of Arkansas; Ph.D., University of Kentucky. (2006)
- Hand-Bryant, Nicole**, associate professor. B.S., Nazareth College; B.F.A., University of South Dakota; M.F.A., University of Miami. (1999)
- Hansen, Jacqueline**, associate professor, education. B.A., Doane College; M.A.Ed.(2), University of Nebraska-Kearney; Ed.D., University of Nebraska-Lincoln. (2000)
- Harrison, Dannie E.**, Hutchens Distinguished Professor, economics. B.S.B., M.B.A., Murray State University; Ph.D., Southern Illinois University. (1969)
- Hart, Sharon**, assistant professor, communication disorders; B.S., Murray State University; M.A., University of Tennessee. (1997)

Graduate Faculty

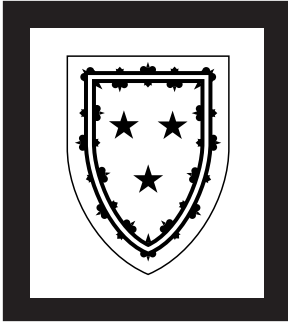
- Hartman**, Karen, associate professor, nursing. B.S.N., M.S.N., Indiana University; Ph.D., University of Texas-Austin. (2001)
- Hassan**, Seid Y., professor, economics. B.A., American University of Cairo; M.A., Texas Tech University; Ph.D., Texas A&M University. (1992)
- He**, Kate, assistant professor of biology; B.S., M.S., Northeast Forestry University; Ph.D., University of Western Ontario. (2005)
- Hereford**, James M., associate professor, physics and engineering. B.S., Stanford University; M.S.E.E., Ph.D., Georgia Institute of Technology. (2001)
- Herr**, Stephen, assistant professor, education. B.A., Antioch College; M.A., Ed.D., Columbia University. (2005)
- Higginson**, Bonnie, associate provost; professor, education. B.S., M.S., S.C.T., Murray State University; Ph.D., University of Georgia. (1979)
- Holcomb**, Thomas F., chair, Department of Educational Studies, Leadership and Counseling, guidance and counseling programs coordinator; professor, guidance and counseling. B.A., St. Martin's College; M.Ed., Ohio University; Ed.D., University of Tennessee. (1971)
- Holliday**, Dwight, associate professor, education. B.S., Louisiana State University; M.E., Southeastern Louisiana University; Ph.D., University of Southern Mississippi. (2003)
- Holmes**, Terence, chair, Department of Management, Marketing and Business Administration; associate professor, telecommunications systems management-marketing. B.S., University of Louisville; M.B.A., University of Kentucky; Ph.D., University of Cincinnati. (2000)
- Homsey**, Lara K., assistant professor, geosciences. B.A., Shippensburg University; M.S., Ph.D., University of Pittsburgh. (2004)
- Hooks**, Janice, assistant dean, College of Education, professor emeritus, education. B.S., M.A.Ed., Murray State University; Ed.D., Indiana University. (1965)
- Horwood**, Stephen E., professor, graphic communications technology. B.S., Sam Houston State University; M.S., South Dakota State University; Ph.D., Southern Illinois University-Carbondale. (1976)
- Howe**, Mica K., associate professor, Spanish. B.A., M.A., Ph.D., University of Nebraska-Lincoln. (1995)
- Islam**, Chhanda, associate professor, education. B.S., M.S., University of Southern Mississippi; Ed.D., Jacksonville State University. (1999)
- Ivansic**, Dubravko, associate professor, mathematics; B.S., University of Zagreb; M.A., Ph.D., University of Oklahoma. (2002)
- Jacobs**, Martin J., professor, education. B.S., Eastern Michigan University; M.A., Oakland University; Ed.D., Florida International University. (1994)
- Jesswein**, Kurt R., assistant professor, finance. B.B.A., University of Wisconsin-Whitewater, M.I.B., Ph.D., University of South Carolina. (1999)
- Johnston**, Timothy C., professor, biology. B.A., Harding College; M.S. Murray State University; Ph.D., Southern Illinois University. (1986)
- Jones**, Steven H., chair, Department of Social Work, Criminal Justice and Gerontology; associate professor, gerontology. B.A., Arkansas Agricultural and Mechanical College, M.A., Ph.D., Washington University-St. Louis. (1977)
- Kearney**, Barbara, assistant professor, nursing. B.S.N., Indiana State University; M.S.N., Ph.D., University of Texas-Austin. (1999)
- Keller**, Randal J., professor, occupational safety and health. B.A., Eisenhower College; M.S., Ph.D., Utah State University. (1996)
- Kellie**, Andrew C., professor, engineering technology. B.S., M.S., University of Maine. (1982)
- Kemp**, Michael C., professor, engineering technology. B.S., Tennessee Technology University; M.S., Utah State University; Ph.D., Tennessee Technology University. (1995)
- Kind**, Thomas C., chair and graduate coordinator, Department of Geosciences; professor, geosciences. B.A., Valparaiso University; M.A., Ph.D., Indiana State University. (1976)
- King**, Kate, director of criminal justice program, professor. B.S., San Diego State University; M.A., Ph.D., State University of New York-Albany. (2003)
- Kipphut**, George W., professor, biology and geosciences. B.S., Providence College; M.Phil., Ph.D., Columbia University. (1991)
- Kobraei**, Hamid R., professor, physics and engineering. B.S., The National University; M.S., The American University; Ph.D., West Virginia University. (1985)
- Koenecke**, William H., assistant professor, education. B.S., Murray State University; M.S., Southern Illinois University-Carbondale; M.S., Illinois State University; Ph.D., Southern Illinois University-Carbondale. (2001)
- Koren**, Johan H., associate professor, education. B.A., University of Stirling; A.M.L.S., Ph.D., University of Michigan-Ann Arbor. (2003)
- Kraemer**, David G., chair, Department of Occupational Safety and Health; associate professor, occupational safety and health. B.S., M.S., Ph.D., Southern Illinois University. (1986)
- Lacewell**, Stephen K., associate professor, finance. B.S., University of Tennessee-Martin; M.B.A., Murray State University; M.S.B.A., Ph.D., Mississippi State University. (1999)
- Landini**, Ann L., associate professor, journalism and mass communications. B.A., Kentucky Wesleyan College; M.S., Murray State University; Ph.D., University of Tennessee. (1985)
- Lanier**, Michael T., senior lecturer, management. B.S., M.B.A., Murray State University; D.B.A., Southern Illinois University-Carbondale. (1991)
- Lewis**, Scott J., associate professor, mathematics. B.S., Brown University; M.S., Ph.D., University of Rhode Island. (1999)
- Leys**, Dale D., professor, art. B.F.A., Layton School of Art and Design; M.A., M.F.A., University of Wisconsin-Madison. (1977)
- Liljequist**, Laura K., professor, psychology. B.A., Depauw University; M.A., Ph.D., University of South Florida. (1999)
- Lochte**, Robert H., chair, Department of Journalism and Mass Communications; professor, journalism and mass communications. A.B., Bowdoin College; M.A., Columbia College; Ph.D., University of Tennessee. (1987)
- Locke**, Scott, associate professor, music. B.M., Ball State University; M.M., University of Southern California; D.A., Ball State University. (1995)
- Loganathan**, Bommanna, associate professor, chemistry. B.S., University of Madras, India; M.S., Annamalai University, India; Ph.D., Ehime University, Japan. (2000)
- Lucko**, Paul M., associate professor, criminal justice. B.A., M.A., Texas A & M University; Ph.D., University of Texas at Austin. (2000)
- Lyle**, William F. III, assistant professor, computer science. B.S., Davidson College; M.S., Ph.D., Clemson University. (1981)
- Lyons**, Robert, associate professor, school administration. B.S., M.S., Murray State University; Ed.D., University of Memphis. (2000)
- Mangold**, Glynn, professor, marketing. B.S., Murray State University; D.B.A., University of Memphis. (1994)
- Martin**, David, associate professor, management. B.G.S., University of Nebraska-Omaha; Ph.D., University of Memphis. (2000)
- Martin**, Robert A., professor, biology. B.A., Hofstra University; M.S., Tulane University; Ph.D. University of Florida. (1993)
- Mason**, Eileen, associate professor, occupational safety and health. B.A., M.A., Ph.D., Michigan State University. (2001)
- Mathis**, Gilbert L., professor emeritus, economics. B.S., M.S., University of Kentucky; Ph.D., Ohio State University. (1966)
- McCarthy**, C. Maeve, professor, mathematics. B.Sc., M.Sc., National University of Ireland; M.A., Ph.D., Rice University. (1998)
- McCoy**, James P., associate provost; distinguished professor, economics. A.B., Xavier University; Ph.D., University of North Carolina-Chapel Hill. (1985)
- McCreary**, Terry W., professor, chemistry. B.S., St. Francis College; M.S., University of Georgia; Ph.D., Virginia Polytechnic Institute and State University. (1988)
- McNeely**, Bonnie L., professor, management. B.S., M.S., University of Kentucky; M.B.A., Murray State University; Ph.D., University of South Carolina. (1987)
- Mecklin**, Christopher J., associate professor, mathematics. B.S., University of Wyoming; M.S., Ph.D., University of Northern Colorado. (2000)
- Menchinger**, Brent, assistant professor of theatre; B.S., Western Michigan University; M.F.A., Wayne State University. (2000)
- Miles**, Sandra, professor, management. B.S., University of Wisconsin-Green Bay; M.B.A., D.B.A., Southern Illinois University. (1991)
- Milkman**, Martin I., professor, economics. B.A., Brandeis University; M.S., Ph.D., University of Oregon. (1988)
- Miller**, Creighton J., professor, communication disorders. B.A., Indiana university; M.A., University of Washington; Ph.D., Purdue University. (1978)
- Miller**, Fred L., professor, marketing. B.A., Centenary College; M. Div., Illiff School of Theology; M.B.A., Murray State University; M.A., Ph.D., Temple University. (1980)
- Miller**, Thomas I., professor, accounting. B.S., M.B.A., Murray State University; Ph.D., University of Arkansas; C.P.A. (1967)
- Morgan**, Janice M., chair, Department of Modern Languages; professor, French. B.A., M.A., Ph.D., Indiana University. (1986)
- Morgan**, Joseph A., graduate coordinator; professor, agriculture. B.S., M.S., Murray State University; Ph.D., Oklahoma State University. (1997)
- Morgan**, Michael E., English education director; associate professor, English. B.A., Pennsylvania State University; M.A., Old

- Dominion University; Ed.D., University of Massachusetts. (1991)
- Mulligan**, William H., Jr., professor, history. B.A., Assumption College; M.A., Ph.D., Clark University. (1993)
- Murphy**, Janis E., associate professor, education. B.S., District of Columbia Teachers College; M.A., George Washington University; Ph.D., University of Minnesota. (1991)
- Murphy**, Peter F., professor, English. B.A., State University of New York at Potsdam; M.A., University of Toronto; Ph.D., State University of New York-Buffalo. (1998)
- Murray**, Adam, interim dean, University Libraries. B.A., University of North Carolina-Wilmington; M.L.I.S., University of North Carolina-Greensboro. (2006)
- Muscio**, Jr., Oliver J., professor emeritus, chemistry. B.S., University of California-Berkeley; Ph.D., University of California-Los Angeles. (1976)
- Muuka**, Gerry N., associate dean, College of Business and Public Affairs; professor, management. B.B.A., Copperbelt University; M.B.A., Murray State University; Ph.D., University of Edinburgh. (1994)
- Nakamura**, Suguru, associate professor, biology. M.D., Jiangxi Medical University, China; Ph.D., Tokyo Medical and Dental University. (2004)
- Navan**, Joy, associate professor, education. B.A., University of California; M.A., Middlebury College; Ph.D., University of Ottawa. (1998)
- Neelon**, Ann, professor, English. B.A., Holy Cross College; M.F.A., University of Massachusetts. (1992)
- Nichols**, George V., professor, occupational safety and health. B.S., University of Arkansas-Monticello; M.Ed., Ed.D., Texas A&M University. (1969)
- Niffenegger**, Phillip B., professor emeritus, marketing. B.B.A., M.B.A., University of Michigan; Ph.D., University of South Carolina. (1975)
- Osborne**, Jeffrey, assistant professor, English; B.A., M.A., Radford University; Ph.D., University of Kentucky. (2004)
- Owen**, David A., professor, chemistry. B.S., University of Illinois; Ph.D., University of California-Riverside. (1978)
- Owens**, Debbie A., associate professor, journalism and mass communications. B.A., University of New York-Brooklyn College; M.S., University of Illinois; Ph.D., University of Florida. (2002)
- Pallone**, Arthur K., assistant professor, physics and engineering. B.S., University of Michigan; M.S., Indiana University of Pennsylvania; Ph.D., Colorado School of Mines. (2003)
- Palmer**, William J., assistant professor, engineering technology. B.A., Elmhurst College; M.S., Southern Illinois University-Carbondale. (1990)
- Payne**, Pearl A., interim chair, Department of Wellness and Therapeutic Sciences professor, communications disorders. B.S., M.S., Murray State University; Ph.D., University of Tennessee-Knoxville. (2003)
- Payne**, William F., professor, agriculture. B.S., University of Illinois; M.S., Southern Illinois University; Ph.D., Oregon State University. (1976)
- Pearson**, Kelly J., associate professor, mathematics. B.S., California State University-Bakersfield; M.S., Utah State University; Ph.D., University of Oregon. (2000)
- Perlow**, Michael B., chair, Department of Nursing; professor, nursing. B.S., Purdue University; B.S.N., Eastern Kentucky University; M.S.N., University of Evansville; D.N.S., Indiana University. (1984)
- Pervine**, Robert H., associate dean, College of Science, Engineering and Technology; professor, mathematics. B.S., Purdue University; M.S. Western Kentucky University; Ph.D., University of Kentucky. (1985)
- Pilgrim**, Robert A., assistant professor, computer science. B.A., Murray State University; M.S., Ph.D., University of Alabama-Huntsville. (1990)
- Pittman**, Louis L., head veterinary pathologist, Breathitt Veterinary Center; lecturer, veterinary sciences. B.S., Auburn University; D.V.M., Auburn University. (1994)
- Pittman-Munke**, Margaret T., associate professor, social work. B.A., Hollins College; M.L.S., University of Texas-Austin; M.Ed., M.S.W., Our Lady of the Lake University; Ph.D., University of Texas-Austin. (2002)
- Porter**, John E., associate professor, mathematics. B.S., Jacksonville State University; M.S., University of Wisconsin-Milwaukee; Ph.D., Auburn University. (2001)
- Purcell**, J. Kenneth, professor emeritus, health and physical education. B.S., M.S.T., Georgia Southern College, Ph.D., Florida State University. (1974)
- Raj**, Victor S., chair, Department of Computer Science and Information Systems; associate professor, computer information systems. B.Sc., M.Sc., Osmania University-India; M.S., Ph.D., University of Kentucky. (1990)
- Ratliff**, Judy, chair, Department of Chemistry; associate professor, chemistry. B.A., Berea College; M.A.Ed., Eastern Kentucky University; Ph.D., University of Kentucky. (1993)
- Rea**, Stephanie, associate professor, music. B.M., East Tennessee State University; M.M., D.M., Florida State University. (2002)
- Rice**, Pamela, associate professor, wellness and therapeutic sciences. B.S.E., University of Arkansas; M.A., University of Alabama-Birmingham; Ed.D., University of Arkansas. (1982)
- Richerson**, Ginny, chair, Department of Adolescent, Career and Special Education, professor, business education. B.S., M.S., Ph.D., Southern Illinois University-Carbondale. (1985)
- Ritter**, Alysia D., professor, psychology. B.A., University of New Orleans; M.A., Ph.D., University of Houston. (1989)
- Roach**, David W., associate professor, mathematics. B.S., Dallas Baptist University; M.S., Ph.D., Vanderbilt University. (2000)
- Robertson**, Jo, chair, Department of Early Childhood and Elementary Education, associate professor, special education. B.S., University of Wyoming; M.S. Southwest Missouri State University; Ph.D., University of Missouri. (1998)
- Rogers**, James W., associate professor, physics and engineering. B.S.M.E., University of Evansville; M.S., Ph.D., University of Illinois. (2002)
- Rogers**, Kelly B., associate professor, outdoor recreation. B.S., M.S., Western Kentucky University; Ph.D., University of Idaho. (1998)
- Rose**, Jack D., professor, school administration. B.S., M.A.T., Murray State University; Ed.D., Indiana University. (1998)
- Rose**, Winfield H., professor, political science. B.A., Carson-Newman College; M.A., Ph.D., Duke University. (1979)
- Royalty**, Joel L., professor, psychology. B.A., M.A., University of Missouri-Columbia; M.A., Ph.D., University of Missouri-St. Louis. (1985)
- Rudolph**, Holly R., professor, accounting. B.S., M.B.A., Murray State University; D.B.A., Southern Illinois University; C.P.A. (1981)
- Rudolph**, James A., professor emeritus, agriculture. B.S., M.A.Ed., Murray State University; Ed.D., Oklahoma State University. (1973)
- Saar**, Dayle E., assistant professor, biology; B.S., Benedictine University; M.B.A., North Texas State University; M.S., Ph.D., Northern Illinois University. (2004)
- Saint Paul**, Therese, assistant professor, French. B.A., M.A., Universite de Liege, Belgium; Ph.D., University of Edinburgh, Scotland. (2000)
- Schell**, William Jr., professor, history. B.A., M.A., Ph.D., University of North Carolina-Chapel Hill. (1991)
- Schneiderman**, Steven S., associate professor, engineering technology. B.S., M.S., Ph.D., Southern Illinois University-Carbondale; P.E. (1989)
- Schoenfeldt**, Roger C., professor emeritus, marketing. B.B.A., Washburn University; M.B.A., Murray State University; Ph.D., University of Arkansas. (1968)
- Schrock**, Peggy E., professor, art. B.A., M.S., University of Missouri-Columbia; M.A., University of Missouri-Kansas City; Ph.D., University of Illinois, Urbana-Champaign. (1990)
- Scott**, Richard J., associate professor, music. B.M., University of the Pacific; M.M., University of Washington; D.M.A., University of Wisconsin-Madison. (1983)
- Seay**, Robert A., professor, accounting. B.S., M.B.A., Murray State University; D.B.A., Mississippi State University; C.P.A. (1985)
- Serre**, Camille, professor, art. B.F.A., University of Michigan; M.A., Eastern Michigan University; Ph.D., Purdue University. (1985)
- Shatzer**, Joyce R., assistant professor, education. B.S., Valparaiso University; M.S., Old Dominion University; Ed.D., University of Virginia. (2003)
- Sheets**, Brenda K., assistant professor, business administration; B.A., M.A., M.S., Murray State University, Ph.D., Vanderbilt University. (1998)
- Siebold**, Bert A., professor, industrial education. B.S., SUNY-Oswego; M.S., Western Kentucky University; Ph.D., Ohio State University. (1982)
- Singh**, Meenu, associate professor, computer information systems. B.E., Ragoon Institute of Technology; M.S., Western Illinois University; Ph.D., University of Kentucky. (2003)
- Singh**, Shri N., head, veterinarian microbiology department, Breathitt Veterinary Center; professor, microbiology. D.V.M., U.P. Agricultural University; Ph.D., U.P. Agricultural University. (1989)
- Smetana**, Zbynek, associate professor. M.A., Ph.D., Rutgers University. (1998)

Graduate Faculty

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- Steffa**, John, professor, music. B.A., M.M., University of Northern Iowa; D.M.A., University of Texas-Austin. (1988)
- Stone**, Staci, chair, Department of English and Philosophy; associate professor, English. B.A., University of Alabama; M.A., Ph.D., University of South Carolina. (2000)
- Strieter**, Terry W., chair, Department of History; professor, history. B.A., M.A., California State University-Long Beach; Ph.D., University of California-Santa Barbara. (1977)
- Sutrick**, Kenneth H., associate professor, computer information systems. B.A., University of Wisconsin-Madison; Ph.D., University of California-Berkeley. (1984)
- Thiede**, Theodore D., interim chair and graduate coordinator, Department of Engineering and Physics; associate professor, physics and engineering. B.S., U.S. Naval Academy; M.S.E., Purdue University; Ph.D., Iowa State University. (1996)
- Thome**, Edward L., associate professor, mathematics. B.S., M.S., Ph.D., Kansas State University. (1991)
- Tilson**, Lou D., professor, organizational communication. B.S., Glenville State College; M.A., West Virginia University; Ph.D., Ohio University. (1992)
- Timmons**, Tom J., chair, professor, biology. B.S., Iowa State University; M.S., Tennessee Technological University; Ph.D., Auburn University. (1982)
- Todd**, Timothy S., dean, College of Business and Public Affairs; professor, organizational communication. B.A. and M.A., Western Kentucky University; Ed.D., North Carolina State University. (1995)
- Trites**, Latricia, associate professor, English (TESOL). B.A., M.A., Texas Tech University; Ph.D., Northern Arizona University. (2000)
- Umar**, Farouk F., chair, Department of Government, Law and International Affairs; professor, political science. B.S., M.A., Ph.D., Southern Illinois University. (1970)
- Umstead**, Eric, assistant professor, special education. B.S., Murray State University; M.Ed., Tennessee State University; M.Ed., Vanderbilt University; Ed.D., Tennessee State University. (2000)
- Volp**, Robert F., associate professor, chemistry. B.S., University of Wisconsin-Stevens Point; Ph.D., University of Wisconsin-Madison. (1983)
- Waag**, C. Michael, professor, Spanish. B.A., University of Arizona; M.A., Ph.D., University of Illinois. (1986)
- Waddill**, Paula J., professor, psychology. B.S., Oklahoma State University; M.S., University of Tennessee; Ph.D., Purdue University. (1994)
- Wall**, Celia J., associate professor, journalism and mass communications. B.A., M.A., Murray State University; M.S., University of Illinois; Ph.D., University of Kentucky. (1980)
- Wall**, Russell, dean, College of Education; assistant professor, education. B.A., M.S., Ed.D., University of Kentucky. (1996)
- Wann**, Daniel L., professor, psychology. B.S., Baker University; M.S., Emporia State University; Ph.D., University of Kansas. (1991)
- Wattier**, Mark J., professor, political science. B.A., Baylor University; M.A., Ph.D., University of Tennessee. (1980)
- Weatherly**, James G., associate professor, engineering technology. B.S.E.E., M.S.E.E., University of Tennessee. (1975)
- Weis**, Roger M., professor, campus director, American Humanics Center for Leadership in Community Service. B.A., M.A., Marshall University; Ed.D., University of Kentucky. (1989)
- Wesler**, Kit W., professor, anthropology. B.A., Washington University-St. Louis; M.A., Ph.D., University of North Carolina-Chapel Hill. (1981)
- Whitaker**, Harry K., head, virology department, Breathitt Veterinary Center; associate professor, veterinary virology. B.S., Florence State University; Ph.D., Auburn University. (1978)
- Whitaker**, William J., professor emeritus, engineering technology. B.S., Lawrence Institute of Technology; M.S.C.E., Wayne State University; P.E. (1975)
- White**, David S., director, Hancock Biological Station, professor, biology. A.B., M.A., DePauw University; Ph.D., University of Louisville. (1988)
- White**, H. Allen, professor, journalism and mass communications. B.A., M.S., Murray State University; Ph.D., University of Tennessee. (1991)
- White**, Stephen B., associate professor, biology. B.S., West Virginia University; M.S., Colorado State University; Ph.D., Ohio State University. (1981)
- Whiteman**, Howard H., professor, biology. B.S., Allegheny College; Ph.D., Purdue University. (1996)
- Williams**, Patrick N., associate professor, agriculture. B.S., California Polytechnic State University, M.S., Kansas State University, Ph.D., Texas A & M University. (2001)
- Wilson**, Brenda C., associate professor, computer science. B.S., Harding University; M.A., University of Texas-Austin; Ph.D., Southern Illinois University-Carbondale. (1995)
- Wortham**, Tracey M., associate professor, occupational safety and health; B.S., M.S., Pennsylvania State University; Ph.D., Texas Tech University. (1995)
- Wright**, Sterling N., associate professor, biology. B.S., M.S., Texas Tech University; Ph.D., University of Texas. (1998)
- Wurgler**, Pamela S., chair, Department of Music; coordinator of music education, associate professor, music. B.M.E., Baylor University; M.M., University of Cincinnati College-Conservatory of Music; Ph.D., Ohio State University. (1994)
- Yarali**, Abdulrahman, assistant professor, telecommunications systems management; B.S., University of Florida; M.S., George Washington University; Ph.D., Virginia Polytechnic Institute and State University. (2003)
- Yayenie**, Omer, assistant professor, mathematics; B.S., M.S., Addis Ababa University, Ethiopia; Ph.D., Temple University. (2003)
- Zaporozhetz**, Laurene, professor, library science; B.A., Michigan State University; M.S., Western Michigan University; Ph.D., University of Oregon. (2004)
- Zhang**, Qiaofeng, assistant professor, geosciences. B.S., Nanjing University; M.S., Chinese Academy of Sciences; Ph.D., University of Western Ontario. (2002)
- Zhang**, Tan, associate professor, mathematics. B.S., University of Wisconsin-Madison; M.S., Utah State University; Ph.D., University of Oregon. (2000)
- Zimmerer**, Edmund J., professor, biology. B.S., Moravian College; M.S., Ph.D., Rutgers University. (1989)
- Zirbel**, Jay H., associate professor, industrial education. B.S., M.S., University of Wisconsin-Stout; Ph.D., Texas A&M University. (1991)

Course Descriptions



Course Descriptions

All of the courses herein are offered by Murray State University for undergraduate and/or graduate credit. The university reserves the right to make any adjustments in the *Bulletin* which are deemed necessary. The subject-matter areas and course prefixes are shown below and appear in that order on the following pages. **Courses numbered 500 and above are graduate-level courses. Students desiring graduate credit for a graduate-level course must be admitted to graduate status before enrolling in the course.**

ACC	Accounting	INT	International Studies
ADE	Adult Education	ITD	Industrial Technology and Design
ADM	Administration and Supervision	JMC	Journalism and Mass Communications
AED	Agricultural Education	JPN	Japanese
AGR	Agriculture	LIB	Library Science
ANT	Anthropology	LST	Legal Studies
ARC	Archaeology	MAT	Mathematics
ART	Art	MGT	Management
AST	Astronomy	MID	Middle School Education
BED	Business Education	MKT	Marketing
BIO	Biology	MLA	Modern Languages
BPA	Business and Public Affairs	MUS	Music
CDI	Communication Disorders	NTN	Nutrition
CET	Civil/Construction Engineering Technology	NUR	Nursing
CHE	Chemistry	OSH	Occupational Safety and Health
CIS	Computer Information Systems	PHE	Physical Education
COM	Communication	PHI	Philosophy
CRJ	Criminal Justice	PHY	Physics
CSC	Computer Science	PLN	Planning, Urban and Regional
CSP	College Student Personnel	POL	Political Science
CTE	Career and Technical Education	PSY	Psychology
ECO	Economics	REA	Reading
EDP	Educational Psychology	REC	Recreation
EDU	Education	RGS	Religious Studies
EGR	Engineering	SEC	Secondary Education
ELE	Early Elementary Education	SED	Special Education
ENG	English	SOC	Sociology
ETE	Electrical Telecommunications Engineering	SPA	Spanish
EXS	Exercise Science	SWK	Social Work
FCS	Family and Consumer Studies	THD	Theatre and Dance
FIN	Finance	TSL	Teaching English to Speakers of Other Languages
FRE	French	TSM	Telecommunications Systems Management
GCM	Graphic Communications Management	TTE	Technology Teacher Education
GER	German	WSC	Water Science
GSC	Geosciences	YNL	Youth and Nonprofit Leadership
GTY	Gerontology		
GUI	Guidance		
HCA	Health Care Administration		
HEA	Health		
HIS	History		
IET	Industrial and Engineering Technology		

**ACCOUNTING
(ACC)**

ACC 500 Advanced Accounting (3). A comprehensive examination of some of the most complex accounting problems including consolidated financial statements, partnerships, foreign subsidiaries, estates and trusts, and consignment and installment sales. Prerequisite: ACC 301.

ACC 501 Accounting for Governmental and Nonprofit Entities (3). Accounting and reporting principles, standards and procedures applicable to (1) state and local governments, including counties, cities, townships and villages; (2) the federal government; and (3) other not-for-profit institutions such as universities and hospitals. Prerequisite: ACC 200, ACC 201 and ACC 202 with minimum grades of C in each course, or ACC 490 with a minimum grade of C.

ACC 502 Advanced Income Tax (3). Continued study of the Internal Revenue Code and Regulations with emphasis on the advanced aspects of income; deductions, exclusions and credits, especially as they are related to the tax issues of individuals, corporations, and partnerships. Prerequisite: ACC 302.

ACC 503 Cost Management in the Global Economy (3). A decision-based approach to the study of selected cost management topics that enable managers to compete globally. Topics include strategic cost management, activity-based management, the balance scorecard, quality cost management, capital investment decisions, and inventory management. A business simulation requires the application of cost management information in product costing, planning, control, performance evaluation, and decision making. Prerequisites: ACC 303.

ACC 506 Principles of Auditing and Assurance Services (3). An introduction to internal and external auditing and audit-related services. The nature and purposes of audit, attestation, assurance and compilation services are studied. Other topics include: reporting, professional ethics, sampling, auditing for fraud, audit evidence, engagement planning, materiality and risk assessment, internal control, and operational audits. Prerequisites: ACC 301 and 308.

ACC 507 Professional Issues (1). Study of contemporary issues in accounting. Topics include professional certifications, emerging practices, career preparation, and professional development. Restricted to accounting area students. Graded pass/fail. Prerequisite: ACC 301.

ACC 509 Accounting Theory (3). Designed as a critical examination of relevant AICPA literature, especially accounting research bulletins, accounting principles board opinions and statements, and the financial accounting standards board statements. Contemporary developments are examined in the accounting literature and through reports. Prerequisite: ACC 301.

ACC 511 Survey of Accounting Principles for the Nonprofit Organization (3). Fundamentals of accounting procedures are discussed in detail. Concepts unique to accounting systems in non-

profit/volunteer organizations, such as types of funds and account groups are introduced. Budgeting, internal control and related tax issues are also discussed. Extra assignments will be required of graduate students.

ACC 586 International Experience in Accounting (3). A short-term study abroad program highlighting selected historical and modern contributions to accounting and business from another country and culture. Course will also meet weekly during the semester. Graded pass/fail. Graduate credit cannot be received for both ACC 586 and ACC 644. Prerequisite: consent of instructor.

ACC 595 Special Problems (3). Research by students in fields of special interests. Includes project research studies and intensive reading programs, accompanied by conferences with professors in fields involved. Prerequisite: consent of instructor.

ACC 602 Tax Planning and Research (3). The study of tax research methodology. Emphasis is placed on the sources of tax law and their relationship to tax research. Administrative tax procedures and principles of tax planning as related to tax research are explored and evaluated. Prerequisite: ACC 302 or equivalent.

ACC 604 Quantitative Financial Controls (3). An in-depth study of management accounting techniques and methods needed for effective management of business enterprises. The trade-offs management makes in acquiring and using accounting information for decision-making and control are discussed. Specific topics include cost behavior and estimation, short-term decision making, budgeting, performance evaluation, cost allocation, and product costing. Prerequisites: ACC 201 or ACC 490.

ACC 605 Corporate Governance and Accounting Ethics (3). Course involves a dual study of corporate governance and accounting ethics. The course focuses on corporate governance practices in general, with particular emphasis on: (1) the responsibilities of and relationships among a company's board of directors, management and shareholders; (2) corporate and capital structures; and (3) corporate changes. This course also involves a study of the legal and ethical environment of the accounting profession.

ACC 606 Auditing Theory and Practice (3). Emphasizes independent auditing services that CPAs provide. Engagement planning and documentation, internal control, evidence accumulation for major categories of processes and accounts, reporting, statistical sampling, and audits of computer-based systems are the major topics. Prerequisite: ACC 506 or equivalent.

ACC 608 Accounting Information Technologies (3). Course emphasizes advanced coverage of accounting information systems topics, provides real-world simulation of the use of data extraction and analysis technology for assurance services and fraud detection, and requires individual research projects that result in formal papers and presentations. A significant component of this

course includes skill development in the use of CAATs (Computer Assisted Audit Tools and Techniques). Prerequisite: ACC 308 and ACC 506 or equivalent.

ACC 609 Issues in Corporate Financial Reporting (3). An examination of corporate financial reporting issues including the application of accounting techniques and theory under generally accepted accounting principles (GAAP) to financial reports of large companies. In addition to covering traditional financial reporting issues, the course also emphasizes financial reporting issues related to initial public offerings, mergers and acquisitions, environmental contingencies, international accounting standards, and other contemporary topics. Prerequisite: ACC 300 and ACC 301.

ACC 644 Graduate Cooperative Education (3). May be repeated to a maximum of six credits. Cannot be used to meet M.B.A., M.P.A. or M.S. degree requirements. Graded pass/fail. Prerequisite: permission of chair.

ACC 695 Special Problems (3). Entails research by graduate students in fields of special interests. Includes specialized research projects and intensive reading assignments that are accompanied by conferences with professors in the fields involved. Prerequisites: 12 hours of graduate credit in business and consent of instructor. May be repeated for a total of 6 credit hours.

**ADULT EDUCATION
(ADE)**

ADE 550 Adult-Community Education in a Changing Society (3). Study of the concept of community education and the fast-developing and emergent field of adult education as they relate to designing and implementing a program of total and lifelong education for the community.

ADE 551 Creative Adult Learning (3). An analysis of the adult as a learner. The process of aging, its implications for learning occupations, effect on families, and social views are considered. Actualizing conditions for relationships between personal developments and a free society.

ADE 555 Foundations of Adult and Community Education (3). Provides a historical understanding of adult and community education and how these two concepts evolved in modern twentieth century education theory, with particular emphasis on related aspects of progressive education as first envisioned and as revised and refined in recent years.

ADE 599 Workshop in Adult Education (1-3). This course covers workshops conducted for certified teachers who additionally work with adults in evening adult education classes. Accumulated credits are not allowed to exceed six credit hours.

ADE 652 Education for Disadvantaged Adults (3). The motivation, experiences and uniqueness of adult basic education students are considered. Practical and theoretical bases for creative learning programs are stressed.

Adult Education (ADE)

ADE 653 Adult Program Curriculum Development (3). Designed to help teachers and administrators select and develop appropriate adult programs that meet the needs of the adult learner. Appropriate methods and materials needed to support specified adult programs will be examined and/or developed.

ADE 655 The Community Education Center (3). An examination of models of community education based on relationships of community education to the K-12 curriculum in schools and to other agencies within a community.

ADE 668 Practicum in Adult Education (3). Closely supervised instruction in an adult learning center and in adult evening classes. Practicum consists of helping adults learn through a systematic approach of individualized instruction.

ADE 669 Practicum in Adult Education Administration (3). Closely supervised instruction in adult education program to include visitation to class sites, evaluation committee meetings, and attendance at teacher and paraprofessional pre-service and in-service training sessions.

ADMINISTRATION AND SUPERVISION (ADM)

ADM 600 Introduction to Educational Leadership (3). This introductory course examines the theoretical concepts and organizational patterns of governance and management of schools within the social and philosophical structure of our culture. Field research project required. Note: Recommended initial course in school administration.

ADM 624 School and Community Relations (3). A study of the local community and its relationship to the school program, an analysis of proven communication processes and principles and their use in two-way communication strategies to strengthen the school's resources. Field research project required.

ADM 627 School Law and Finance for Teachers (3). Designed for the classroom teacher. A study of the laws and finance pertaining to teachers as they work with students, administrators, colleagues and community interest groups. (Same as EDU 627.)

ADM 630 Methods of Research (3). A study of procedures used to locate sources of information, organize and interpret collected data, and apply results of published research. Various research methods are studied and used.

ADM 644 Survey of Research in Effective Schools (3). A survey of research in the school as it pertains to effective teaching, learning and leadership. The components covered will include (but not be limited to) the following areas: accountability, curriculum, expectations-goals, leadership, monitoring student feedback and organization.

ADM 645 Educational Resources Management (3). A survey of resources available to a public institution to support the mission of the institution and related programs. This is a general overview of public finance, site-based budgeting techniques,

linking of resources to programs based on data and accountability. Identification and reallocation of resources will be tied to the learning mission of the unit. Resources other than financial will be included and special emphasis will be given to human resources including personnel and site-based councils.

ADM 650 Clinical Supervision (3). A study of clinical supervision principles and practices for the aspiring supervisor or principal. Topics include the nature and functions of supervision, strategies for use in supervision and the coaching nature of supervision as well as skills in observing and analyzing along with in-service programs and staff development. Field research project required.

ADM 655 Curriculum and Program Development (3). A study of the supervisory functions dealing with curricular and program evaluation and analysis and techniques for bringing about program and curricular change and improvement within the local school system. Field research project required.

ADM 657 Educational Policy and Ethics (3). Provides a historical overview for the science of institutional policy development in the United States. The relevance, overlap, and interplay of educational policy and ethics at the local, state, and national levels will be explored.

ADM 663 School Law (3). A study of the legal aspects of education. Critical legal content from constitutional law, court decisions, state statutes, state administrative regulations, attorney general opinions, and local school district policies will be covered. Note: Course may be taken as an elective by a person not pursuing an administrative certificate.

ADM 664 School Principal (3). A study of modern administrative theories, processes and techniques applicable to the school, grades P-12. The emphasis is on the principal's role as the instructional leader engaged in needs assessment, collection and use of data, formulation of educational goals, design and implementation of improvement strategies. Field research project required.

ADM 667 Pupil Personnel Accounting (3). The specific procedures in pupil accounting which are the responsibility of the director of pupil personnel. A study of systematized records management including some attention to machine data processing. Field research project required.

ADM 668 Practicum/Seminar in Educational Leadership (3). Managed field practicum experience where the student works with a building principal to develop depth of experience in areas of responsibility such as scheduling, professional development, school improvement planning, etc. At intervals, students will be convened to share and gain a broader perspective on their experiences. This course is recommended to be taken last, but may be in the last nine hours.

ADM 669 Seminar in School Administration (3). For advanced graduate students in school administration. Deals with current problems and issues and stresses independent investigation.

ADM 670 Topics in Educational Technology (3). Critical aspects of the management and administration of educational technology will be addressed. Topics covered may include administration and instruction, school and classroom management, networking, distance learning, statistical reporting, pupil scheduling, information retrieval systems, and technology policy issues.

ADM 674 Directed Study in School Administration (3). Designed for advanced graduate students who want to do in-depth research on special problems. Requires advanced study and analysis of literature and preparation of substantial research documents. May be repeated once for credit.

ADM 675 Introduction to Alternative Education Settings (3). Course serves as an overview to effective teaching and administrative practice in the alternative education settings. Students enrolled in the course must maintain a portfolio of course assignments and documentation of field experiences for evaluation for university credit. Field hours are required.

ADM 677 Crisis Management in Educational Settings (3). The content of this course provides educators with the skills and information to analyze safety data, plan for both school safety interventions and procedures and to manage crises in an educational setting. Field hours are required.

ADM 690 Roles & Functions of the Central Office (3). An in-depth study of the coordination and oversight of the following central office functions: state/federal grant resources, state/ federal assessment programs, district technology, and state/federal personnel reporting. Transportation, food service, and facilities maintenance will be addressed more generally. The roles of the instructional supervisor, Director of Pupil Personnel, District Assessment Coordinator, Director of Special Education and other central office support positions will be emphasized. Prerequisite: admission to graduate program.

ADM 720 Advanced School Personnel Evaluation (3). A study and application of appropriate techniques used to evaluate the act of teaching. All ethical and legal aspects along with a sustained articulation methods, personnel records, and necessary personal skills will be covered. Study will exceed state and local evaluation systems and requirements.

ADM 723 Advanced School Program Evaluation (3). A study and application of appropriate techniques used to evaluate methods, programs, and strategies used in public elementary and secondary education. All legal and ethical aspects along with an accurate assessment of the results of school programs will be covered. Study will include the relationship of goals, objectives, and activities related to the learning outcomes. Extensive data will be collected, organized, analyzed and presented as a measurement of program effectiveness.

ADM 725 Advanced Methods of Quantitative Research in Education (3). A study of quantitative research methods and statistics used in

educational studies. Preparation for quantitative research and conducting an abbreviated inquiry, collecting and analyzing data as well as improving professional writing skills are the focus of this class. Prerequisite: ADM 630 or comparable research course.

ADM 730 Advanced Educational Research (3). The knowledge and skill necessary to conduct educational research at an advanced level. Preparation to conduct research at the doctoral level is emphasized.

ADM 739 The School Superintendency (3). The role of the school district superintendent is analyzed with reference to job responsibilities of the position, knowledge, skills and dispositions necessary to serve successfully in the position are examined.

ADM 749 School District Administration (3). This performance-based course focuses on school system operations including financial management and policy, administration of auxiliary services, human resources planning and management, federal and state programs, facilities planning and management and curriculum and instructional support. The emphasis throughout the course will be on the skills needed to perform the functions of the superintendent and the underlying policy development and implications.

ADM 759 Strategic Planning in Education (3). An examination of planning processes used by leaders to direct educational change and improvement. Includes strategic planning approaches designed to address macro and micro goals of organizations.

ADM 779 The Superintendency Practicum (1-3). An analysis of the role of the school district superintendent in practice with emphasis on changes in society and schools as well as with reference to job responsibilities of the position. Students enrolling in the practicum are expected to spend time interacting with practicing school administrators at school district locations. (Student will be required to take a total of three hours credit.)

ADM 798 Specialty Study (3). This course is designed to enable the student, with the supervision of his/her graduate faculty committee, to select a problem directly related to the student's area of concentration, survey the research literature, collect and analyze research data and prepare the research paper.

ADM 799 Specialty Study (3). Continuation of ADM 798.

AGRICULTURAL EDUCATION (AED)

AED 580 Methods in Teaching Agricultural Education (3-6). Philosophy and objectives of teaching agricultural education in a comprehensive program. Course concepts include preparing and delivering lesson plans that involve problem-solving method, lecturing, and laboratory based modules. Additional methods include instruction in supervising occupational experience programs

and coordinating FFA programs. Learning theory, multicultural education and education of the exceptional child are also included. Field and clinical experiences are also employed. May be repeated for a maximum of six hours credit. Prerequisite: AED 380.

AED 581 Instructing Out-of-School Groups (3). Philosophy of vocational education for out-of-school youth and adults in agricultural occupations. Application of principles and techniques for organizing, conducting and evaluating instructional programs. Field-clinical experiences. (Spring)

AED 582 Supervision in Agricultural Education (3). Application of principles and techniques of supervising individuals and groups in the field of agricultural education. (With sufficient demand)

AED 583 Practicum in Agricultural Education, Extension and Public Service Leadership (1-3). Individual problems in areas of special interest in the field of agricultural education. May be repeated up to six hours. (Fall, Spring or Summer)

AED 680 Research in Agricultural Education (3). Advanced individual problems of special interest in the field of agricultural education. May be repeated once for a maximum of six hours. (Fall, Spring or Summer)

AED 681 Supervising Student Teachers in Agricultural Education (3). Competencies needed by the local supervising teacher to develop effective techniques of working with student teachers in agricultural education. Orientation, communication, supervising and evaluating student teachers. (With sufficient demand)

AED 682 Determining Course Content in Agricultural Education (3). Developing and using four-year course of study for high school students in agricultural education. Includes gathering and interpreting local data as a basis for course building. (With sufficient demand)

AED 683 Instructional Material in Agricultural Education (3). Selecting, procuring, developing and using instructional materials in the field of agricultural education. (With sufficient demand)

AED 684 Beginning Teacher Workshop (1-2). Problems of beginning teachers of agriculture relevant to planning, developing, implementing and evaluating local instructional programs. May be repeated for a total of three credits. (Fall)

AED 685 Advanced Instruction for Out-of-School Groups (3). Gathering and interpreting local data as a basis for program planning and course building for out-of-school youth and adults. Organizing and conducting classes. (With sufficient demand)

AED 686 Administration and Supervision in Agricultural Education (3). Principles of administration and supervision. Organizational structure of the various levels, including the state plan. Primarily for agriculture teachers, supervisors, counselors and school administrators. (With sufficient demand)

AED 687 Teaching Agricultural Mechanics (3). Role of agricultural mechanics in the vocational agriculture curriculum. Course building, selecting, procuring, developing and using instructional aids in teaching agricultural mechanics with emphasis on demonstrating use of such materials. Building and equipment needs. (With sufficient demand)

AED 688 Modern Problems in Agricultural Education (3). Classwork, not individual problem work, on modern problems in the field of agricultural education common to the group of students enrolled. May be repeated for a maximum of six credits. (With sufficient demand)

AGRICULTURE (AGR)

AGR 501 Diseases of Livestock (3). Distribution, general nature, methods of dissemination, sanitation, prevention and eradication of common infectious and parasitic diseases of domestic animals; hygiene and preventive medicine, with emphasis on the transmissible diseases. (Fall)

AGR 502 Advanced Nutrition (3). A study of physical and chemical properties of feeds. Digestion, absorption and metabolism of nutrients and factors affecting these functions are emphasized. The nutrient requirements of farm animals and effects of nutrient deficiencies are also studied. (Fall)

AGR 503 Animal Breeding (3). Study of hereditary traits in livestock, breeding designs, progeny testing and herd analysis. (Spring)

AGR 506 Reproductive Physiology (3). A study of the reproductive processes in mammals with primary emphasis on domestic farm animals. Will include the anatomy, endocrinology, behavior and general physiology of the reproductive processes. Artificial insemination, estrous control, ova transplants and other practical production practices will be covered. Lecture, two hours; laboratory, two hours. (Fall)

AGR 510 Animal Anatomy and Physiology (3). Deals with the anatomy of body systems, how these systems interrelate, and the physiology of body organs. Species covered include porcine, bovine, equine, canine and feline. Three one-hour lectures per week. Prerequisite: AGR 310. (Spring)

AGR 511 Animal Anatomy and Physiology Laboratory (2). Deals with the anatomy of body systems, how these systems interrelate, and the physiology of body organs. Species covered include porcine, bovine, equine, canine and feline. Two hour laboratories twice per week. Prerequisite: AGR 310. (Spring)

AGR 512 Beef Cattle Management Systems (3). A study of beef production, forage management and marketing systems. Lecture, one hour; laboratory, four hours. Prerequisites: AGR 100 and 311. (Fall)

AGR 514 Teaching Students Horsemanship (3). Designed for students interested in teaching techniques of teaching horsemanship. Course includes preparation and application of lesson plans. Prerequisite: AGR 304 or 306. (Fall)

Agriculture (AGR)

AGR 523 Artificial Insemination Techniques for Cattle (3). Designed to train students to become competent A.I. technicians. Topics discussed will include reproductive processes, health, nutrition, facilities and management of breeding herd. Techniques concerning semen handling, heat synchronization and heat detection will be taught. Laboratories will be designed to give students actual experience in inseminating cattle. Prerequisites: AGR 100 and AGR 311 or consent of instructor. (Summer, with sufficient demand)

AGR 530 Advanced Agricultural Prices (3). Methods of price analysis and forecasting. Index numbers, time series data commodity flows and statistical techniques as applied to price analysis. Special emphasis will be placed upon the use of commodity futures markets in estimating cash prices and in protecting producers from cash price fluctuations. (Fall, even years)

AGR 531 Agricultural Finance (3). A study of the needs and problems of financing farm and farm service businesses, including a study of credit institutions serving American agriculture. (Fall)

AGR 532 Farm and Land Appraisal (3). A study of the methods and procedures of land and farm property valuation with attention to appraisal programs of the credit and farm service institutions. Prerequisite: AGR 130. (Fall)

AGR 533 Seminar in International Agriculture Systems (3). A course designed to enhance student's understanding of international agriculture systems and how they relate to the overall impact on world food processing and production. An emphasis is placed on systems which have the potential to impact and add-value to American agriculture, as well as those which hold key relationships to U.S. based agricultural trade and food development.

AGR 534 Types and Systems of Farming and Agribusiness (3). Includes a general statistical analysis of U.S. agriculture with attention to major agricultural regions of the nation and types of farming areas of Kentucky. Special emphasis is given to the organization of West Kentucky and regional farms and agribusinesses. Field trips, interviews and financial analysis of successful firms. (Summer, with sufficient demand)

AGR 535 Agricultural Policy (3). The history, principles, setting objectives and means of policy as applied to agriculture in our society. Prerequisite: AGR 336. (Spring)

AGR 536 Quantitative Methods for Agribusiness (3). A study of the use and theory of mathematics as it applies to the fields of agriculture, finance and economics. Attention is given to the elementary uses of algebra, matrix algebra and the calculus as they apply to optimization problems in resource use efficiency. The same mathematics will be applied to time value of money topics. Prerequisites: ECO 230, 231 and MAT 140. (Spring, odd years) Must be admitted to graduate studies prior to registering for this course to receive graduate credit.

AGR 537 Seminar in Agricultural Business Systems (2). Course designed to enhance student's understanding of, and experience in, agricultural business systems. Emphasis will be placed on strategies of managing a successful agribusiness operation and/or farmer-owned cooperatives. Prerequisite: AGR 130. Must be admitted to graduate studies prior to registering for this course to receive graduate credit.

AGR 538 Seminar in Production Agricultural Systems (2). Designed to enhance student's understanding of, and experience in, production agriculture systems and how they relate to a successful farming operation. An emphasis is placed on systems, which have the potential to impact and add-value to the local, regional and national agriculture economy, through classroom as well as laboratory experiences. Must be admitted to graduate studies prior to registering for this course to receive graduate credit.

AGR 539 Advanced Computer Applications for Agriculture (3). An intensive course designed to enhance the computer skills of agriculture students and to give them the skills necessary to generate useful information and solve a variety of agriculturally specific problems. Students receive instruction on advanced word processing concepts, budget generation, statistical analysis, agribusiness related software and global positioning systems in agriculture. Prerequisite: AGR 339.

AGR 540 Veterinary Surgery and Anesthesia (4). Clinical principles, practices and procedures involved in the field of veterinary medicine. For animal health technology students with senior standing. Prerequisites: AGR 310, 322, 329, and 332. (Fall and Spring)

AGR 542 Plant Breeding I (3). Basic principles and methods used in the improvement of important agronomic and horticultural crops. (Fall, even years)

AGR 546 Integrated Pest Management (3). Principles of plant pest control as related to developmental stages of crop plants. Evaluation of pest problems, alternative control methods and effects on the ecosystem. Emphasis on economic control of insect and disease vectors that affect agricultural crops. (Spring, even years)

AGR 547 Crop Management (3). Study of the distribution, economic importance and management of forage, grain crops and tobacco. (Fall)

AGR 548 Crop Physiology (3). Basic principles of crop physiology; the effect of environment and management practice on physiological processes, growth and development of crops. (Spring, odd years)

AGR 549 Weeds and Their Control (3). A study of the introduction, methods of dissemination, reproduction and control of weeds by the most reliable methods and techniques. Prerequisite: AGR 160 or 240. (Fall)

AGR 550 Applied Pharmacology (3). Advanced clinical principles, practices and procedures in

the field of veterinary medicine. Prerequisites: CHE 105 and 106, or CHE 201 and 202. (Fall and Spring)

AGR 551 Selected Studies in Agriculture (1-3). An intensive study of an agriculture topic that will vary from semester to semester. May be repeated to a maximum of six hours. (With sufficient demand)

AGR 554 Soil and Plant Analysis (3). A study of the chemical and analytical procedures used on soils and plants along with instruction and theory of the use of common analytical equipment. Lecture, one hour; laboratory, four hours. Prerequisite: AGR 250. (Fall)

AGR 555 Advanced Soil Fertility (3). The chemistry of the essential elements in soils and the use and the manufacturing processes of various fertilizer materials are considered. Prerequisite: AGR 250. (Spring)

AGR 563 Arboriculture (3). Classification, identification and care of ornamental trees, shrubs and vines, including pruning, bracing, surgery, transplanting, insect and disease control, and fertilization, as related to large areas of organized plantings. Lecture, two hours; laboratory, two hours. (Spring, odd years)

AGR 566 Advanced Greenhouse Management and Production (3). A study of the principles and practices used in the production of specific important greenhouse crops. Considerable emphasis will be placed on the manipulation of environmental conditions during production. (Fall, even years)

AGR 569 Plants for Interior Design (2). A study of the basic plants used for interior design and decoration. This study includes identification, nomenclature, growing requirements, insect and disease problems and proper use of these plants in interiors.

AGR 570 AG Systems Technology Lab Management (3). This course is a study of theories involving agricultural mechanization and systems technology. Emphasis is placed on understanding the technology involved in operating, maintaining and managing power and machinery, electricity, precision agriculture, soil and water engineering, metallurgy and fabrication, and safety systems. Skill development emphasized. (Fall Only) Prerequisite: AGR 170

AGR 571 Advanced Precision Agriculture (3). Designed for students who desire to apply and expand knowledge of the acquisition and analysis of geographically referenced data for the management of crop production systems, data formats, geographic information systems, grid sampling, soil fertility and physical properties, herbicide management, yield monitoring, variable-rate application, crop modeling and economics.

AGR 573 Agricultural Processing Systems (3). An analysis of systems and methods for harvesting, processing and storing agricultural products. Includes drying and curing principles, grinding, mixing, cleaning, sorting, material

handling and structural environmental design. (Fall, even years)

AGR 574 Agricultural Irrigation and Water Systems (3). Includes determining water needs, water sources, pumps, fundamental pipeline hydraulics and designing a complete irrigation and/or water system for the farm. (Spring, even years)

AGR 575 Combine and Grain Handling Systems (3). Developing a complete grain harvesting, handling, drying and storage operation. A study of combine operation and the materials flow concept, closed loop handling, psychrometrics, grain drying, drying methods, facility layout and facility management. Combine comparison, selection and utilization.

AGR 576 Agricultural Electrification Systems (3). Study of the basic principles of electricity, the fundamentals of wiring and selection, the operation and economics of agricultural electricity equipment. (Spring)

AGR 577 Tractor Power Principles (3). Study of the principles governing the selection and application of tractors and power driven machines. Emphasis is placed on operating systems of engines, including compression, ignition and carburetion. Mechanical principles of tractors and preventive maintenance included. (Fall, odd years)

AGR 578 Research and Development of Agriculture Tractors and Equipment (3). Tours of the major agriculture tractor and equipment industries. The tours include: research and development, engineering, foundries, and the assembly of engines, transmissions, final drives, combines, cotton pickers, and planting equipment. (Summer)

AGR 580 Veterinary Products (3). This course deals with old and new products currently available in the veterinary market. Market will include the ordering and purchasing of wholesale products, selling, inventory control, computer programming, marketing, and pricing of products utilized in a veterinary practice. (Fall)

AGR 582 Veterinary Practice and Operations (3). Course will deal with the day to day events centered around the operation of a veterinary practice. Supervisory skills, communication skills, inventory, bookkeeping, planning, and advertising are the main areas stressed in this course.

AGR 585 Specialized Journalism/RTV (1-3). Directed individual study. Can be a journalistic effort in areas such as science, sports, government, religion, graphics, etc., or a project in radio or television such as a major production or series, an extensive research project and paper, or other approved project. Prerequisites: consent of instructor and written approved proposal required prior to registration.

AGR 590 Internship in Animal Technology (3-6). Practical full-time work experience to be arranged through an animal-related facility during the fall, spring or summer session. Site to be arranged by the student and approved by the course

coordinator. May be repeated for a total of six credit hours. Prerequisites: AGR 100, 300, 331, 332, 340, 351 and 400. Enrollment only by consent of instructor. May be repeated for a maximum of six hours of credit. (Fall, Spring or Summer)

AGR 600 Research in Agriculture (1-3). May be repeated for a total of three hours credit with approval of the department chairman. An approved proposal signed by the faculty member supervising the project must be submitted prior to registration. Requires a minimum GPA of 3.0. (Fall, Spring, or Summer)

AGR 601 Forage Management System (3). An intensive study of forage production and management systems for livestock. (Fall)

AGR 605 Advanced Ration Formulation (3). An advanced study in formulating balanced diets to meet the requirements for lactation, growth and reproduction in livestock. Practice in formulating least-cost rations and designing feeding programs. Prerequisite: AGR 300. (Spring)

AGR 620 Agricultural Experimental Design and Analysis (3). An introduction to planning and designing agricultural experiments, stating the objectives, describing the experiment, outlining the statistical analysis, and interpreting quantitative results. Topics include random sampling, normal distribution, student's test, analysis of variance, mean separation, chi-square and simple regression analysis. (Fall)

AGR 622 Graduate Capstone Seminar (1). Reports concerning research projects, creative components, thesis defense, and/or work experience including student and/or faculty discussions. Graduate students must enroll in this course during the last semester of graduate enrollment. Prerequisite: admission to the agriculture graduate program.

AGR 633 Production Economics for Agriculture (3). The techniques and principles of production theory as applied to the organization and allocation of resources in agricultural production. (Spring)

AGR 635 Research Methodology (3). Selection, planning and conduct of investigation with reference to alternative scientific methods. Oriented toward all the disciplines of agriculture. Students present research problems coordinated with their advisor. (Fall)

AGR 639 Agribusiness Management (3). A study of the problems confronting agricultural marketing agencies and an application of alternative techniques of analyzing these problems; integration, new technology, selling, purchasing, warehousing, etc. (Summer, with sufficient demand)

AGR 644 Graduate Cooperative Education (3). May be repeated to a maximum of six credits. Graded pass/fail. Prerequisite: permission of chair.

AGR 645 Biotechnology and Agriculture (3). With the use of biotechnology, many new agricultural products are entering the market. This course is a descriptive study of biotechnology and its

use in the production of these new products. The class would include basic information about this technology, current capabilities, current limitations, and future prospects.

AGR 648 Weed Science (3). A study of specific problem weeds of the region, their growth habits, life cycles, competitive effects, and the mode of action of herbicides used in their control.

AGR 672 Advanced Metal Work (3). Application of the principles of arc, MIG, TIG and oxyacetylene welding in design. Primarily for vocational agricultural teachers. Application of the principles of electric and oxyacetylene welding in design and construction of agricultural projects. (Spring, odd years)

AGR 676 Advanced Agricultural Electrification (3). Troubleshooting and repair of electric motors and controls. Their utilization in handling and processing of agricultural products. Lecture, one hour; laboratory, four hours. (Fall, odd years)

AGR 677 Agricultural Power and Machinery (3). Analysis of agricultural machines, power units and equipment. Securing, adjusting and preventive maintenance in order to obtain maximum efficiency. Lecture, one hour; laboratory, four hours. (Fall, odd years)

AGR 698 Thesis (3).

AGR 699 Thesis (3).

ANTHROPOLOGY (ANT)

ANT 500 Directed Studies (1-3). Selected topics in anthropology as arranged by the student and a professor. May be repeated up to nine hours credit. Prerequisites: at least 12 hours of anthropology and permission of department chair.

ANT 596 The Minority Elderly (3). This course focuses on the minority elderly including racial, ethnic and lower income groups. Applicable concepts and theories in social gerontology will also be covered. Prerequisite: nine hours of anthropology, gerontology or sociology or consent of instructor. (Same as GTY 596.)

ARCHAEOLOGY (ARC)

ARC 500 Directed Studies (3). Selected topics in archaeology as arranged by the student and a professor. May be repeated for up to nine hours. Prerequisites: At least 12 hours of archaeology and permission of department chair.

ARC 501 History of Archaeological Thought (3). A historical overview of the history and development of archaeological thought from ancient times to the modern world. Prerequisites: ARC 300 or permission of the instructor.

ARC 505 Environmental Archaeology (4). The study of past human interactions with the natural world, including plants, animals, climate, and landscapes. Three hours lecture and two hours laboratory per week. Prerequisites: ARC/GSC 390, or permission of the instructor.

Archaeology (ARC)

ARC 510 Advanced Archaeological Field Work (1-5). Advanced field training in the strategy and tactics of archaeological survey and excavation. Intensive instruction in recovery and documentation of cultural remains and data from archaeological sites, the organization and logistics of archaeological field projects, and supervision of field crews. One or more weeks of continuous field work (generally equivalent to one credit hour per every 37.5 hour week in the field). Usually offered only during the summer session. May be repeated for up to five hours of credit. Prerequisite: ARC 402 or permission of instructor.

ARC 555 Archaeology of the Mid-South Region (3). An in depth study of prehistoric cultures of the Mid-South Region. Prerequisites: ARC 300, 330, 370, or permission of the instructor.

ARC 556 Remote Sensing Applications in Archaeology (3). Course provides an overview of aerial and terrestrial remote sensing techniques including applications of these methods to archaeological research. Emphasis will be placed on terrestrial geophysical survey methods with hands on training in the use of instruments such as ground penetrating radar and magnetic gradiometer. Weekend field trip to local archaeological sites are required. Prerequisites: ARC 300, GSC 202, GSC 512, or permission of instructor. (Same as GSC 556.)

ARC 604 Archaeological Laboratory Systems (1). Practical training in the organization and methods of archaeological laboratory procedures. Instruction in processing, cataloguing, preliminary analysis, preparation for curation/archival storage, and design of digital archives of cultural remains and records resulting from archaeological field work. Prerequisite: permission of the instructor.

ARC 605 Archaeological Information Systems (3). An exploration of the use of computer applications in archaeology, including data base design and management, electronic publication and digital archiving, use of internet resources, virtual archaeology, and predictive modeling with GIS and CAD mapping techniques. Prerequisites: ARC 150 and GSC 202, or equivalents, or permission of the instructor.

ARC 610 Landscape Archaeology (3). A survey of the concepts and methods of landscape archaeology, and its relationship with historical geography and historical ecology. The class will emphasize the investigation of cultural values embedded in landscapes and the ecological interactions of human societies and their environments as evident in the archaeological record. Prerequisites: ARC 360, 390, or permission of the instructor.

ART (ART)

Note: In 500-level studio and art history courses, students enrolled for graduate credit will be required to do additional work.

ART 501 Special Topics in Art History (3). Changing seminar topics to be determined by the

instructor and student interest. May be repeated up to nine credit hours. Prerequisite: ART 211 and 212, or permission of instructor.

ART 503 Drawing VIII (3). Concentrated exploration of drawing with emphasis on personal expression. Criticism and discussion. Six hours per week. Prerequisite: two drawing courses or permission of instructor.

ART 504 Drawing IX (3). Continuation of ART 503. Six hours per week. Prerequisite: ART 503 or permission of instructor.

ART 511 Metalsmithing VI (3). A concentrated exploration of the use of metals in jewelry-making and holloware. Six hours per week. Prerequisites: two courses in metalsmithing or permission of instructor.

ART 512 Metalsmithing VII (3). Continuation of ART 511. Six hours per week. Prerequisite: ART 511 or permission of instructor.

ART 513 Wood VI (3). Advanced problems in functional design. Students will design and build functional pieces of their choosing. Six hours per week. Prerequisites: two courses in functional design or permission of instructor.

ART 514 Wood VII (3). Advanced problems in functional design. Students will design and build functional pieces of their choosing. Six hours per week. Prerequisite: ART 513 or permission of instructor.

ART 515 Greek and Roman Art (3). Topics in the history of the art and architecture of ancient Greece and Rome through the late-Antique. Students enrolled for graduate credit will be required to do additional work. Prerequisite: ART 211 or permission of instructor.

ART 516 Medieval Art (3). Topics in the history of art from the Early Christian through the Gothic period. Students enrolled for graduate credit will be required to do additional work. Prerequisite: ART 211 or permission of instructor.

ART 518 Renaissance Art (3). History of the art of the Renaissance. Students enrolled for graduate credit will be required to do additional work. Prerequisite: ART 212 or permission of instructor.

ART 519 Baroque Art (3). History of the art of the Baroque period, mainly in Europe. Students enrolled for graduate credit will be required to do additional work. Prerequisite: ART 212 or permission of instructor.

ART 528 Nineteenth-Century Art (3). History of 19th Century Western art. Students enrolled for graduate credit will be required to do additional work. Prerequisite: ART 212 or permission of instructor.

ART 529 Art from 1900 to 1960 (3). History of Western art from 1900 to 1960. Students enrolled for graduate credit will be required to do additional work. Prerequisite: ART 212 or permission of instructor.

ART 530 Contemporary Art, 1960 to the Present (3). History of contemporary art from 1960 to the present. Students enrolled for graduate credit will be required to do additional work. Prerequisite: ART 212 or permission of instructor.

ART 533 Painting VI (3). Concentrated exploration of painting with emphasis on personal expression. Criticism and discussion. Six hours per week. Prerequisites: two painting courses or permission of instructor.

ART 534 Painting VII (3). Continuation of ART 533. Six hours per week. Prerequisite: ART 533.

ART 540 Foundations of Art Education (3). Survey of the fields contributing to art education. Includes human development, art supervision, teacher preparation, studies in philosophies of the aesthetic, history and criticism of both art and education. Reference is made to research methodology and to its relevance in education. Course may be taken by art education majors as an elective.

ART 544 Art Experiences for Elementary Teachers (3). Course for the in-service teacher or for elementary majors who desire a further involvement with art beyond that offered in ART 343. Course may be taken by art education majors as an elective. Six hours per week.

ART 545 Art Experiences for Secondary Teachers (3). Course for in-service teachers or secondary majors who wish to pursue studio practice and theory as they apply to the special needs of secondary school children. Course may be taken by art education majors as an elective. Six hours per week.

ART 551 Graphic Design VI (3). Additional refinement of graphic techniques, discussion and criticism. An emphasis on individual investigation concentrating on producing a unified body of work suitable for a portfolio or professional show. The student and the instructor will design a program of study directed toward this goal. Six hours per week. Prerequisite: ART 452.

ART 552 Graphic Design VII (3). Advanced specialization; continuation of ART 551.

ART 561 Sculpture VI (3). Selected problems involved in the sculpture process. Opportunity for directed individual study and studio work in a variety of three-dimensional media or processes. Emphasis on developing a cohesive, creative body of work. Studio and lecture. Six hours per week. Prerequisite: ART 462 or permission of instructor.

ART 562 Sculpture VII (3). A continuation of ART 561. Studio and lecture. Six hours per week. Prerequisite: ART 561 or permission of instructor.

ART 571 Ceramics VI (3). Concentrated exploration of selected ceramic processes with emphasis on personal expression. Six hours per week. Prerequisites: two courses in ceramics or permission of instructor.

ART 572 Ceramics VII (3). Continuation of ART 571. Six hours per week. Prerequisite: ART 571 or permission of instructor.

ART 580 Printmaking VI (3). Advanced problems. Concentrated study of selected printmaking processes with emphasis on personal expression. Individual direction and technical proficiency are emphasized. Criticism and discussion. Six hours per week. Prerequisites: two advanced courses in printmaking or permission of instructor.

ART 581 Printmaking VII (3). Advanced problems. Continuation of ART 580. Six hours per week. Prerequisite: ART 580 or permission of instructor.

ART 583 Photography VI (3). Concentrated exploration of individual problems, culminating in a unified body of work such as a book or portfolio. Individual expression, discussion and criticism. Six hours per week. Prerequisites: two courses in photography or permission of instructor.

ART 584 Photography VII (3). Continuation of ART 583. Six hours per week. Prerequisite: ART 583 or permission of instructor.

ART 593 Workshop for Teachers of Art (1).

ART 603 Drawing X (3). Concentrated exploration of drawing ideas with emphasis on personal expression. Criticism and discussion. Six hours per week. Prerequisite: ART 504 or permission of instructor.

ART 604 Drawing XI (3). Continuation of ART 603. Six hours per week. Prerequisite: ART 603 or permission of instructor.

ART 605 Weaving (3). Continuation of ART 506 with an emphasis on a personal direction. Research and a teaching assignment required. Six hours per week. Prerequisite: ART 506 or permission of instructor.

ART 606 Weaving (3). Continuation of ART 605. Six hours per week. Prerequisite: ART 605 or permission of instructor.

ART 607 Surface Design (3). Continuation of ART 508 with emphasis on personal direction in printing, batik or both. Research and a teaching assignment required. Six hours per week. Prerequisite: ART 508 or permission of instructor.

ART 608 Surface Design (3). Continuation of ART 607. Six hours per week. Prerequisite: ART 607 or permission of instructor.

ART 611 Metalsmithing VIII (3). Concentrated exploration of the use of metal in jewelry-making and holloware. Six hours per week. Prerequisite: ART 512 or permission of instructor.

ART 612 Metalsmithing IX (3). Continuation of ART 611. Six hours per week. Prerequisite: ART 611 or permission of instructor.

ART 613 Wood VIII (3). A concentrated exploration of three-dimensional design, with self-direction in design techniques and media. Six hours

per week. Prerequisite: ART 514 or permission of instructor.

ART 614 Wood IX (3). A continuation of ART 613. Six hours per week. Prerequisite: ART 613 or permission of instructor.

ART 633 Painting VIII (3). Self-directed work in any media. Criticism and discussion. Six hours per week. Prerequisite: ART 534 or permission of instructor.

ART 634 Painting IX (3). Continuation of ART 633. Six hours per week. Prerequisite: ART 633 or permission of instructor.

ART 641 Art Education Philosophy (3). In-depth study of varied philosophies of art education. Research from contributing areas such as education, psychology, aesthetics, art history, museum practice and other disciplines. Lectures, discussions, with research and in-depth reading.

ART 642 Art Education Curriculum (3). Study of practices and problems, including recent curriculum developments, methods and materials, media experiences, planning the instructional area and program, implications of research in the fields of art and education, museum practice, etc. Lectures, readings, visitations and research study are included.

ART 644 Graduate Cooperative Education (3). May be repeated to a maximum of six credits. Graded pass/fail. Prerequisite: permission of chair.

ART 651 Graphic Design VIII (3). Advanced specialization; continuation of ART 552.

ART 652 Graphic Design IX (3). Advanced specialization; continuation of ART 651.

ART 661 Sculpture VIII (3). Selected problems involved in the sculpture process, opportunity for directed study and studio work in a variety of three-dimensional media or processes. Emphasis on developing a cohesive, creative body of work. Studio and lecture. Six hours per week. Prerequisite: ART 562 or permission of instructor.

ART 662 Sculpture IX (3). Continuation of ART 661. Six hours per week. Prerequisite: ART 661 or permission of instructor.

ART 671 Ceramics VIII (3). Concentrated study of selected ceramic processes and techniques. Six hours per week. Prerequisite: ART 572 or permission of instructor.

ART 672 Ceramics IX (3). Continuation of ART 671. Six hours per week. Prerequisite: ART 671 or permission of instructor.

ART 680 Printmaking VIII (3). Advanced problems. Concentrated study of individual problems culminating in a unified body of work. Individual expression, technical proficiency, criticism and discussion are emphasized. Six hours per week. Prerequisite: ART 580 or ART 581 or permission of instructor.

ART 681 Printmaking IX (3). Advanced problems. Continuation of ART 680. Six hours per week. Prerequisite: ART 680 or permission of instructor.

ART 683 Photography VIII (3). Concentrated study of individual problems dealing with black and white, color prints and slides, and multi-screen media presentations. Criticism and discussion. Format is structured for individual's needs and desires. Six hours per week. Prerequisite: ART 584 or permission of instructor.

ART 684 Photography IX (3). Continuation of ART 683. Six hours per week. Prerequisite: ART 683 or permission of instructor.

ART 690 Special Problems in Studio Art (3). An independent problems course in studio art for graduate students under the direction of a faculty member. The student must submit and receive approval of a detailed study plan prior to registration. May be repeated up to three times for credit. Prerequisites: consent of instructor and permission of department chair.

ART 691 Special Problems in Art History (3). An independent problems course in art history for graduate students under the direction of the art history faculty. The student must submit and receive approval of a detailed study plan prior to registration. May be repeated up to three times for credit. Prerequisites: consent of supervising faculty member and permission of department chair.

ART 692 Special Problems in Art Education (3). An independent problems course in art education for graduate students under the direction of the art education faculty. The student must submit and receive approval of a detailed study plan prior to registration. Does not count as a studio elective. May be repeated up to three times for credit. Prerequisites: consent of instructor and permission of department chair.

ART 698 Practicum (6). A final project of independent studio work to be developed and exhibited by the M.A. candidate in studio art. Documentation (slides/video), poster and a written statement (which includes a description of the direction and influences upon the student's work) must accompany the exhibition. The candidate must pass an oral examination covering all areas of the exhibited work.

ASTRONOMY (AST)

AST 515 Special Topics (1-3). This course is designed to fulfill special needs not met by other courses. It may be a lecture or seminar course. Prerequisite: consent of instructor.

BUSINESS EDUCATION (BED)

BED 510 Methods and Materials-Teaching Business/Marketing Education Subjects (3). A required course for business/marketing students emphasizing the latest methods and materials for teaching business and marketing subjects. Must

Business Education (BED)

be completed before doing student teaching. Field experience required. Field trips may be required. Prerequisite: CTE 503 or EDU 303.

BED 517 Coordinated Occupational Experience (3-6). This course provides an internship in modern business and office positions. Related class meetings deal with orientation to cooperative education, school and business relationships, office procedures, systems, records management and maintenance, business English, and career opportunities. Not open to students who have had OSY 517.

BED 595 Special Problems (3). Prerequisite: consent of instructor.

BED 601 Seminar in Business and Marketing Education (3-6). This seminar consists of a study of current topical concerns related to the field of business and marketing education.

BED 607 Business Office Education Workshop (1-3). Seminar-type workshop dealing with current problems in business and office education.

BED 610 Foundations of Business and Marketing Education (3). This course is designed to present the history, purposes, principles, practices, problems and trends of business and marketing education.

BED 611 Improvement of Instruction in Office Skills Subjects (3). Deals with materials, tests, standards and teaching procedures in keyboarding, desktop publishing and office procedures. Special attention will be given to problems encountered in teaching office skills subjects.

BED 612 Improvement of Instruction in Accounting and Basic Business Subjects (3). Deals with materials, tests, standards and teaching procedures in bookkeeping, general business and related subjects. Special attention will be given to teaching problems of the students in the class.

BED 613 Supervised Readings in Business and Marketing Education (3). A reading course specifically for business and marketing education teachers. Current literature, unpublished theses and books in the field of business and marketing teacher education are used. A paper suited to the student's special problem of interest is required.

BED 615 Current Problems in Business and Marketing Education (3). A study of employment trends in office occupations, objectives of high school business and marketing programs, and the provisions of the Carl Perkins Vocational Education Act of 1944 pertaining to business education. Recent research and current thought in business and marketing education are studied.

BED 616 Administration and Supervision of Business and Marketing (3). This course deals with the development of effective techniques of administering the business and marketing program at the secondary school and junior college levels. The values of local and state supervision, leadership and professional development will be studied.

BED 619 Advanced Information Processing for Educators (3). A study of the methods and materials used in teaching advanced information processing. The course will emphasize the latest in advanced electronic document preparation principles, including an exploration of the Internet and a study of the software and hardware needed to incorporate advanced information processing in classrooms.

BED 620 Business Education in the Middle School (3). An examination of the business curricula for the middle school, teaching methodology appropriate for the early teens, and development of classroom materials.

BED 627 Youth Organizations — Business and Marketing (3). This course is designed for teachers to develop competencies in planning and implementing youth organization activities.

BED 628 Promoting Business and Marketing Education Programs (3). Designed to provide the teacher with the tools to unite the goals of business and marketing education with the needs of the community.

BED 695 Special Problems (3). This course deals with pressing problems in business and marketing education as a result of legislation, technological changes and innovation. Problems growing out of the needs and interests of the class are emphasized. Prerequisite: 12 hours of graduate work and consent of instructor.

BIOLOGY (BIO)

BIO 500 Pathogenic Microbiology (4). Study of the organisms causing disease as well as the effect of these organisms on the host. The normal bacterial flora and its role in the infection process are discussed. Laboratory entails identification of the pathogenic organisms. Two lectures and four hours laboratory per week. Prerequisite: BIO 300. (On demand)

BIO 501 Immunology (4). A discussion of immune response, formation of antibodies, structure of antibodies, antigen-antibody reactions, hypersensitivity, and allergic response. Laboratory includes techniques and methods for production and detection of antigen-antibody reactions. Two lectures and four hours of laboratory per week. Prerequisite: BIO 300. BIO 321 recommended. (On demand)

BIO 503 Virology (3). Introduction to the principles of virology with emphasis on animal viruses. The nature and classification of viruses, techniques for analysis and the role of viruses in disease will be covered. Three hours of lecture per week. Prerequisites: BIO 300 and 321. (On demand)

BIO 504 Medical Cell Biology (3). A discussion of cell biology as related to the field of medicine and clinical knowledge. Emphasis is placed on the most recent applications of cellular and molecular techniques used in the research, diagnosis and treatment of clinical conditions. Considerations will be given to a wide range of topics, includ-

ing cancer, neural regeneration, wound healing, aging, gene therapy, congenital deformation, AIDS and other prevalent disease states. Three hours of lecture per week. Prerequisite: BIO 321. (On demand)

BIO 506 Advanced Field Biology (4). For students who wish to learn the identification principles and actual identification of living organisms. Course work will include a study of the ecological aspects of the various organisms and their distribution. Techniques of teaching about nature will be emphasized. Prerequisite: junior or senior standing for science education majors or graduate standing for science teachers. (Summer)

BIO 510 Cell Physiology (4). The study of the life processes of the individual cell as related to structure. Particular emphasis is placed on current molecular aspects of biological mechanisms, including growth, cell division and macromolecular synthesis. Two lectures and four hours of laboratory per week. Prerequisites: BIO 321, CHE 310, and four hours of physics. (On demand)

BIO 511 Cell Metabolism (4). Cellular metabolism including photosynthesis, respiration, and the synthesis of lipids and proteins. Emphasis is placed on enzymatic mechanisms and metabolic pathways. Two lectures and four hours laboratory per week. Prerequisites: BIO 321 and CHE 530. (On demand)

BIO 512 Microscopy and Microtechniques (4). Techniques in bright field, phase contrast, interference contrast, and photo microscopy are emphasized. Standard methods in fixation, embedding, microtomy, and staining of specimens are covered. Darkroom techniques for the biological sciences are also included. Prerequisites: BIO 221 and 222. (On demand)

BIO 514 Scanning Electron Microscopy (4). Course designed to teach students the theory, principles and applications of scanning electron microscopy (SEM). After a predetermined number of instructional hours, the student is expected to successfully complete a test which measures the competency of the individual in SEM operation. Subsequently, the student is required to complete a short research project utilizing SEM. Prerequisites: BIO 221 and 222. (Summer, on demand)

BIO 521 Cell Biology Laboratory (3). An experimental approach to modern laboratory techniques in Cell Biology. An emphasis will be placed on the mastery of common cellular and molecular techniques used in clinical, industrial and research settings. Six hours of laboratory per week. Prerequisite: BIO 321. (Spring, odd years)

BIO 522 Pathophysiology (3). Introduction to physiological abnormalities in disease. For advanced students in, or headed for, careers in health related fields. Four hours of lecture per week. Prerequisites: BIO 229 and 230, or BIO 322, or equivalent. (On demand)

BIO 528 Neurobiology (3). Examines vertebrate and invertebrate nervous systems at the cellular and systems levels. Topics include: (1) cellular processes of neurons and glial cells, (2) synapses

and synapse formation, (3) sensory systems, (4) motor systems, and (5) learning and memory. Three hours of lecture per week. Prerequisites: BIO 321 or 322 recommended. (On demand)

BIO 530 Systematics and Bioinformatics (4). This course will focus particularly on systematics and phylogenetic analyses, although other bioinformatics-related topics such as genomics and geographic information systems will be included. Students will search bioinformatic data sources, retrieve and edit data, and perform computer analysis on protein, DNA, and morphological data. Underlying biological processes will also be discussed. Three hours lecture and two hours computer lab per week. Prerequisite: BIO 333 (Genetics).

BIO 533 Molecular Genetics (3). A lecture course which involves discussions of general concepts of DNA structure, replication and translation. Current concepts in bacterial and bacteriophage genetics, such as gene transfer, recombination, gene regulation, and recombinant DNA technology will be examined. Prerequisites: BIO 300 and 333, or consent of instructor. (Spring)

BIO 534 Molecular Genetics Laboratory (3). The laboratory covers classical bacterial and viral genetics such as transduction, conjugation, mutagenesis and mutant analysis by complementation, as well as recently developed recombinant DNA techniques. The student will get hands-on experience in DNA and RNA purification, restriction, endonuclease mapping, cloning and expression of foreign DNA in *E. coli* and DNA sequencing. These techniques and a clear understanding of the processes involved in gene expression will equip the student well for either a position in industry or graduate study. Prerequisite: Previous or concurrent BIO 533. (Same as CHE 534.) (Fall)

BIO 535 Watershed Ecology (3). The study of the movement of water through the environment and its relationship to biotic systems. Areas emphasized include the hydrologic cycle and its influence on groundwater, lotic, and lentic systems; the effect of water on plant and animal communities; and the influence of human activity on watershed structure and function. Prerequisite: BIO 330 or consent of instructor. (Same as GSC 535.) (Spring, even years)

BIO 536 Evolution (3). A study of evolutionary concepts. Prerequisite: BIO 333. (On demand)

BIO 537 Experimental Biochemistry (3). This course will emphasize a mastery of modern biochemical laboratory techniques and the analysis of experimental data. One hour of lecture and four hours of laboratory per week. Prerequisite: CHE 530 or consent of instructor. (Same as CHE 537.)

BIO 538 Animal Behavior (4). An introduction to the principles of animal behavior. Ecological and evolutionary implications of animal behavior are emphasized. Two lectures and four hours of laboratory per week. Prerequisite: BIO 330 or consent of instructor. (On demand)

BIO 546 Stream Ecology (4). The interactions of stream organisms with each other and their abiotic environments will be examined. An area stream will be used as an example for physical and chemical characteristics of a stream and adaptations of organisms to their environments. One weekend field trip required. Prerequisite: BIO 330. (Summer)

BIO 547 Aquatic Vascular Plants (4). A general survey of local aquatic flora, including freshwater algae, aquatic mosses, ferns and angiosperms. Particular emphasis is placed on the morphology, taxonomy, ecology and economic importance of organisms. Field work comprises an integral part of the course. Two hours lecture and four hours laboratory per week. Prerequisite: consent of instructor. (On demand)

BIO 550 Morphology of Vascular Plants (4). A study of the seed plants and ferns with reference to life histories, distinguishing characteristics, relations to environment and economic importance. Two lectures and four hours of laboratory per week. Prerequisite: BIO 222. (On demand)

BIO 553 Field Botany (4). A survey of the flora of West Kentucky and surrounding states. This course should be of interest to anyone interested in the plants of the region. Emphasis will be placed on field identification of common species, identification using keys, collection, and preparation of herbarium specimens, and general plant ecology of the region. Prerequisite: BIO 222. (Summer)

BIO 555 Plant Physiology (4). Study of the growth, development, water, mineral, environmental and regulatory processes of the plant. Intermediary plant metabolism. Characterization of the photosynthesis and metabolic pathways of biosynthesis. Prerequisite: BIO 222. (On demand)

BIO 558 Field Parasitology (4). An ecological approach to the study of parasites in the wildlife of West Kentucky. Will be oriented to appeal to those interested in wildlife management, public health and veterinary medicine. Prerequisite: BIO 221. (On demand)

BIO 561 Freshwater Invertebrates (4). Functional anatomy, ecology and taxonomy of the freshwater invertebrates. Emphasis will be placed on collection, preserving and identifying invertebrates of this region. Two lectures and four hours of laboratory per week. Prerequisite: BIO 221. (On demand)

BIO 562 Field Entomology (4). The study of insect diversity in the field. Students become acquainted with about 200 Families of insects living in the terrestrial and aquatic habitats of the Midwest along with biotic and abiotic factors underlying their distribution, abundance, and dynamics. Each student conducts a small field project on some aspect of insect ecology, behavior, or natural history. Prerequisite: BIO 330.

BIO 563 Aquatic Entomology (4). The study of the ecology, natural history, life cycles, taxonomy and systematics of lotic and lentic insects. The class

will include several field trips to aquatic habitats and the preparation of a working collection. Two hours lecture and four hours laboratory per week. Prerequisite: BIO 330 or consent of instructor. (Spring, odd years)

BIO 565 Biogeochemistry (3). Survey and discussion of the scientific literature on global cycles of carbon, nitrogen, phosphorus and man-made chemicals with special emphasis on the biogeochemical and ecological processes that affect terrestrial and aquatic ecosystems. The course will focus on interdisciplinary themes that incorporate new research results from the fields of biology, chemistry, and geosciences. Prerequisite: junior or higher standing in biology, chemistry or geosciences. (Same as CHE/GSC 565.)

BIO 570 Ichthyology (4). Natural history of fishes, their systematics and some anatomical and physiological relationships with the environment. One weekend fieldtrip required. Three lectures and one afternoon of lab per week. Prerequisite: BIO 221. (Fall)

BIO 572 Herpetology (4). A study of the taxonomy, morphology and natural history of reptiles and amphibians. Emphasis is placed on those species occurring in the central United States. Two lectures and four hours of laboratory per week. Prerequisite: BIO 330 or consent of instructor. (Spring, odd years)

BIO 573 Ornithology (4). Study of avian biology with emphasis on anatomy, physiology and classification of birds. Three lectures and two laboratory hours per week. Requires weekend field trip. Prerequisite: BIO 330. (Spring, even years)

BIO 574 Mammalogy (4). A study of the classification and biology of mammals. Identification and collection of mammals, particularly those of the central United States, will be emphasized in laboratory. Two lectures and four hours of laboratory per week. Some weekend and Saturday field trips required. Prerequisite: BIO 330. (Fall, odd years)

BIO 575 Field Vertebrate Paleontology (4). The study of vertebrate fossils in both field and lab, including collection, processing and identification. Field work may include trips throughout the continental United States and occasionally overseas. (Usually taught during summer.) Prerequisites: completion of two semesters of undergraduate laboratory science and upper-class or graduate standing. (Same as GSC 575.) (On demand)

BIO 577 Population and Conservation Genetics (3). Course is an advanced study of the theories of genetic change in populations. Emphasis will be placed on theoretical aspects of change in gene frequencies as well as practical applications in the field of conservation biology. Three hours lecture per week. Prerequisites: BIO 330 and BIO 333. (Spring, even years)

BIO 578 Conservation Biology (4). An advanced study of the conservation of life at numerous levels of organization. Emphasis will be placed on modern empirical and theoretical studies of the

Biology (BIO)

maintenance, loss, and restoration of biological diversity, endangered species, and habitats. Three one-hour lectures and three hours of laboratory per week. Prerequisite: BIO 330. (Fall, even years)

BIO 580 Principles of Wildlife Management (4). Application of ecological principles of management of wild animals, wildlife agencies and their function in wildlife management; economic, social, biological and other values of wildlife. Three lectures and two hours of laboratory per week. Requires Saturday field trips. Prerequisite: BIO 380. (Fall, even years)

BIO 582 Fisheries Management (4). Ecology and management of freshwater fishes. Methods of fishery investigation will be emphasized. Three lectures and four hours of laboratory per week. Prerequisites: BIO 330. (Fall)

BIO 584 Wildlife Policy and Administration (4). Emphasis is placed on the management of natural resources with particular focus on fish and wildlife. Topics will include an overview of natural resources agency structures and functions, the planning and management cycles, and ethical public relations techniques for multiple-use management in the public domain. Prerequisite: BIO 330 or consent of instructor. (Spring, odd years)

BIO 586 Limnology (4). A study of the interrelationships of the physical, chemical and biological features of lakes and streams. Two lectures and four hours of laboratory per week. Prerequisite: BIO 330. (Spring, even years)

BIO 587 Freshwater Biology (4). Study of the aquatic organisms, their biology, distributions, and ecology in natural aquatic communities and habitats in Kentucky Lake, streams, springs, and wetlands near the Hancock Biological Station. Aquatic organisms to be surveyed include bacteria, algae, aquatic plants, invertebrates, and vertebrate animals. Includes two lectures and four hours of laboratory per week. Prerequisite: BIO 330.

BIO 588 Groundwater Ecosystems (3). Course is a survey of the dynamics and functioning of groundwater ecosystems at various scales from organisms and their habitats to more complex interactions occurring within large aquifers and subsurface drainage basins. Course content is aimed at juniors, seniors and graduate students interested in groundwater quality and habitats. Students must be admitted to graduate status for graduate credit to be earned. A previous course from the following list is highly recommended: BIO 535, 546, 586, 589, 669, 670, GSC 515, 560, or 665. (On demand)

BIO 589 Reservoir Ecology (4). An examination of the variation in chemical and biological phenomena that characterize river impoundments. Literature reading and discussion is followed by 1) learning techniques of observation to identify pattern and process in nature, and 2) designing and conducting field experiments to assess cause and effect relationships. (On demand)

BIO 595 Wildlife/Fisheries Internship (1-4). A practical experience/study situation where the student works a 40-hour week in the field under

the supervision of a wildlife biologist. Bimonthly progress reports are required to be submitted to both the university staff and the wildlife biologist. Students must have junior standing to be considered. (Summer)

BIO 596 Field Studies in Ecology (4). Two weeks or more will be spent living at a field site(s) studying the ecology of a selected ecosystem(s) (e.g., tropical rainforest, coral reef, mangrove swamp, pine forest). Students will gain an understanding of the selected ecosystem's structure and function, including the roles of human cultural and economic influences. Studies are expected to occur in geographic areas other than western Kentucky. (On demand)

BIO 597 Topics in Advanced Molecular Biology (3). Taught from the current literature, this course focuses on new topics in cell and molecular biology. A combination of lecture and student seminars. Students taking the course for graduate credit will be required to complete a library research paper. Prerequisites: BIO 533 and CHE 310, or consent of instructor. (On demand) (Same as CHE 597.)

BIO 620 Advanced Physiology (3). A detailed discussion of physiology from the cellular and molecular level to the systems level. Prerequisite: Previous course in physiology recommended. (On demand)

BIO 623 Physiological Ecology (3). An examination of physiological diversity in relation to the environments in which organisms live or have lived. This encompasses aspects of behavior, morphology, biochemistry and evolutionary biology among other fields. Problem-solving approaches involving problem posing, problem probing, and peer persuasion will be stressed to promote the learning of strategies of scientific research. Students will design and conduct research projects. Prerequisites: BIO 330; BIO 322 is recommended. (On demand)

BIO 630 Animal Ecology (4). Ecological principles in relation to animal populations, including human populations. Emphasis is placed on recent literature and the approach involves lecture, seminar and field activities. Prerequisite: BIO 330. (Spring, even years)

BIO 631 Plant Ecology (4). A general study of the interactions of individual plants and plant communities with their environment, emphasizing the nature and energetics of environment-organism interrelationships and species-community dynamics. Methods of analysis and interpretation of field data are stressed. Field work comprises an integral part of the course. Two lectures and four hours of laboratory per week. Prerequisite: BIO 330 and either BIO 154, 350, and 553. (On demand)

BIO 632 Quantitative Ecology (4). An introduction to ecological data analysis and interpretation. Emphasis is placed on the understanding of ecological data structure and analytical methods. Major topics include sampling, diversity analysis, resemblance measurements, formal classification techniques, and pattern recognitions. Two lectures and four hours of computer lab per week. Prerequisite: BIO 330 and MAT 135.

BIO 635 Biogeography (3). The role of geological, climatological, and biotic factors in explaining the past and current diversity and distribution of Earth's plants and animals. Underlying processes, current theory, and applications are stressed over actual diversity and distribution patterns themselves. Three hours lecture per week. Prerequisite: 15 hours of biology and/or geosciences, or consent of instructor.

BIO 644 Graduate Cooperative Education (3). A meaningful, planned and evaluated work experience related to the career and educational objectives of the student for which both pay and graduate credit may be received. Graded pass/fail. Prerequisite: permission of chair.

BIO 645 Microbial Ecology (4). A study of the basic principles, concepts and function of microbes (eubacteria, archebacteria and cyanobacteria) in the environment. Emphasis will be placed on energy relationships and the role of microbes in mineral cycling in soils, sediments, and fresh water. Two 75-minute lectures and one 2-hour lab per week. Prerequisite: BIO 300 or consent of instructor. (On demand)

BIO 650 Advanced Cell and Molecular Biology (3). Course intended to give students an in-depth understanding of a variety of regulative strategies cells use to maintain existence. Topics included will be selected from modern interpretations of cell systems; including metabolic strategies, differentiation, cell energetics, and gene control systems. The course will be taught from a perspective of applied bioinformatics as related to genome diversity. A specific emphasis will be placed on the most recent advances in the field of cell and molecular biology, as revealed by current primary literature sources. (On demand)

BIO 651 Molecular Mechanisms in Biosystems (3). This course will highlight the most current understanding of the molecular mechanisms that govern life of multicellular organisms. The role and function of biologically important molecules in cell specification and development of complex organisms will be discussed. The course will present concepts and data from different disciplines and provide a comprehensive mechanistic view of biological systems from the perspective of developmental genetics, cellular biology, biochemistry and structural biology. Library work will be required. (On demand)

BIO 655 Molecular Evolution (3). Advanced study of the theories of genetic change on the molecular level. Emphasis will be placed on theoretical aspects of change in DNA sequence (change at the nucleotide level), the evolution of macromolecules and the reconstruction of evolutionary history of genes and organisms. Prerequisites: BIO 333.

BIO 662 Biology of Mollusca (4). Systematics, anatomy, ecology and zoogeography of freshwater and terrestrial mollusks. A museum-quality collection and extensive literature review are required. Two hours lecture and four hours laboratory and field work per week. Prerequisite: BIO 330. (On demand)

BIO 667 Advanced Parasitology (3). This course is designed to cover current topics in all aspects of parasitology. Emphasis is placed on each individual student reviewing selected topics in detail. Library work comprises an integral part of the course. Prerequisite: BIO 467. (On demand)

BIO 669 Biological Limnology (3). A study of the structure and function of aquatic communities and the influence of physicochemical and biological factors on the occurrence and distribution of aquatic organisms. Emphasis will be on lake and reservoir communities. Prerequisite: Graduate standing and consent of instructor. (On demand)

BIO 670 Limnological Analysis Laboratory (4). This course will provide a conceptual framework and techniques for measurement of physical, chemical and biological phenomena in lakes and reservoirs. Emphasis will be placed on experimental approaches to field and laboratory studies. Prerequisite: Graduate standing and consent of instructor. Should follow BIO 586 or GSC 665 and BIO 669. (On demand)

BIO 681 Advanced Fisheries Management (4). The concepts of population dynamics and of the interaction of reproduction, growth and mortality in fish populations. Use of those concepts in fish population management. Prerequisite: BIO 582. (On demand)

BIO 682 Waterfowl Management (4). Ecological principles and techniques involved in management of waterfowl with emphasis on habitat and hunter manipulation. Readings in current research. Includes all-day Saturday field trips to refuges. Three lectures and two hours of laboratory per week. Prerequisite: BIO 580. (On demand)

BIO 689 Introduction to Graduate Study (1) The objective of this course is to orient the new graduate student to graduate study. Topics include the library, literature search, the research plan, choosing a research topic, scientific graphics and photography, scientific writing, scientific presentation seminars. The course is usually team-taught and offered in the evening. Prerequisite: Admission to the graduate program. (Fall)

BIO 691 Topics in Biology I (1). Students explore topics within the biological sciences under the direction of individual faculty. These individually arranged learning experiences may include various combinations of library assignments, conferences, laboratory and field investigation. Written descriptions of the course of study must be approved by the student's advisor and be filed with the chair within two weeks of the beginning of a term. This course sequence may contribute no more than eight credit hours toward the graduate degree requirements.

BIO 692 Topics in Biology II (2).

BIO 693 Topics in Biology III (3).

BIO 694 Topics in Biology IV (4).

BIO 695 Biological Research (4). This course provides research experiences for students pur-

suating the non-thesis option. The course entails selection of a research problem, collection and interpretation of data, and submission of results in a research paper. Prerequisites: Graduate standing and approval of graduate committee.

BIO 696 Understanding Scientific Communication (2). The course concentrates on the methods for preparation and presentation of scientific papers and oral communications. Students will utilize a data set to produce 1) a publication-quality manuscript and 2) a 15-minute presentation such as would be given at a scientific meeting. Topics covered include abstracts, nature of scientific writing, structure and organization of scientific publication, use of literature, graphics and graphic design, and methods of polishing the oral presentation. The course is required of all biological sciences graduate students in their first spring semester of residence and is open to all other graduate students with consent of instructor. One two-hour course meeting per week. (Same as GSC 696.) (Spring)

BIO 697 Seminar (1). Graduate students anticipating completion of the thesis or BIO 695 must register for this course and defend their research before the department faculty and their fellow graduate students.

BIO 698 Thesis I (3).

BIO 699 Thesis II (3).

BUSINESS AND PUBLIC AFFAIRS (BPA)

BPA 515 Communicating in International Business Environment (3). This course is designed to acquaint students with the challenges of international business communication, provide guidelines for successful cross-cultural business communication, and give practice in solving international business problems through the use of the guidelines.

BPA 521 CPS Review I (3). Team-taught course which is designed to aid the professional secretary in a comprehensive review. Should be valuable to any professional secretary and especially helpful to those secretaries preparing for the Certified Professional Secretaries Examination. Covered in this section is a review of business and public policy, economics of management, and office procedures. Graded pass/fail.

BPA 522 CPS Review II (3). Team-taught course which is designed to aid the professional secretary in a comprehensive review. Should be valuable to any professional secretary and especially helpful to those secretaries preparing for the Certified Professional Secretaries Examination. Covered is a review of environmental relations in business, financial analysis in mathematics of business, and communication and decision-making. Graded pass/fail.

BPA 595 Special Problems (3). Prerequisite: consent of instructor.

BPA 596 International Business Seminar (3). Designed to give participants firsthand exposure to

cultures and business practices outside the United States. The seminar includes travel, study, visits to corporate and governmental offices, and other experiential assignments in various countries. At the instructor's discretion, the seminar may focus on a specific topic or theme. This course includes an individual research project approved by the instructor.

BPA 597 Commonwealth Business Seminar (3). A travel-study program that will allow university students enrolled in Kentucky universities to be exposed firsthand to the business environment and practices in Kentucky.

BPA 605 Research Methods in Business (3). Will introduce students to research methods used in business. The class will examine research projects which involve a variety of data collection and analysis methods. Topics include research proposals, research design, survey writing, sources and collection of data, data analysis, and presentation of research results. The class will develop students' oral and written communication skills.

BPA 615 Communication Skills for Managers (3). A course designed to increase the student's management communication effectiveness and give him/her practice in solving business problems through the use of written correspondence, research and report writing, and oral communications. Prerequisite: BPA 215 or consent of instructor.

BPA 695 Special Problems (3). Prerequisite: consent of instructor.

COMMUNICATION DISORDERS (CDI)

CDI 548 Linguistics (3). Study of normal linguistic development and linguistic development of children with language disorders. Prerequisites: CDI 205, 340, 345, and 472.

CDI 550 Neuromuscular Disorders (3). The study of pathology, etiology, diagnosis and speech rehabilitation of cerebral palsy and other neuromuscular disorders.

CDI 555 Audiometry (3). A lecture and laboratory course designed to develop skill in administering audiometric tests. Prerequisite: CDI 310 or consent of instructor.

CDI 572 Diagnostic Methods (3). In-depth study and practical use of contemporary tests used by the speech-language pathologist. Includes formal and informal evaluation procedures. Prerequisites: CDI 325, 345, and 470.

CDI 584 Communication Disorders of Aging (3). Course will include information relative to the effect of communication disorders on the aging population and to acquaint the student with intervention techniques appropriate for the communicatively handicapped older person.

CDI 598 Directed Study: Communication Disorders (3). Available for students who want to investigate special problems. Can be repeated up to six credit hours. Prerequisites: senior standing and consent of instructor directing the study.

Communication Disorders (CDI)

CDI 601 Seminar in Current Trends and Issues (2). Study of professional issues in speech-language pathology. Includes current issues in certification, licensure, ethical and legal aspects of service delivery, program administration and interaction with allied professionals.

CDI 615 Instrumental Methods for SLPs (3). An investigation of technologies and methodologies for assessing and documenting human communication processes. Demonstration and training are provided for evidence-based practice and research. Prerequisite: graduate standing in the speech-language pathology program or permission of instructor.

CDI 620 Phonological Disorders (3). Course will include advanced education in diagnosis and treatment for speech sound disorders. Includes an extensive review of current literature.

CDI 621 Student Teaching in Speech Language Pathology (5). The study and clinical practice of speech-language pathology in the public schools. A seminar component includes current issues in certification, licensure, ethical and legal aspects of service delivery, program administration and interaction with allied professionals.

CDI 624 Disorders of Voice (3). Study of voice pitch, quality, and intensity, including etiology, diagnosis and therapy for functional and organic problems. Course includes a study of laryngeal speech. Prerequisite: advanced standing in communication disorders or consent of instructor.

CDI 625 Fluency Disorders (3). A study of theories and varying characteristics of stuttering, including therapy programs, methods, procedures and materials for treatment of stuttering of different ages and with different characteristics. Prerequisite: advanced standing in communication disorders or consent of instructor.

CDI 635 Graduate Seminar in Communication Disorders (1-3). Topical seminar in speech and hearing. May be repeated to a maximum of six hours.

CDI 640 Individualized School Placement (4-6). Provides opportunities for students to participate in all activities and duties generally expected of a speech-language pathologist in the public schools. Specific supervision will be provided. This course is designed for students with at least one year of teaching experience and seeking a new certificate (students with less than one year of experience must take CDI 621). Course activities include planning, preparation and therapy under on-site supervision. Prerequisite: graduate standing in the speech-language pathology program or permission of instructor.

CDI 646 Research Methods for Speech-Language Pathologists (3). Review of research procedures and designs that have relevance to special populations. Special emphasis will be given to those skills (understanding, assumption, reading and abstracting articles, interpreting data, and evaluating results) needed to understand the relationships between research strategies, clinical problem solving and the assessment of clinical effectiveness in speech-language pathology. Pre-

requisites: graduate standing in speech-language pathology or permission of instructor.

CDI 648 Advanced Language Disorders (3). A study of theories of language development and language disorders.

CDI 654 Educational Audiology (3). A study of contemporary issues and practices relative to the education of hearing-impaired children.

CDI 656 Advanced Audiology (3). An in-depth study of audiology and hearing science as they relate to speech communication. Emphasis will be on clinical theory and application for special problems in audiology.

CDI 658 Hearing Conservation and Industry (3). An introductory course on noise control regulations and implementation of industrial audiology.

CDI 660 Motor Speech Disorders (3). A study of dysarthria and apraxia of speech with emphasis on differential diagnosis and current clinical theory and application. The course will also include assessment and treatment of swallowing disorders.

CDI 670 Practicum Seminar (1). This seminar is a companion course to the graduate practicum experiences in communication disorders. It explores topics on the assessment, diagnosis, and treatment of communication problems of individuals across all ages. This course also serves as a forum for introduction and discussion of current professional issues that impact diagnosis and treatment. One hour lecture, two hours clinical practicum. Graded pass/fail. Prerequisite: graduate standing in the speech-language pathology program or permission of instructor. Corequisite: CDI 674.

CDI 674 Practicum (1-3). Supervised clinical practice with communication disorders. May be repeated up to seven hours. Prerequisites: CDI 470 and CDI 472.

CDI 676 Medical/Clinical Placement (5). Supervised clinical practice within medical and health care settings including hospitals, rehabilitation centers, home health and private practice. Assessment and treatment population will be mainly adults with neurogenic communication disorders. May be repeated to a maximum of 10 hours.

CDI 677 Clinical Pathologies (3). Course will include a review of the various pathologies that the master's level clinician will encounter. Also included will be an overview of relevant educational and medical issues pertinent to the speech pathologists.

CDI 678 Administrations and Supervision of Speech and Hearing Programs (2). Methods, techniques and procedures for planning, developing, managing and evaluating speech and hearing programs. Clinical supervision of clients at the clinic as well as writing of grant proposals and evaluating speech and hearing programs.

CDI 680 Adult Neurogenic Communication Disorders (3). An in-depth study of the characteristics of aphasia, right hemisphere disorders,

and dementia. The cognitive, linguistic, and communicative aspects of each disorder will be explored as the foundation for differential diagnosis and clinical intervention. Prerequisite: graduate standing in the speech-language pathology program or permission of instructor.

CDI 684 Craniofacial Anomalies (3). A study of etiology, assessment and treatment of the oral cleft and other oro-facial anomalies. Includes a survey of the roles of various specialists represented on the oral cleft team.

CDI 686 Swallowing Disorders (3). A study of normal and disordered swallowing processes. The course includes a review of the anatomy and physiology of the swallowing mechanism and the etiology of acquired swallowing disorders. Special emphasis is placed on current clinical theory, application, and technology in differential diagnosis and treatment. Prerequisite: Graduate or postgraduate student or status.

CDI 694 Advanced Clinical Practicum (1-3). Supervised clinical practice in communication disorders. Course activities include supervised planning, preparation and therapy. Prerequisites: completion of CDI 670 and CDI 674. Enrollment may be repeated for up to six hours of credit.

CDI 695 Independent Study (3). Available for selected students who desire to investigate a special area or problem. A final written paper will be submitted to the instructor. May be repeated up to six credit hours. Prerequisites: graduate status and consent of instructor directing the study.

CDI 698 Thesis (3).

CDI 699 Thesis (3).

CIVIL/CONSTRUCTION ENGINEERING TECHNOLOGY (CET)

CET 527 Air Contaminants and Industrial Ventilation (3). A course examining the chemical and particulate air contaminants occurring in the industrial working environment and their potential health hazards. Emphasis is given to industrial ventilation techniques, inhalation control measures and air contaminant treatment methods. Prerequisite: consent of instructor. (Same as OSH 527.)

CET 555 Environmental Regulatory Affairs (3). Laws and regulations pertinent to the management of water and wastewater, hazardous and toxic wastes, air contaminants, underground storage tanks and other timely environmental issues are studied. General legal concepts, the relationships among industries and local, state, and federal agencies, environmental audits and community right-to-know requirements are among the topics included. Prerequisite: CET 341, 342 and 353 or consent of instructor.

CET 585 Remediation Technology (3). Study includes process design and operations for biological and physical/chemical systems used to remove organic and inorganic contaminants from soil and groundwater. Prerequisite: CET 341 or consent of instructor.

CET 586 Unit Treatment Process Laboratory (3). A laboratory course with emphasis on designing, setting up and performing treatability studies for engineering treatment evaluations and water quality research. Actual treatment projects will be selected for purposes of treatment design, performance, optimization and troubleshooting. Prerequisite: CET 387.

CET 587 Sustainable Environmental Technology (3). Course focuses on analysis and design of environmental systems that enhance sustainable development and conserve natural resources. Topics include biosolids land application, natural treatment systems, life cycle analysis, and environmental economics. Prerequisite: CET 341 or consent of instructor.

CET 589 Environmental Modeling (3). Computer modeling of environmental/ecosystem phenomena including predictive impact of pollution discharges and engineering hydrology will be stressed. Prerequisite: ENT 382.

CET 610 Geodetic Survey Systems (3). Mathematical and conceptual elements of advanced survey systems including instrument calibration and error detection, coordinate system rotation and translation, gyroscopic surveys, and applications of calculus to survey computations. Prerequisites: CET 381 and MAT 308.

CET 620 Advanced Geodetic Surveying (3). Concepts and procedures for advanced horizontal and vertical control surveys designed to support geographic information systems; least squares adjustment of both traditional and Global Positioning System observations; digital terrain modeling using triangulated irregular networks and various polynomials. Prerequisites: CET 381.

CET 681 Pollution Assessment and Control (3). A seminar/laboratory class that covers selected course areas within the environmental technology field. Pollution assessment and control will be introduced and specific topics will include environmental science and ecological principles; sampling and analytical techniques; regulatory considerations; and natural wastewater treatment systems. Prerequisite: consent of instructor.

CET 682 Industrial Ecology (3). The focus includes study of environmental planning and design to effect Total Quality Environmental Management (TQEM). Industrial economic impacts amid regulatory agency prescriptions and philosophical trade-off regarding energy conversion and pollution remediation and/or avoidance are addressed.

CET 686 Environmental Assessment and Remediation (3). Legislation, field investigations, risk assessments, feasibility studies, and overall administrative and technical approaches related to environmental site assessments and remediation. Prerequisite: graduate standing.

CET 687 Environmental Systems Design (3). A study of the engineering methods of evaluating and selecting unit treatment processes and combining these into an integrated treatment system facility design.

CET 688 Waste Minimization and Pollution Prevention (3). Organization and management of industrial pollution prevention programs. Emphasis is placed upon advanced and innovative pollution prevention and treatment technologies which may be waste and/or industry specific. Prerequisite: consent of instructor.

CHEMISTRY (CHE)

CHE 502 Fundamentals of Toxicology (3). This course surveys the scope and fields of toxicology, including the methods and design of toxicity studies with attention to toxic chemicals, their effects and regulatory considerations. Prerequisite: CHE 320 or consent of instructor.

CHE 503 Industrial Chemistry (3). Discussion of the application of chemistry principles to industrial processes. Three lectures per week.

CHE 511 Advanced Inorganic Chemistry I (3). Practical aspects of wave mechanics and bonding theories for covalent and ionic compounds; considerations of symmetry; properties and theories associated with the solid state, acids, bases, and coordination compounds. Limited descriptive chemistry; the course focuses on organo-metallic, multi-metal, and icosahedral borane and carbaborane derivatives. PES, NMR, IR, and UV/VIS spectroscopy applications in modern inorganic chemistry. Two 75-minute lectures per week. Prerequisite: CHE 420 or its equivalent at another four-year institution with a grade of C or better.

CHE 512 Inorganic Chemistry Laboratory (2). Syntheses, characterization and introduction of techniques of inorganic chemistry. Four hours of laboratory per week. Prerequisite: CHE 511.

CHE 513 Environmental Chemistry (3). Studies related to chemicals in the environment as to origin, identification, distribution, modification and effect on biological systems. Three lectures per week. Prerequisite: CHE 320 or consent of the instructor.

CHE 518 Instrumental Analysis (Non-Thesis Only) (3). Discussion of instrumental concepts of spectroscopy, chromatography and electrometric methods used in analytical chemistry. Theory, calculations and techniques stressed. Three lectures per week. This course will substitute for CHE 519 upon approval for graduate students with extensive instrumental laboratory experience only.

CHE 519 Instrumental Analysis (5). Theory, calculations, and use of modern analytical techniques, such as visible, ultraviolet, infrared and Raman spectrometry, flame methods, gas chromatography, electrometric methods of analysis and magnetic resonance. Two lectures and six hours of laboratory per week. Prerequisite: CHE 420.

CHE 523 Radiochemistry (3). Theory of nuclear radiations, their interactions, detection and chemical applications. Laboratory experiments utilizing ionization chambers, Geiger counters, proportional gas-flow counters, solid crystal and liquid scintillation detectors, gamma ray spectrometers

and experimental simulations. Two lectures and three hours laboratory per week. Corequisite: CHE 420.

CHE 525 Biochemical Toxicology (3). A study of the basic biochemical aspects of toxicology including adverse chemico-biological interactions and chemical and biologic factors modulating these interactions, descriptions of effects of specific chemical classes, and biochemical mechanisms of toxic effects. Three lectures per week. Prerequisites: CHE 502 and 330, 530, or consent of instructor.

CHE 527 Advanced Organic Chemistry (3). An intensive survey of modern organic chemistry with emphasis on theoretical concepts, reaction mechanisms and syntheses. Three lectures per week. Prerequisites: CHE 320 and 420.

CHE 530 Fundamentals of Biochemistry I (3). Survey of the chemical properties and biological functions of proteins, carbohydrates, and nucleic acids. Topics include: protein structure and function, enzyme kinetics and mechanisms, and elements of organismal metabolism, including a description of glycolysis and the citric acid cycle. Three lectures per week. Credit for either CHE 530 or 330, but not both, can count toward a major or minor in chemistry. Prerequisite: CHE 320.

CHE 537 Experimental Biochemistry (3). This course will emphasize a mastery of modern biochemical laboratory techniques and the analysis of experimental data. One hour of lecture and four hours of laboratory per week. Prerequisite: CHE 530 or consent of instructor. (Same as BIO 537.)

CHE 540 Fundamentals of Biochemistry II (3). Continued study of the elements of metabolism, including their chemical reactions, energetics and regulation. Additional topics include hormones, biochemical function of various organs and replication, transcription and translation of genetic information. Three lectures per week. Prerequisite: CHE 530.

CHE 545 Glassblowing (1). Laboratory demonstrations and exercises. Mastery of the different types of seals used in construction of scientific glass apparatus. Three hours of laboratory per week. Course restricted to chemistry majors. Prerequisite: Senior standing. Cannot be used as an elective for ACS-accredited area.

CHE 560 Modern Chemistry for Middle School Science Teachers (1-3). For middle school science teachers with limited preparation in chemistry, basic organic and inorganic chemistry, emphasizing atomic structure, chemical bonding and solution chemistry. Although content-oriented, special effort is made to enable the participants to immediately implement relevant applications into their respective science programs.

CHE 561 Modern Chemistry for High School Science Teachers (1-3). For high school science teachers with limited preparation in chemistry. Basic organic and inorganic chemistry, emphasizing atomic structure, chemical bonding and solution chemistry. Although content-oriented,

Chemistry (CHE)

special effort is made to enable the participants to immediately implement relevant applications into their respective science programs. One to three lectures per week.

CHE 565 Biogeochemistry (3). Survey and discussion of the scientific literature on global cycles of carbon, nitrogen, phosphorus and man-made chemicals with special emphasis on the biogeochemical and ecological processes that affect terrestrial and aquatic ecosystems. The course will focus on interdisciplinary themes that incorporate new research results from the fields of biology, chemistry, and geosciences. Prerequisite: junior or higher standing in biology, chemistry or geosciences. (Same as BIO/GSC 565.)

CHE 569 Spectrometric Identification of Organic Compounds (2). Course dealing with the theory and applications of the following methods to the structural analysis of organic compounds: IR, NMR, UV-Vis, and MS. Two lectures per week. Prerequisites: CHE 320 and 519.

CHE 581 Advanced Physical Chemistry (3). Continuation of some topics included in the one-year physical chemistry course and inclusion of new topics. Among these topics are quantum chemistry, bonding, statistical thermodynamics, spectroscopy, macromolecules and the solid state. Three lectures per week. Prerequisite: CHE 420.

CHE 591 Special Problems in Chemistry (1). Laboratory and/or library investigations on special topics. Minimum of three hours per week. May be repeated once for credit. Prerequisites: Senior standing and consent of instructor.

CHE 592 Special Problems in Chemistry (2). Laboratory and/or library investigations on special topics. Minimum of six hours per week. May be repeated once for credit. Prerequisites: Senior standing and consent of instructor.

CHE 593 Special Problems in Chemistry (3). Laboratory and/or library investigations on special topics. Minimum of nine hours per week. May be repeated once for credit. Prerequisites: Senior standing and consent of instructor.

CHE 601 Seminar (1). Reports concerning current chemical literature including student-faculty discussions.

CHE 602 Seminar (1). Reports concerning recent research carried out in the department including student-faculty discussions.

CHE 610 Chemical Thermodynamics (3). Mathematical treatment of the laws of classical thermodynamics with special emphasis on the applications to chemical systems. Prerequisite: CHE 420.

CHE 611 Advanced Inorganic Chemistry II (3). A continuation of CHE 511 with increased emphasis on the descriptive chemistry of the various groups of elements as rationalized by bonding concepts and periodic trends studied in CHE 511. Three lectures per week. Prerequisite: CHE 511.

CHE 620 Chemical Kinetics and Mechanisms (3). Rate theory, experimental methods, treatment of data, simple and complex reactions, reaction mechanisms. Three lectures per week. Prerequisite: CHE 420.

CHE 627 Chemical Separations (3). An in-depth study of modern analytical and preparative separation techniques. Emphasis is placed on molecular and bulk processes that affect the overall performance of a separation, as well as on practical aspects of commonly-employed methods and instrumentation. Prerequisites: CHE 518 or 519, or consent of instructor.

CHE 628 Mass Spectrometry (3). Advanced study of the theory and practical aspects of molecular characterization by mass spectrometry. Topics will include molecular ionization and fragmentation, mass fragment separation, and fragment detection with an emphasis on accurate interpretation of resultant mass spectra. Prerequisites: CHE 518 or 519, or instructor consent.

CHE 629 Medicinal Chemistry (3). Course that emphasizes the role of organic chemistry in drug design and development and its correlation to the molecular mechanisms of drug action. Two lectures per week. Prerequisites: CHE 320; CHE 527 or CHE 530 is recommended.

CHE 641 Spectroscopy and Group Theory (3). Applications of group theoretical considerations of observed spectra. Spectra are discussed with emphasis on inorganic compounds. Three lectures per week. Prerequisite: CHE 511.

CHE 660 Topics in Teaching Chemistry in Middle School Science Classes (1-3). For middle school science teachers with limited preparation in chemistry. Safety issues and laboratory teaching techniques will be focused on in this course. This course is designed to enable the participants to immediately implement relevant applications into their respective science programs.

CHE 661 Topics in Teaching Chemistry in High School Science (1-3). For high school science teachers with limited preparation in chemistry. Safety issues and laboratory teaching techniques will be focused on in this course. This course is designed to enable the participants to immediately implement relevant applications into their respective science programs.

CHE 670 Special Topics in Inorganic Chemistry (1-3). Selected topics which may include chemical applications of group theory, coordination compounds, organometallic compounds, and chemistry of less familiar elements. May be repeated for credit as different topics are featured. One to three lectures per week. Prerequisite: CHE 511.

CHE 671 Special Topics in Physical Chemistry (1-3). Topics of current interest in physical chemistry. May be repeated for credit as different topics are featured. One to three lectures per week. Prerequisite: CHE 581.

CHE 672 Special Topics in Analytical Chemistry (1-3). Topics of current interest in analytical chemistry. May be repeated for credit as different

topics are featured. One to three lectures per week. Prerequisite: CHE 518 or 519.

CHE 673 Topics in Organic Chemistry (1-3). Advanced study in selected areas of organic chemistry. May be repeated for credit as different topics are featured. One to three lectures per week. Prerequisite: CHE 320 with 527 very strongly recommended.

CHE 674 Topics in Biochemistry (1-3). Advanced study in selected areas of biochemistry. May be repeated for credit as different topics are introduced. One to three lectures per week. Prerequisite: CHE 530 or consent of instructor.

CHE 676 Polymer Chemistry (3). The chemistry and physical properties of natural and synthetic polymers of practical importance, coupled with the instrumental and spectroscopic methods of their evaluation. Three lectures per week. Prerequisite: CHE 320.

CHE 677 Physical Organic Chemistry (3). A study of the mechanisms of organic reactions and the effect of structure on reactivity in organic reactions as interpreted from experimental data. Three lectures per week. Prerequisite: CHE 527.

CHE 687 Graduate Cooperative Education I (5). Consists of on-site training in modern analytical techniques utilized by environmental laboratories, including determination of metals, BOD/TOC/TSS, autoanalyzers, specific ion/titrimetric, sample preparation for chromatography, liquid chromatograph. Enrollment restricted to students in environmental chemistry option of non-thesis M.S. Prerequisite: permission of department chair.

CHE 688 Graduate Cooperative Education II (5). A continuation of CHE 687, with emphasis shifted to chromatographic analyses of pesticides/herbicides and mass spectrometry with its appropriate hyphenated techniques. Enrollment restricted to students in environmental chemistry option of non-thesis M.S. Prerequisite: permission of chair.

CHE 689 Advanced Analytical Chemistry (3). An extension of CHE 519 in which additional aspects of chemical instrumentation are covered such as the application of computers in analytical chemistry. Other topics covered will depend upon the interests of the students enrolled. Three lectures per week. Prerequisite: CHE 519.

CHE 691 Special Problems in Chemistry (1). Laboratory and/or library investigations on special topics, minimum of four hours per week. Prerequisite: Graduate status in the department of chemistry.

CHE 692 Special Problems in Chemistry (2). Laboratory and/or library investigations on special topics, minimum of eight hours per week. Prerequisite: Graduate status in the department of chemistry.

CHE 693 Special Problems in Chemistry (3). Laboratory and/or library investigations on

special topics, minimum of 12 hours per week. Prerequisite: Graduate status in the department of chemistry.

CHE 698 Thesis Research (3). Problems and hours arranged individually with staff members directing the research. Registration must be approved by the chair of the department.

CHE 699 Thesis Research (3). Continuation of CHE 698, which is a prerequisite.

COMPUTER INFORMATION SYSTEMS (CIS)

CIS 500 Internship (3). Graded pass/fail.

CIS 507 Fundamentals of Distributed Database Applications (3). This course covers the fundamental concepts of distributed database management systems. The emphasis is on the concepts, algorithms and the protocols. It includes an overview of the architecture, database design, query processing algorithms, concurrency control, recovery and replication strategies. Prerequisite: CIS 407 or equivalent.

CIS 508 Computer Simulation (3). A study of computer simulation models of systems and processes. Simulation methodology, simulation model development, simulation computer languages, and the analysis of simulation results are considered. The course makes use of simulation computer software. Prerequisites: CIS 343 and CSC 199 or equivalent, or consent of instructor.

CIS 525 Overview of E-Business Technologies (3). This course provides an overview of important technologies that underlie and enable E-Business. A solid understanding of the common E-Business models and their underlying enabling technologies will be examined using a practical case-based approach. Prerequisite: consent of instructor.

CIS 545 Enterprise Resource Planning (3). This course provides the knowledge required to appreciate the functions and benefits of Enterprise Resource Planning (ERP) systems. Students will learn the impact of an ERP system, how ERP software integrates business functions, and how to make current business functions compatible with ERP system. The students will also develop an appreciation of live, interactive information from an ERP system and the value of its availability throughout the organization. Prerequisite: Permission of the instructor.

CIS 553 Quantitative Business Analysis (3). A study of quantitative methods used in business and industrial organizations. Topics covered include linear programming, inventory models, PERT and CPM, simulation and waiting-line models. Prerequisite: MGT 443.

CIS 595 Special Problems (3). This course consists of independent in-depth study of some problem in computer methods and/or quantitative methods. Periodic conferences will be arranged with the supervising faculty member on an individual basis. Prerequisite: consent of instructor.

CIS 609 Data Warehousing and Data Mining (3). This course provides the student with the technical skills required to plan, implement and maintain a data warehouse using appropriate software.

CIS 644 Graduate Cooperative Education (3). May be repeated to a maximum of six credits. Cannot be used to meet M.B.A., M.P.A. or M.S. degree requirements. Graded pass/fail. Prerequisite: permission of chair.

CIS 645 Decision Support and Expert Systems (3). Study of the theories and techniques of computerized decision support and expert systems. The practical application of these systems to problems of business and industrial organizations is stressed. A major part of the course will be devoted to the use of appropriate decision support and expert system computer software. Prerequisite: BPA 355 or consent of instructor.

CIS 646 A Manager's Guide to Database (3). This course places the database environment in an organizational context. Information is an increasingly valuable corporate resource. Allocation of resources is a primary managerial responsibility. This course provides managers with the background necessary for making decisions regarding the information resource. Topics include information resource planning, managing implementation in the database environment, human factor in the database environment, and software and hardware selection. Prerequisite: BPA 355 or consent of instructor.

CIS 647 Systems Analysis and Design for End User/Manager (3). This course presents an overview of information systems (IS) and the systems development life cycle for the systems analyst. The course will focus on tools and techniques that the end user, analyst and/or programmer can use to document IS. Classical and structured tools for describing data flow, data structure, process flow, file design, input and output designs, and program specifications will be applied to documenting systems. The course will also survey other important topics for the systems analyst such as data gathering and reporting, project management, cost/benefit analysis, and computer-aided system engineering (CASE) technologies. Prerequisite: BPA 355 or consent of instructor.

CIS 650 Software Methodologies (3). Explores methodologies and practices used in the contemporary software development projects from the managerial and technical perspectives. From the managerial perspective, it covers software life cycle models, object oriented methodologies, rapid development methodologies, agile modeling, software design principles and methods, verification and testing methods, and software process maturity models. On the technical side, it explores solutions that are currently available that aid in implementing these models and methodologies. Prerequisite: consent of instructor.

CIS 653 Management Science for Managerial Decision-Making (3). A study of the operations research models and methods which are most frequently used in business and industrial organizations. Topics include linear, goal and integer programming and sensitivity analysis,

network models for project management, inventory management models, computer simulation, waiting-line models, decision analysis, and time series analysis and forecasting. Prerequisites: CIS 443 and one of the following: ACC 308, BPA 355, CIS 307.

CIS 654 Management Science Models and Methods (3). A continuation of CIS 653 with an in-depth study of one or more of the topics from CIS 653. Prerequisite: CIS 653.

CIS 655 Multivariate Statistical Analysis (3). A study of multivariate statistical analysis techniques. Topics include multiple regression analysis, multivariate analysis of variance, discriminate analysis and factor analysis. Emphasis is on practical application of these techniques to the problems of business and industrial organizations. Prerequisite: CIS 443.

CIS 680 Information Technology Policy and Strategy (3). Course incorporates a case study strategy to actively develop the student's ability to analyze information technology issues from the overall perspective of the organization.

CIS 695 Comprehensive Project in Computer Information Systems (3). This course consists of an independent, in-depth study of a topic or problem in computer information systems under the direct supervision of a faculty member. Periodic conferences will be arranged with the supervising faculty member on an individual basis. Prerequisites: 12 hours of graduate work in computer information systems or computer science and consent of the instructor.

COMMUNICATION (COM)

COM 551 Supervision of Forensic Activities (3). A survey of current problems in administering a speech and theatre activity program. Includes tournament management and judging. Practicum in supervision of festival and tournament activities facing the instructor, such as preparing the contestant for duet acting, the contest play, interpretive and forensic events.

COM 553 Advanced Team Communication and Leadership (3). Survey of theory, research, and current practices relevant to the study of team communication and leadership. Students will examine communicative behavior of productive teams and effective leaders, and participate in team building exercises.

COM 557 Organizational Learning and Dialogue (3) Explores organizations as systems of learning based on productive alternative forms of human communication. Theories and tools of dialogue and organizational learning are applied to contemporary workplace practices. Prerequisite: COM 385 or graduate standing.

COM 581 Seminar in Interpersonal Communication (3). A study of the contemporary approaches to interpersonal communication with opportunities for practical application of those approaches in diverse interpersonal situations.

Communication (COM))

COM 585 Advanced Organizational Communication (3). Survey of theory and research relevant to the study of organizational communication. Students will examine how communication processes shape and reshape the activities of organizing within and between organizations. Prerequisites: senior standing and COM 385 or graduate status.

COM 589 Directed Individual Study in Communication Theory (3). A course designed to meet the needs of individuals and groups who wish to explore topics not covered in other organizational communication courses or to do in-depth study of an issue introduced in another course. A proposal for study must be approved by the instructor during the first week of classes. General areas of study from which specific topics can be drawn include interpersonal communication, small group communication, and communication within organizations. May be repeated for a maximum of six hours. Graded pass/fail.

COM 599 Internship (3-6). A course designed for students to get experience in the application of theory to practical situations. Businesses and organizations selected to participate draw from qualified students with skills in organizational communication, forensics, technical theatre or acting. May be repeated for a total of six hours. Graded pass/fail. Prerequisite: senior standing or consent of instructor.

COM 600 Seminar in International and Intercultural Communication (3). Analysis of theories and research in international communication and intercultural communication. Focus on such variables as interaction among racial, ethnic, and cultural groups; transnational information flow; and the role of media in facilitating international and intercultural knowledge and understanding. (Same as JMC 600.)

COM 644 Graduate Cooperative Education (3). May be repeated for a maximum of six credits. Graded pass/fail. Prerequisite: permission of chair.

COM 645 Foundations of Organizational Communication (3). A survey of the development of organizational communication from early communication thinkers to contemporary individuals who have contributed theory and influenced the discipline.

COM 661 Theories of Persuasion and Argumentation (3). Classical and modern theories of persuasion and argumentation. Behavioral theory and research are examined and the effects of various forms of argument and attitude change are studied. Ethical standards of persuasion and argumentation are explored.

COM 672 Communication in Instructional Environments (3). Communication in a variety of instructional contexts with focus on introductory courses at the college level. Emphasis is placed on the literature, philosophies and theories concerning communication instruction.

COM 673 Organizational Training and Development (3). Specific problem areas in communica-

tion structures within particular organizations are identified. A concentrated examination is made of the areas of assessment, diagnosis, prescription, intervention and evaluation of communication problems and the training and development opportunities resulting from those problems within organizations.

COM 681 Seminar in Conflict Resolution (3). Designed to illustrate the central role of communication in resolving conflict within various organizational entities. The course will focus on conflict resolution skills required in such environments as management and labor, public administration, families and education. A particular area of concentration will be selected each semester.

COM 683 Seminar in Communication Variables (3). Variables affecting communication including perception, language, attitudes and cognitive processes. Research related to each variable will be examined.

COM 685 Seminar in Organizational Communication (9). Detailed studies in organizational communication of interest to faculty and students. A contemporary topic, to be announced one semester in advance, is examined each time the course is offered. Past topics include consulting, subordinate-superior relations, gender communication, mentoring and intercultural communication. The course may be repeated for a total of nine hours. Prerequisite: COM 585 or consent of instructor.

COM 690 Research Methods in Organizational Communication (2). Review of research methodologies used in the study of communication variables.

COM 692 Research Practice (2). Application of research methods used to study communication variables. Miniature thesis required. Prerequisite: COM 690.

COM 693 Readings in Communication Research (3). Students read 4,000-5,000 pages of research in a particular area of interest. Usually the product is a research paper written in a publishable format. Permission of the graduate advisor is required prior to enrollment. Graded pass/fail.

COM 694 Directed Individual Study in Organizational Communication (1-3). The student has the opportunity to pursue specific areas of research under the supervision of the participating faculty member. Particular expectations are negotiated between the student, department and faculty member. May be repeated once for a maximum of six hours. Graded pass/fail.

COM 698 Thesis (3).

COM 699 Thesis (3).

CRIMINAL JUSTICE (CRJ)

CRJ 505 Criminal Justice Administration (3). Principles of administration, organization, leadership and management are examined as they apply

to the various components of criminal justice. Prerequisites: CRJ 140 with a grade of C or better, 220, and 240 or permission of instructor.

CRJ 522 Issues in Policing (3). Examines police function, history, operational strategies, ethics, deviance, use of force, policy, accreditation, accountability, and other contemporary issues. Prerequisite: CRJ 220 or permission of instructor.

CRJ 533 Juvenile Delinquency (3). Nature and extent of delinquency; competing explanatory theories; evaluation of programs for prevention and control; role of police, detention, juvenile courts and corrections. Prerequisite: CRJ 320 with a grade of C or better, or consent of instructor. (Same as SOC 533.)

CRJ 537 Juvenile Justice Procedures (3). The organization, function and jurisdiction of juvenile agencies; police referrals, preventive techniques and youth divisions; juvenile court procedures and juvenile statutes. Prerequisite: CRJ 320 with a grade of C or better, or consent of instructor.

CRJ 544 Constitutional and Legal Issues in CRJ (3). A comprehensive examination of the constitutional law that affects criminal justice professionals, citizens, suspects, and incarcerated individuals, with considerable attention given to both civil and criminal legal issues surfacing in the criminal justice field. Topics will include due process, search and seizure, self-incrimination, bail, and right to counsel and a fair trial. Prerequisite: CRJ 140 with a grade of C or better.

CRJ 555 Crime Prevention (3). This interactive seminar will deal with crime prevention strategies for law enforcement, business/industrial security and other criminal justice personnel. Issues of situational crime prevention, environmental design, physical security measures, defensible space, opportunity theories, crime displacement, rational choice theory and selected crime prevention studies will be explored. International issues and extensive case studies will be included. Prerequisite: CRJ 140 with a grade of "C" or better or consent of professor.

CRJ 573 Victimology (3). Analysis of major perspectives on victimization. Emphasis on patterns of victimization, the role of victims in the generation of crime, and the experience of the victim in the criminal justice system. Prerequisite: CRJ 140 with a grade of C or better.

CRJ 575 Comparative Criminal Justice Systems (3). An examination of non-American criminal justice systems. Specific areas of comparison will include but not be limited to, the police, judiciary, and criminal corrections of selected foreign systems. Prerequisite: CRJ 140 with a grade of C or better.

CRJ 605 Seminar in the Administration of Justice (3). An overview and evaluation of policies and practices in the administration of justice.

CRJ 610 Seminar in Critical Justice Issues (3). An assessment of selected issues in justice currently under attack and the development of strategies to meet those challenges.

CRJ 644 Graduate Cooperative Education (3). May be repeated to a maximum of six credits. Cannot be used to meet M.B.A., M.P.A. or M.S. degree requirements. Graded pass/fail. Prerequisite: permission of division director.

CRJ 645 Graduate Internship (3). Supervised internship placement in a criminal justice agency. Students are expected to examine administrative, operational, legal and ethical issues faced by the placement agency. Prerequisite: permission of division director.

CRJ 695 Special Problems (3). Individual study and projects designed to meet the needs of each student. Requires consent of division director.

CRJ 698 Thesis (3-6).

COMPUTER SCIENCE (CSC)

CSC 500 Compiler Construction (3). Review of program language structures, translation, loading, execution and storage allocation. Compilation of simple expressions and statements. Organization of a compiler including compile-time and run-time symbol tables, lexical scan, syntax scan, object code generation, error diagnostics, object code optimization techniques and overall design. Use of writing languages and bootstrapping. Prerequisites: CSC 415.

CSC 503 Automata and Formal Languages (3). Alphabets, languages and grammars: finite automata, regular expressions and type E grammars, context-free languages and push down automata, Turing machines and unsolvability. Prerequisite: senior standing or consent of instructor.

CSC 510 Network Management and Implementation (3). An introduction to networking and data communications including topical coverage of transmission protocols, interconnectivity, network implementation and server installations. Emphasis will be placed on network design, operations, management, and costing. May not receive credit for both TSM 133 and CSC 510. Prerequisite: Permission of instructor.

CSC 515 Computer Graphics Programming (3). Course to cover computer graphics programming techniques and algorithms. Topics include: graphical systems and models, defining geometric objects and applying geometric transformations, techniques for rendering and viewing, shading algorithms, hierarchical and object-oriented graphics, mathematical methods for generating curves and surfaces, physics-based modeling, and utilizing special graphics display hardware. Prerequisite: knowledge of a high-level programming language and permission of instructor.

CSC 520 Numerical Analysis II (3). A thorough treatment of solutions of equations, interpolation and approximations, numerical solution of initial value problems in ordinary differential equations. Selected algorithms will be programmed for solution on computers. Prerequisites: CSC 420 and MAT 411 or consent of instructor.

CSC 525 Special Topics I (3). This course is designed to fulfill special needs not met by other courses. It can be a lecture or seminar course. May be repeated one time. Prerequisite: consent of instructor.

CSC 526 Special Topics II (3). Special topics in computer science. May be repeated one time.

CSC 530 Graphical User Interface Development (3). Presents an introduction to human-computer interaction, graphical user interface design and implementation. Requires the development of a significant software application using a selected user interface development tool. Corequisite: CSC 531, 532, 533 or 534. Prerequisites: CIS 407 and knowledge of a high-level programming language or consent of instructor.

CSC 531 Graphical User Interface Development Project in Graphics and Visual Computing (0). Project course to accompany CSC 530. The chosen project will be related to graphical user interface development and graphics and visual computing. This course must be taken with CSC 530. Graded pass/fail.

CSC 532 Graphical User Interface Development Project in Net-Centric Computing (0). Project course to accompany CSC 530. The chosen project will be related to graphical user interface development and net-centric computing. This course must be taken with CSC 530. Graded pass/fail.

CSC 533 Graphical User Interface Development Project in Embedded Systems Programming (0). Project course to accompany CSC 530. The chosen project will be related to graphical user interface development and embedded systems programming. This course must be taken with CSC 530. Graded pass/fail.

CSC 534 Graphical User Interface Development Project in Applications Programming (0). Project course to accompany CSC 530. The chosen project will be related to graphical user interface development and applications programming. This course must be taken with CSC 530. Graded pass/fail.

CSC 540 Social, Ethical and Professional Issues in the Information Age (3). This course emphasizes social, ethical, legal, technical and professional issues encountered in the information age including the historical and social context, professional responsibilities, risks and liabilities, and intellectual property. Prerequisite: senior standing.

CSC 545 Advanced Computer Architecture (3). In-depth discussion of some topics from CSC 405, high-speed functional units, distributed architecture, multiprocessors, pipelining, parallel computers and other topics. Prerequisite: CSC 405.

CSC 551 Microprogrammed Logic Design (4). Combinational and segmented logic implementation using selectors, multiplexers, PLA, ROM and RAM. Architecture of logic emulation. Virtual machines. Vertical and horizontal microprogramming. Simulation studies of microprogrammed

systems. Three hours lecture, two hours laboratories per week. Prerequisite: CSC 405.

CSC 560 UNIX System Administration (3). This course covers the fundamental principles of administering the family of UNIX operating systems. Topics that will be covered include installation, configuration, administration and management of one flavor of this operating system.

CSC 565 Embedded Systems Design (3). Architecture of various microcontrollers and their uses in embedded systems applications are studied. One or more of the popular microcontrollers will be selected for practice in hardware design and programming, including methods for interfacing with computers, sensors and control systems. Prerequisite: CSC 405 or consent of instructor.

CSC 575 Computer Animation and Game Development (3). This course builds on the computer animation techniques of CSC 515. Topics covered include lighting techniques, texture mapping, atmospheric effects, collision detection, joystick and game pad inputs, and sound effects. Physics modeling, real-time animation, AI behavior modeling and other fundamentals of game design are introduced. Prerequisites: CSC 515 or permission of instructor.

CSC 580 Introduction to Computer Programming Education (3). A computer science methods course for education majors. General introduction to teaching computer programming in the secondary school environment including state program requirements in computer science and information systems, use of teaching aids with special application to the teaching of computer programming and computer laboratory management. Prerequisite: a course in a high-level programming language.

CSC 581 Educational Programming Languages (3). Designed to introduce students to programming languages currently being used in the educational environment. Having been introduced to BASIC in the prerequisite course, students will also cover that language in greater detail. Prerequisite: CSC 580.

CSC 595 Special Problems (1-3). Supervised independent study of specialized topics in computer science. May be repeated one time. Prerequisite: senior standing and/or consent of instructor.

CSC 630 Client Application Development (3). This course concentrates on the client component of client-server applications to include designing, implementing, managing, maintaining, training and refining the user interface of interactive software. Special emphasis will be placed on developing easy-to-use and easy-to-learn user interfaces. A significant software application will be developed using one or more commercial application development tools.

CSC 632 Server Application Development (3). This is an advanced programming course that introduces the concepts of writing distributed server applications. Emphasis is placed on practical server application development for e-commerce. Students develop expertise in the use of a server applications development tools using object-ori-

Computer Science (CSC)

ented analysis and design. The course develops an understanding of interrelationship between the technical architecture and the organizational policies and procedures.

CSC 644 Graduate Cooperative Education (3). May be repeated to a maximum of six credits. Cannot be used to meet M.B.A., M.P.A. or M.S. degree requirements. Graded pass/fail. Prerequisite: permission of chair.

CSC 695 Comprehensive Project in Computer Science (3). This course consists of an independent, in-depth study of a topic or problem in computer science under the direct supervision of a faculty member. Periodic conferences will be arranged with the supervising faculty member on an individual basis. Prerequisites: 12 hours of graduate work in computer science or computer information systems and consent of the instructor.

COLLEGE STUDENT PERSONNEL (CSP)

CSP 615 Introduction to Student Affairs in Higher Education (3). The historical and philosophical development of the student affairs profession will be explored and discussed. Major topics include an in-depth study of the departments that typically constitute the division of student affairs. This includes history, function, trends, issues and significant personnel. Class content will be presented in seminar format.

CSP 616 The American College Student (3). The characteristics of the contemporary American college student will be examined. Major topics will include an examination of the motivations for entering institutions of higher education, developmental theory related to college students, problems and challenges specific to the American concept of making higher education accessible to a large percentage of the population, and the impact of contemporary economic and social trends on the college population.

CSP 617 Current Issues in Student Affairs (3). Current topics shaping the profession of student affairs will be examined. These will include issues involving the relationship between the student and the university, student development, funding and governance, as well as current issues involving the impact of changing social trends on the work of the student affairs professions. A case study method will be used in the presentation of the course.

CSP 618 Practicum and Seminar in College Student Personnel Work (3). Practical aspects of college student personnel work will be examined through the use of appropriate placements in working professional settings. A seminar will accompany these placements to provide a forum for a structured discussion and development of concepts observed while in the field placement settings.

CAREER AND TECHNICAL EDUCATION (CTE)

CTE 500 Analysis of Global Influences on the Workplace. (3) Course focuses on the global

influences that are changing the workplace for teachers and trainers of today. The primary emphasis is on the scope, origins, and current trends that influence the classroom and other learning contexts, including business and government. Students are asked to research and explore global effects on their own current or prospective work environments.

CTE 501 Teaching through Application (3). Course is designed to provide new and pre-service teachers with an introduction to the field of career and technical education. Included are topics related to motivation, and learning theory, curriculum, school organization, funding, laboratory management and historical, sociocultural, psychological and philosophical foundations of career and technical education. Field experience required.

CTE 502 Instructional Media, Curricula and Assessment in CTE (3). Course will provide an overview of current trends and issues in instructional technology and curricula in the technology rich instructional environment. The focus is on instructional approaches unique to and appropriate for the career and technical education classroom and laboratory. Field experience required.

CTE 503 Planning and Implementing Instruction in CTE (3). Course will provide an overview of current trends and issues in planning and implementing instruction in the media rich career and technical education classroom and laboratory. Includes exploration of such varied methods as lecture, discussion, group instruction, projects and instructional modules.

CTE 510 Introduction to Technical Training Programs for Industry (3). A study of the organization, planning, delivery and evaluation of adult education, development and training as conducted within business and industry.

CTE 540 School and Occupational Relations (3). A course designed to provide instruction in establishing a working relationship between vocational schools and industry. Attention is given to organizing and maintaining an occupational advisory committee, occupational surveys, field based instruction and student follow-up.

CTE 560 Seminar in Career and Technical Education (3). Individual and group investigations of current problems and issues in the field of vocational-industrial and technical education. Each student will be expected to plan and complete a minor research project and present his findings to the seminar.

CTE 561 Planning Technical Education Facilities (3). Principles and practices underlying the planning and designing of shops and laboratories for vocational, industrial and technical education, and implementation of legislation such as OSHA.

CTE 562 School and Community Relations for the Technical Instructor (3). A systematic approach to school-community relations that treats the community as an active participant with the vocational staff in the development and operation of an effective occupational-oriented educational program.

CTE 563 Evaluation of Instruction in Industrial Technical Education (3). A course designed to provide instruction in the process of instructional evaluation. Emphasis is given to the establishment of student performance criteria, the assessment of student performance in the cognitive, affective and psychomotor domains, and the assigning of grades. An independent study project or research report is required.

CTE 566 Special Problems in Career and Technical Education (1-6). Provides an opportunity for individual study, laboratory practice and research in vocational education. The student must show a real need for such study and have the proposed problem approved before registering for the course. May be repeated for up to six hours credit.

CTE 567 Managing and Organizing Student Organizations (3). A study of procedures for organizing clubs, suggestions to club sponsors, employer-employee banquets, publications, open-house, field trips, etc.

CTE 568 Independent Study in Career and Technical Education (3-6). Supervised readings or independent investigative projects in the various aspects of administration, supervision and coordination of vocational programs. Prerequisite: consent of instructor. May be repeated for up to six hours credit.

CTE 569 Practicum in Career and Technical Education (3). This course is designed for vocational education personnel who are interested in working within special areas in vocational education such as administration, coordination and implementation of legislation such as metrics, OSHA, etc.

CTE 570 Foundations of Career and Technical Education (3). A study of the social, historical and philosophical foundations of technology education and vocational education. Includes critical examination of the influences of the foundations of technology and vocational education on contemporary curricular developments, selection and organization of course content and teaching techniques. An independent study project or research report is required. (Same as TTE 470.)

CTE 571 Instructional Methods in Career and Technical Education (3). The presentation and application of instructional materials, methods, techniques and devices relevant to teaching technology and vocational education at the orientation, exploration and preparation levels. Students will explore current research on methods of instruction, then plan and execute teaching units for both individual and group instruction, selecting content and instructional strategies based on the goals and objectives appropriate to the content organizers of technology. Activities will include development of lesson plans, organization of materials, and presentation of psychomotor, affective and cognitive instruction as well as establishment of student expectations and a student behavior policy. An independent study project or research report is required. (Same as TTE 471.)

CTE 572 Managing Career and Technical Learning Facilities (3). Principles and practices for planning, organizing, and maintaining school shop, laboratory and classroom facilities used in teaching vocational subjects. Emphasis is given to classroom management and control, supply inventory, equipment maintenance and safety. An independent study project or research report is required.

CTE 573 Occupational Field Experience (3). Directed work experience in various vocational settings for the purpose of giving the student practical experiences in the field. Supervision is provided by both the instructional staff of the college and the cooperating agency. Students are expected to maintain a full record of activities and assignments and to prepare periodic progress reports.

CTE 574 Instructional Media and Curriculum Development (3). A study of current trends and issues in curriculum development and instructional media for technology and vocational education. Students will demonstrate an understanding of the curricular considerations unique to the application of other areas of knowledge to technological problem-solving. Research and problem-solving skills will be utilized to adapt instructional media and existing teaching units to both individual and group instruction. Students will link content and instructional strategies based on goals and objectives appropriate to the content organizers of technology. An independent study project or research report is required. (Same as TTE 474.)

CTE 575 Managing Instruction for Learners with Special Needs (3). A study of the basic ideas, perspectives and techniques critical to the planning, management and evaluation of instruction for special needs learners. Classroom situations involving diverse populations and handicaps will be examined. A student-generated field experience is required. (Same as TTE 575.)

CTE 577 Educator Externship, Field Experience in the Workplace (3). Emphasis on behavior patterns and changes in adults. Theories of occupational development, levels of occupational maturity, effects of personality traits, and socio-psychological environmental influences. Projects and field studies will be utilized.

CTE 578 Vocational Guidance (3). Problems and procedures involved in assisting individuals to choose, prepare for, enter upon and become adjusted in their vocations. Students will develop skills which enhance their ability to teach identification and clarification of values, as well as enhancement of decision-making, career planning and job acquisition skills. Technology education teachers, vocational education teachers and counselors will develop insight into the principles involved in evaluating occupational outlooks and the skills and traits required for success in selected careers.

CTE 622 Student Teaching Seminar (3). A professional experience to be provided concurrently with student teaching to provide theory, research base, and a forum to support the performance in the school assignment. Topics arising from problems encountered in the classroom as well as other

current topics will be studied. This course will only be for the students seeking initial certification at the master's level in career and technical education majors. Graded pass/fail. Prerequisites: Admission to student teaching and concurrent registration in student teaching.

CTE 640 Student Teaching Practicum in Career and Technical Education (6). This course provides opportunities for students to participate in all activities and duties generally expected of a career and technical education teacher. Student will observe, participate, and teach under the supervision of a faculty member and a cooperating teacher. Includes experience in lesson planning, classroom management, record keeping, development and use of instructional materials and delivery of instruction. Graded pass/fail.

CTE 665 (565) Program Planning and Evaluation (3). Procedures and techniques in planning and evaluating programs in vocational and technical education.

CTE 667 (576) Emerging Trends in Instructional Technology (3). A study will be made of trends in industrial technology affecting vocational technical education, including competency-based education, management by objectives, objectives exchange systems, information storage and retrieval, instructional models, etc.

CTE 671 Philosophy of Career and Technical Education (3). A study of the social, historical and philosophical development and current philosophical beliefs of technology-based studies. Exploring the various philosophies of technology education and vocational education, the student will develop a philosophy and understanding of technology or vocational education, then apply that philosophy and understanding to technology-based education about the technological attitudes and skills to understanding new or different past-present-future technology systems. The meaning of technology-based education to the individual and society, as well as the nature and impacts of technology on the individual and society will be introduced and explored. (Same as TTE 671.)

CTE 673 Supervision of Career and Technical Education (3). A study of the competencies needed to supervise and develop effective techniques of working with technology and vocational education teachers. Problems and methods of orientation, communication and supervision of teachers and instruction are discussed. (Same as TTE 673.)

CTE 675 Experienced Teacher Practices in Career and Technical Education (3). A study of contemporary industrial theory, practice and trends in Kentucky. Through problem solving, and development of instructional activities, the student will explore the relationship between exemplary experienced teacher practices/behaviors and educational research as it related to instructional improvement and enhancement of learning. Students will develop portfolio entries that demonstrate skill and best practice in focusing industrial technology education classroom instruction toward achievement of Kentucky's academic learning expectations under the mandates of KERA and the teacher expectations described

in Kentucky's Experienced Teacher Standards for Preparation and Certification.

CTE 676 Organization and Administration of Career and Technical Education (3). A study of the organization and administration of technology, vocational and technical education programs on the various school levels and the development and coordination of external advisory boards. The students will experience development of a strategic plan that includes a mission statement, rationale for change, goals and objectives, action steps, as well as a program evaluation strategy. State and national legislation affecting technology and vocational education will be studied. (Same as TTE 676.)

CTE 677 Practices in Cooperative Occupational Education (3). The philosophy, purpose, problems and procedures in the operation of cooperative part-time and evening school programs.

CTE 678 Review of Professional Literature in Vocational Education (3). Review and analysis of outstanding professional literature in the various fields of vocational education. Survey of research and professional papers from other disciplines that relate to vocational education will be made. Critical analysis of selected publications will be required.

CTE 694 Research in Career and Technical Education (3). A study of techniques and procedures used in designing, conducting, interpreting and evaluating research in industrial, training, and technical education settings. Applications, advantages and limitations of various research methods are studied and explored. Graduate status is required. (Same as IET 694)

CTE 698 Thesis (3).

CTE 699 Thesis (3).

ECONOMICS (ECO)

ECO 500 Foundations of Economic Analysis (3). A rigorous introduction to economics including the application of the basic principles of microeconomics and macroeconomics. This course is designed for nontraditional students who would like to refresh their understanding of economics and for graduate students and advanced undergraduates who lack prior proper training in economics. Students cannot receive undergraduate credit for this class and ECO 230 and/or ECO 231. In addition, this class cannot be used to fulfill graduate requirements in the M.B.A. or M.S. in economics program. Prerequisites: MAT 117, 120, 140 or 150; or an ACT math standard score of at least 23; or consent of instructor.

ECO 505 Internship in Economics (1-3). Students are placed with cooperating firms or government agencies to receive on-the-job training in economic analysis. Work experience is supervised by faculty and written reports are required. Graded pass/fail. Prerequisite: permission of departmental chair.

Economics (ECO)

ECO 530 Intermediate Macro Theory (3). A review of the macroeconomic problems that face society, the theories that have arisen to describe the economy, and policy implications of possible solutions. Outside research as specified by the instructor will be required. Credit cannot be given for both ECO 330 and ECO 530. Prerequisites: ECO 230 and MAT 220 or consent of instructor.

ECO 531 Intermediate Micro Theory (3). An analysis of price and distribution theory. Outside research as specified by the instructor will be required. Credit cannot be given for both ECO 331 and ECO 531. Prerequisites: ECO 231 and MAT 220 or consent of instructor.

ECO 538 Monetary and Fiscal Policy (3). An appraisal of the federal government's efforts to promote full employment and price stability. Prerequisite: ECO 330 or consent of instructor.

ECO 539 Microeconomic Policy (3). An analysis of government policy affecting business firms and consumer choice. Prerequisite: ECO 331 or consent of instructor.

ECO 540 Market Structure and Firm Behavior (3). This course examines non-competitive market structures such as monopoly, oligopoly and monopolistic competition. The course will focus on output and pricing decisions of such firms, the economic impact of these market structures, and the regulation of non-competitive markets. Prerequisite: ECO 230 and 231.

ECO 550 Public Finance (3). A survey of the principles and practices of raising and spending public revenues. Prerequisite: ECO 231 or consent of instructor.

ECO 570 Labor Economics (3). A survey of the economics of labor, the conditions of employment, wages and the development of labor organizations. Prerequisite: ECO 231 or consent of instructor.

ECO 595 Special Problems (1-3). Prerequisite: consent of instructor.

ECO 597 Teaching and Application of Economic Principles: K-12 (3). A survey of content, materials, teaching methodology and practicum in program design for incorporating economic principles into grades K-12. The course is designed for those with little or no formal economic background. (Same as EDU 597.)

ECO 625 Managerial Economics (3). An application of economic theory to business problems. Prerequisites: ECO 230, 231 or equivalent, MAT 220, CIS 443, or consent of instructor.

ECO 630 Macroeconomic Theory (3). An advanced analysis of the major theories of national income, price level, interest rate, and employment determination; in particular the short-run impact of policy choices and shocks within the major models. Prerequisite: ECO 330 or consent of instructor.

ECO 631 Microeconomic Theory (3). An advanced treatment of price theory, emphasizing the use of differential calculus and linear algebra

to formally model the decision-making of individual economic agents. Prerequisite: ECO 331 or consent of instructor.

ECO 633 History of Economic Thought (3). A study of the evolution of important economic thought. Prerequisite: consent of instructor.

ECO 635 Advanced Monetary Theory (3). The evolution of money, monetary theory, monetary policy and the closely related topic of fiscal policy. Prerequisite: ECO 330 or consent of instructor.

ECO 639 Microeconomic Policy and Application (3). An application of basic microeconomic theories to the analysis of the effects of various governmental policies on individual consumers, firms, industries or resource owners. The topics that will be covered in any particular semester will vary, being drawn primarily from policy issues of current importance. Prerequisites: ECO 230 and 231 or consent of instructor.

ECO 644 Graduate Cooperative Education (1-3). May be repeated to a maximum of six credits. Cannot be used to meet M.B.A., M.P.A. or M.S. degree requirements. Graded pass/fail. Prerequisite: permission of chair.

ECO 650 Theory of Public Finance (3). Reviews the problem of resource allocation within the framework of government revenue and expenditure policies, and the impact of these policies on the economy. Prerequisite: ECO 231 or consent of instructor.

ECO 660 International Business and Finance (3). A review of international economic and financial theories and applications, including international trade, payments, investment and currency markets. Prerequisite: ECO 230 & 231 or consent of instructor.

ECO 680 Quantitative Methods of Economics and Business (3). A rigorous presentation of the fundamental quantitative methods most frequently encountered in the graduate study of economics and business. Topics covered include matrix algebra, partial differentiation, constrained and unconstrained optimization and comparative statics. Prerequisites: ECO 230, 231 and MAT 220 or consent of instructor.

ECO 685 Econometrics (3). The theory and application of statistical methods to the analysis of economic and business data. Topics covered include simple and multiple regression analysis, hypothesis testing of linear and nonlinear restrictions, heteroskedasticity, autocorrelation, dummy variables and model selection. Prerequisites: ECO 231 and CIS 343 or consent of instructor.

ECO 690 Forecasting for Business and Government (3). An intuitive presentation of the basic quantitative forecasting techniques widely used in industry and government, including multiple regression analysis, exponential smoothing algorithms and ARIMA modeling (Box-Jenkins). Prerequisites: ECO 230, 231 and CIS 343 or consent of instructor.

ECO 691 Benefit-Cost Analysis for Business and Government (3). Techniques of benefit-cost analysis and related topics. Prerequisite: consent of instructor.

ECO 695 Special Problems (1-3). Independent study of a special problem in economics by students who have the background to do independent work. Prerequisites: ECO 680 and consent of instructor.

ECO 698 Thesis (3).

ECO 699 Thesis (3).

EDUCATIONAL PSYCHOLOGY (EDP)

EDP 675 Advanced Educational Psychology (3). A psychological perspective and research-based examination of the learner, the teacher, and the classroom interaction processes involved in effective educational processes.

EDUCATION (EDU)

EDU 515 Introduction to Environmental Education (3). An introduction to environmental education which will include philosophy, historical development, resource identification, curriculum development, field trip and other activities designed to use the various subject areas in all grade levels as a vehicle to create an environmental ethic.

EDU 520 NASA Aerospace Science Workshop (3). A course designed for teachers at all levels and subject disciplines. The intent of this course is to introduce teachers to the history, present status and future of the space movement through the efforts of the National Aeronautics and Space Administration agency. Instruction will be provided by Aerospace Education Specialists and College of Education faculty.

EDU 585 Environmental Interpretation (3). A course designed for persons in the fields of natural and cultural history, recreation, education, and media. A focus will be placed upon the philosophy, process and values of environmental interpretation while looking closely into the methods and techniques of interpreting programming. Successful completion of the course will lead to a national certification through the National Association for Interpretation.

EDU 597 Teaching and Application of Economic Principles: K-12 (3). A survey of content, materials, teaching methodology and practicum in program design for incorporating economic principles into grades K-12. The course is designed for those with little or no formal economic background. (Same as ECO 597.)

EDU 602 Individualizing Instructional Programs (3). This course will provide a practical experience in the design and development of individualized curriculum materials and instructional programs, preparing IEP's, and in the development of appropriate classroom organizational and management systems to implement these programs.

EDU 603 Systems of Evaluating, Grading and Reporting Pupil Progress (3). Students completing this course would have achieved appropriate skills and understandings to more effectively perform the tasks of evaluating and reporting of pupil progress in the classroom. To include the study of criterion-referenced evaluation, alternative grading practices, teacher-pupil-parent conferencing, alternative reporting systems.

EDU 606 Preparation of Curriculum Materials (3). A course involving the producing of learning materials for use in the elementary and secondary schools.

EDU 609 Education for the Culturally Different (3). A study of the culturally different child with emphasis on causes and cultural responsibilities. Emphasis is given to procedures used to identify, to provide approximate curriculum experiences, and to evaluate the effectiveness of the program.

EDU 614 Direct Study of Children and Youth (3). A group experience in writing and analyzing anecdotal records composed from direct observation by each member, under the guidance of trained leaders and consultants.

EDU 620 Internship in Environmental Education (3). Student spends a directed amount of time working under the supervision of a selected environmental educator. This may be in formal and non-formal settings. May be taken concurrently with EDU 660 if experience and length of internship merits additional credits.

EDU 621 Advanced Methods of Teaching (3). An advanced course that applies theories and practices of models of teaching based upon applied research and practitioners experiences. Prerequisites: EDU 303 or an equivalent course and at least have had student teaching experiences.

EDU 622 Philosophy of Education (3). A course designed to explore the various philosophies of education; the meaning of education to the individual and society; the nature of thinking; educational aims and values; character education; and the interpretation and evaluation of present day issues and problems in education.

EDU 623 Educational Sociology (3). A course designed to review the major sociological forces which condition education: the structure of society, major social trends, and social instructions. (Same as SOC 623.)

EDU 625 Theory and Practice in Classroom Management (3). Analysis of the theoretical and practical aspects of selected systems of classroom management and control. To include the study of several approaches that can assist teachers in establishing and maintaining a healthy and productive system of classroom operation.

EDU 626 Integration of Educational Technology (3). Students use a range of traditional, interactive, and emerging technology tools to enhance learning. Students demonstrate knowledge of existing instructional practices as well as compose and produce artifacts using available resources.

EDU 627 School Law and Finance for Teachers (3). A course designed for the classroom teacher. A study of the laws and finance pertaining to teachers as they work with students, administrators, colleagues and community interest groups. (Same as ADM 627.)

EDU 631 Application of Learning and Motivation Principles to the Classroom (3). A course designed to examine theories of human motivation, learning styles, and human growth, teaching behaviors and learning environments necessary to achieve congruency with these theories.

EDU 632 Comparative Education (3). A systematic examination of education in various nations for the purpose of an enlarged critical view of education in the United States.

EDU 633 Curriculum Development (3). A comprehensive analysis of the process of curriculum development. It includes examination of the theoretical dimensions of curriculum development. The process includes consideration of the bases of curriculum, aims and objectives of schools, planning instruction and curriculum evaluation.

EDU 634 Problems in Curriculum Development in the Public School (1-3). Designed for people desiring to work in specific curriculum areas, K-12. Repeatable to six hours.

EDU 635 Problems in Education (1-3). Designed to permit a graduate student to make a study of a problem of instruction in K-12 settings. Repeatable to six hours.

EDU 636 Readings in Education (1-3). Designed to allow for in-depth study of research in education. Repeatable to six hours.

EDU 645 History of Education in the United States (3). A course designed to study of the growth and development of education in the United States from early colonial times to present, including recent trends and movements.

EDU 649 Research in Education (3). This course is a follow-up of ADM 630. The course includes an exploration of elementary statistics as they apply to the completion of an action research project which was proposed and begun in ADM 630. The action research project is to be concluded during this course and presented during a class/departmental colloquium.

EDU 650 Workshops in Education (1-3). Repeatable to six hours. Maximum of six hours from EDU 650 and/or EDU 651.

EDU 651 TQI Workshops in Education (3). Selected workshops in education. Repeatable to six hours. Maximum of six hours of EDU 650 and/or 651. Prerequisite: admission to graduate school.

EDU 653 The Supervision of Student Teachers (3). Designed to explore the competencies needed by the supervising teacher to develop effective techniques of working with student teachers. Orientation, communication, supervision and the objectives of student teaching are discussed.

EDU 655 Creativity in Teaching (3). A comprehensive course designed to help participants: (1) explore and enhance their own creative powers; (2) learn how to teach creative problem-solving techniques and creative habits of mind to others; and (3) become aware of the variety of theoretical frameworks, research results and measurements which are available in the area of creativity.

EDU 656 Newspaper in the Classroom (3). A course designed to prepare teachers in utilizing local, state and national newspapers in teaching different subjects in elementary and secondary schools. A large variety of curriculum materials will be developed for classroom use.

EDU 658 Nonverbal Communication in the Classroom (3). The course will provide an overview of the literature in nonverbal communication, drawing from psychology, anthropology, sociology, linguistics, speech and communication, and education. Applications of that content will be made to the teaching profession.

EDU 660 Special Problems in Environmental Education (1-3). Selected projects in current developments and trends in environmental education. Repeatable to six hours.

EDU 661 Workshops in Environmental Education (1). Selected workshops in environmental education. Graded pass/fall. Repeatable to three hours. Prerequisites: admission to graduate study and permission of the instructor.

EDU 662 Workshops in Environmental Education (2). Selected workshops in environmental education. Graded pass/fall. Repeatable to six hours. Prerequisites: admission to graduate study.

EDU 663 Workshops in Environmental Education (1-3). Selected workshops in environmental education. Repeatable to nine hours. Graded pass/fail.

EDU 664 Techniques of Teaching Environmental Education (3). This course provides opportunities for the development of teaching attitudes and understanding at all grade levels of the basic natural resources of the school environment. Study of the surrounding area is made through field trips.

EDU 665 Field Experiences in Environmental Education (2-3). This course will be conducted at the Land Between the Lakes Environmental Education Center. The workshop will include techniques of using the out-of-doors as a teaching tool, curriculum development skills, methods of using environmental education as a supplement to curricular areas and localizing environmental education programs to meet the needs of local communities.

EDU 667 Environmental Education in Austria, Germany, and Switzerland (3). Residential study of the mathematical, scientific, social studies, language arts, fine arts, and health connections to the environment in Austria, Germany, and Switzerland. This class is offered in conjunction with the Kentucky Institute for international Studies and takes place in Bregenz, Austria (field experiences required). Prerequisites: admission

Education (EDU)

to the graduate program as a regular or visiting student or permission of instructor.

EDU 668 Agriculture and the Environment in the Classroom (3). The study of agriculture and the environment as it relates to origination and production of food and fiber and how this connects to topics, skills, and concepts that are included in the K-12 classroom. This program is conducted in conjunction with the Kentucky Department of Agriculture (field experience required). Prerequisites: admission to the graduate program or permission of instructor.

EDU 691 Nature and Needs of the Gifted Student (3). A course to provide opportunities for experienced teachers and teacher trainees to develop knowledge and awareness of the characteristics and needs of gifted children and youth, and provides the individual student with opportunities to apply general educational principles for the gifted and talented to total educational concerns.

EDU 692 Methods and Materials for Teaching Gifted Students (3). This course will focus upon the development of instructional strategies and curriculum materials for use with youngsters with high ability and/or potential. Prerequisite: EDU 691 or permission of instructor.

EDU 693 Educational Programs for Gifted Students (3). A course designed to give experience and develop skills in effective planning, organization and execution of educational programs for gifted students. Prerequisite: EDU 691 and 692, or permission of instructor.

EDU 694 Supervised Practicum in Gifted Education (3). A course designed to provide field experience so the teacher may apply principles and educational procedures for teaching gifted students. Repeatable to six hours. Prerequisites: EDU 691 and 692; and either EDU 655, 693, or 695.

EDU 695 Multicultural Gifted Education (3). This course is designed for teachers and counselors to learn practical strategies bridging the fields of gifted education and multicultural education. Theory and practice will be considered to enable educators to help gifted students reach their full potential in multicultural settings. Prerequisite: EDU 691 and 692.

EDU 698 Thesis (3-6). Repeatable to six hours.

EDU 798 Specialty Study (3). Selection of problem, collection of data, and interpretation of data in preparation for writing a research paper. Second three hours culminating in a research paper to be approved by the student's committee. Repeatable to six hours.

ENGINEERING (EGR)

EGR 565 AC and DC Circuit Analysis (4). Kirchoff's laws, Thevenin and Norton's theorems, super-position and reciprocity theorems, properties of L, C, R circuits, filters and resonance. Graduate credit for M.A.T. candidates only.

EGR 567 Communications Systems (4). Filtering and signal bandwidth. Introduction to information theory, encoding and decoding, linear and digital electronic implementation. Two hours of laboratory per week. Prerequisite: EGR 366.

EGR 568 Digital Memory Systems (4). Memory hierarchy. Automatic error detection and correction. Shared and multipoint memory systems. Interprocessor communications. Introduction to computer networking. Prerequisite: CSC 405 or EGR 378.

EGR 569 Microprocessor Techniques (3). Architecture of various microprocessors, assembly of useful microcomputers using one or more of the popular microprocessors, technique of interfacing to microcomputers, programming microcomputers, importance of microcomputers in logic design. Prerequisite: EGR 378.

ELEMENTARY EDUCATION (ELE)

ELE 505 Educational Program for Kindergarten Children (3). A study of recent developments in the education of young children, selection in the use of appropriate activities, methods and materials for kindergarten. Prerequisite: ELE 404 or 604.

ELE 600 Teaching Modern Mathematics (3). Designed to give elementary teachers depth in modern mathematics. Students become familiar with current trends and programs and develop competency in guiding children in developing mathematical concepts.

ELE 601 Social Studies in the Elementary School (3). An examination of the broad content of the social studies and recent experimental programs which attempts to correlate subject matter from the disciplines involved. Emphasis is placed on the cultural background of the children, trends, problems, curriculum materials and individualizing program.

ELE 602 Language Arts: Current Issues and Research (3). A study of the current issues and practices of language arts in the elementary school. Writing is emphasized.

ELE 604 Advanced Studies in Kindergarten (3). A study of the historical background of the kindergarten. This course will emphasize the organization of physical facilities for young children in developmentally appropriate environments. This course will also focus on the study of developmental outcomes for young children and study of parent-teacher partnership. Prerequisite: graduate standing.

ELE 605 Introduction Interdisciplinary Early Childhood Education (3). A course designed for students entering the field of early intervention and educare services for children birth to primary school and students preparing for Kentucky Interdisciplinary Early Childhood Education (IECE) teacher licensure. It addresses the philosophy of early childhood education, teacher performance, professional development and licensure.

ELE 607 Research in Early Childhood Education (3). Designed to give teachers greater depth in understanding the principles of early childhood education by exploring the development of process and research substantiating current practice.

ELE 608 Science in the Elementary School (3). A laboratory-centered course planned for the development of skills in the design and evolution of experiences for teaching science in the elementary school. Experiences dealing with new elementary science curricula and current research are provided.

ELE 610 Student Teaching in Early Childhood Education (4). Designed for people who are interested in working with the kindergarten child. Provides opportunities to participate in all the work and duties of kindergarten with supervision by the professional staff. Prerequisites: elementary certification, ELE 505 and 604.

ELE 611 Elementary School Organization for Instruction (3). An exploration of factors, trends, issues and problems in organizing and implementing the curriculum of the elementary school. There is emphasis on the alternatives in vertical and horizontal organization and on the alternatives for staff utilization.

ELE 612 Infant-Toddler Practicum (2). Course is designed to provide opportunities for students seeking initial certification to participate in activities carried out by early childhood educators working with infants and toddlers with and without disabilities in early childhood settings. A university instructor will provide supervision throughout the experience. Graded pass/fail. Prerequisite: Admission to teacher education and student teaching.

ELE 613 Clinical Experiences IECE (4). Students seeking initial certification in early childhood will participate in a supervised clinical experience. May be taken for 1-4 hours credit. Three weeks of supervised clinical experience will be required for each hour of credit. Repeatable up to 4 credit hours. A total of four credit hours must be completed to meet program requirements. Graded pass/fail. Prerequisite: Admission to teacher education and student teaching.

ELE 615 Poetry for Children (3). An in-depth study of poetry written for children.

ELE 616 Research in Children's Literature (3). An in-depth study of chosen areas in children's literature with emphasis on books and articles about children's books.

ELE 647 Curriculum in the Elementary School (3). A study of the elementary school child and programs which meet his/her needs. Consideration is given to curriculum trends in the elementary school.

ENGLISH (ENG)

ENG 510 Applied Linguistics for Second Language Teaching (3). An overview of the basic concepts, scope, and methodology of the

science of language in its historical and descriptive aspects, including topics and issues in current linguistic studies. Prerequisite: ENG 310. (Same as MLA/TSL 510.)

ENG 512 Directed Study (1-4). Directed independent study program, mutually developed by student and instructor, leading to one or more papers or projects. May be repeated for a maximum of six credits.

ENG 520 Forms of Poetry (3). Explores the question of poetic form from the point of view of practitioners. A course in prosody and the historical development of forms in English and American poetry, including rhymed verse forms, the meters, syllabics, free verse, and prose poetry. Material for discussion will include student poetry and outside texts. This is a capstone course for English majors with an option in creative writing. Prerequisite: ENG 416 or consent of instructor.

ENG 521 Forms of Fiction (3). A study of literary fiction from the writer's point of view. Prerequisite: ENG 415 or consent of instructor.

ENG 531 Introduction to Linguistic Science (3). A study of the basic concepts, scope and methodology of the science of language in its historical and descriptive aspects. Not open to the student who has credit for ENG 310.

ENG 533 Language and Culture (3). A study of the relationship among language, society, and the individual's conception of reality. Prerequisite: three hours of linguistics. (Same as TSL 533.)

ENG 560 Advanced Creative Writing: Fiction (3). Critical discussion of original student writing. Individual conferences and reading assignments in contemporary literature are included. Prerequisite: ENG 415 or consent of instructor. May be repeated for credit.

ENG 561 Advanced Creative Writing: Poetry (3). Critical discussion of student work, from impulse to final draft. Other topics include the relationships between vision and craft; language and experience; image and idea. Reading assignments in contemporary poetry will help to establish criteria for good work. Prerequisites: ENG 416 or consent of instructor. May be repeated for credit.

ENG 571 Documentation Project Management and Standards (3). Techniques and practices for handling documentation projects. Students will learn to manage the work of multiple authors and reviewers, implement successful consulting practices, plan and schedule projects, design style sheets, and create version control systems. The course also covers the dynamics of managing documentation for the implementation of international standards such as ISO 9001. Prerequisites: ENG 324 or 325, or permission of instructor.

ENG 572 Writing Training Materials (3). An overview of the pedagogy and procedures used to create training materials for business, industry, and government. Prerequisites: ENG 324 or 325, or permission of instructor.

ENG 573 Writing Proposals and Grants (3). Techniques and practices for writing proposals and grant proposals. The course will help students learn and practice the rhetorical and persuasive skills necessary to plan and create successful proposals. Prerequisites: ENG 324 or 325, or permission of instructor.

ENG 574 Writing Manuals, Instructions, and Procedures (3). An overview of the principles, conventions, and technologies used to write instructions, manuals, and procedures for business, industry, and government. The course will examine and practice methods for creating instructions and procedures (geared toward processes) and manuals (geared toward products). Prerequisites: ENG 324 or 325, or permission of the instructor.

ENG 575 Advanced Technical Writing (3). Advanced topics and projects in technical writing, focusing on direct application to business and industry. This course serves as the capstone for the Professional Writing major, Technical Writing minor, and Technical Writing Certificate programs. Prerequisites: at least two 400-level courses from the following: ENG 421, 422, 423.

ENG 590 Practicum in Instructional Techniques for Developmental English (3). Practical experience in tutoring individuals and small groups in a writing laboratory. Prerequisites: senior or graduate standing and consent of instructor.

ENG 600 Research and Bibliography (3). An introduction to principles of research and bibliography as a preparation for further graduate study in English.

ENG 601 Teaching Writing in Schools (3). A workshop course emphasizing principles and practices of effective writing instruction. This course is designed for middle and high school classroom teachers. Prerequisite: teaching position.

ENG 602 Teaching Literature in Schools (3). A workshop course emphasizing principles and practices of effective literature instruction. This course is designed for practicing middle and high school classroom teachers. Prerequisite: teaching position.

ENG 603 Teaching English Language Arts in Schools (3). A seminar course emphasizing principles and practices of effective English Language Arts instruction. This class is intended as a capstone course for practicing middle and high school classroom teachers. Prerequisites: teaching position; ENG 600, 601, and 602 or permission of the graduate coordinator.

ENG 604 Purchase Area Writing Project I (3). An intensive workshop course emphasizing principles and practices of effective writing instruction. Designed for practicing classroom teachers. This course is to be taken in conjunction with ENG 605. Prerequisites: K-12 teaching position; application and interview.

ENG 605 Purchase Area Writing Project II (3). Follow-up activities to the Purchase Area Writing Project Summer Institute. Designed for practicing

classroom teachers. This course is to be taken in conjunction with ENG 604. Prerequisites: K-12 teaching position; application and interview.

ENG 606 (500) Chaucer (3). A study of Chaucer's works and their historical and critical contexts.

ENG 607 (501) Milton (3). A study of Milton's works and their historical and critical contexts. (Same as RGS 511.)

ENG 608 (508) Modern Fiction (3). A critical and historical study of selected European and American prose fiction from 1900 to the present.

ENG 609 Contemporary Critical Theory (3). An intensive study of recent critical practices and theoretical approaches to understanding literature.

ENG 610 Graduate Writer's Workshop (3). Supervised independent work in creative writing. May be repeated for credit. Prerequisite: consent of instructor.

ENG 612 Directed Study (3). Supervised independent work in literature, language or writing. Prerequisite: permission of department chair. May be repeated for credit.

ENG 613 (513) Major Authors (3). A major literary figure (or two related figures) will be studied in depth. This course may be repeated once for credit. Prerequisites: ENG 101, 102 and at least one survey of literature course.

ENG 614 Special Topics in English Studies (3). An intensive examination of issues in the study and/or teaching of English. May be repeated for credit.

ENG 615 Topics in Women's Literature (3). Topics in literature written by selected women writers. May be repeated once for credit.

ENG 616 Seminar in Critical Theory (3). A seminar focusing on important issues in critical theory.

ENG 621 Colonial and Federal American Literature (3). An intensive study of selected works from 1607-1800 and their historical and critical contexts.

ENG 623 American Literature, 1800 to 1870 (3). An intensive study of selected works of the period and their historical and critical contexts.

ENG 624 (524) Historical Principles in Composition Theory (3). An historical survey of rhetorical theories as they originate in the classical era, are reinterpreted by composition theory and pedagogy, and are applied to contemporary writing and writing instruction.

ENG 631 American Literature, 1870 to 1920 (3). An intensive study of selected works of the period and their historical and critical contexts.

ENG 633 American Literature since 1920 (3). An intensive study of selected works of the period and their historical and critical contexts.

English (ENG)

ENG 635 Twentieth-Century American Poetry (3). An intensive study of selected works of the period and their historical and critical contexts.

ENG 636 (546) Survey of the American Novel to 1900 (3). A study of the American novel from its beginnings to 1900, with attention to historical and critical contexts.

ENG 637 (547) Topics in African-American Literature (3). A study of selected works of African-American literature and their historical and critical contexts.

ENG 638 (545) Studies in Southern Literature (3). A survey of southern literature and its historical and critical contexts.

ENG 641 Old English Language and Literature (3). An intensive study of selected works from the Old English period (c. 449-1100) and their historical and critical contexts.

ENG 643 Middle English Language and Literature (3). An intensive study of selected works from the Middle English period (c. 1100-1500) and their historical and critical contexts.

ENG 644 Graduate Cooperative Education (3). May be repeated for a maximum of six credits. Graded pass/fail. Prerequisite: permission of chair.

ENG 645 Non-Dramatic English Renaissance Literature (3). An intensive study of selected works of the period and their historical and critical contexts.

ENG 646 (535) Sixteenth-Century British Literature (3). A survey of non-dramatic British literature from 1500 to 1600, with attention to historical and critical contexts.

ENG 647 Shakespeare (3). An intensive study of selected Shakespearean works and their historical and critical contexts.

ENG 649 Seventeenth-Century British Literature (3). An intensive study of selected works of the period and their historical and critical contexts.

ENG 650 (550) Modern Drama (3). A study of selected European and American plays, with attention to literary backgrounds and technical experimentation.

ENG 652 Restoration and Eighteenth-Century British Literature (3). An intensive study of selected works of the period and their historical and critical contexts.

ENG 654 Eighteenth-Century British Novel (3). An intensive study of selected novels of the period and their historical and critical contexts.

ENG 655 The British Romantic Movement (3). An intensive study of selected works of the period and their historical and critical contexts.

ENG 656 Nineteenth-Century British Novel (3). An intensive study of selected novels of the period and their historical and critical contexts.

ENG 657 Victorian Literature (3). An intensive study of selected works of the period and their historical and critical contexts.

ENG 659 Modern English Literature (3). An intensive study of selected works from 1900 to the present and their historical and critical contexts.

ENG 661 Fiction Tutorial (6). An advanced tutorial in fiction writing, in which the student works one-on-one with M.F.A. program faculty via U.S. mail and/or on-line communication to produce a body of original writing. The tutorial will include a directed reading relevant to the student's individual project. May be repeated for credit. Only one tutorial per semester. Prerequisite: admittance into the program or permission of the instructor and program director.

ENG 662 Poetry Tutorial (6). An advanced tutorial in poetry, in which the student works one-on-one with M.F.A. program faculty via U.S. mail and/or on-line communication to produce a body of original poetry. The tutorial will include a directed reading relevant to the student's individual project. May be repeated for credit. Only one tutorial per semester. Prerequisite: admittance into the program or permission of the instructor and program director.

ENG 663 Creative Non-Fiction Tutorial (6). An advanced tutorial in creative nonfiction writing, in which the student works one-on-one with M.F.A. program faculty via U.S. mail and/or on-line communication to produce a body of original writing. The tutorial will include a directed reading relevant to the student's individual project. May be repeated for credit. Only one tutorial per semester. Prerequisite: admittance into the program or permission of the instructor and program director.

ENG 664 Field Study (3). Each student, with the assistance of M.F.A. Program faculty, will set up a field study in writing. For suggestions of what this can entail you should consult with your advisor. Prerequisites: Students will have completed two semesters of the M.F.A. program before receiving credit for the Field Study.

ENG 665 Fiction Residency (3). The residency experience will comprise workshops, daily seminars, and readings by faculty members and visiting writers. This course may be repeated for credit, but only one Graduate Residency may be completed per semester. Graded pass/fail. Prerequisites: admittance into the program or permission of the program director.

ENG 666 Poetry Residency (3). The residency experience will comprise workshops, daily seminars, and readings by faculty members and visiting writers. This course may be repeated for credit, but only one Graduate Residency may be completed per semester. Graded pass/fail. Prerequisites: admittance into the program or permission of the program director.

ENG 667 Creative Non-Fiction Residency (3). The residency experience will comprise workshops, daily seminars, and readings by faculty members and visiting writers. This course may be repeated for credit, but only one Graduate Resi-

dency may be completed per semester. Graded pass/fail. Prerequisites: admittance into the program or permission of the program director.

ENG 668 Creative Thesis (6). An advanced tutorial in fiction, poetry, creative nonfiction, or writing for young people in which the student works one-on-one with M.F.A. Program faculty to revise a body of original writing produced in previous graduate tutorials. Prerequisites: Three sections of ENG 661, 662, 663, and/or ENG 673. (Student must have completed at least two sections in genre of thesis.)

ENG 671 Special Topics in Creative Writing (3). Study of a special area of creative writing. Content will vary from semester to semester according to the student and faculty interest. The course will combine the careful reading of works by the established writers with analysis of original student work. Students will be required to attend readings sponsored by the creative writing program and encouraged to attend other readings on campus and in the area. This course may be repeated for credit three times with the consent of the instructor and student's advisor.

ENG 672 Studies in Creative Non-Fiction (3). Study and practice in the literary art of creative nonfiction with particular emphasis on the personal essay. Course requirements will include attendance at readings sponsored by the creative writing program. This course may be repeated three times for credit with the consent of the instructor and student's advisor.

ENG 673 Writing for Young People Tutorial (6). An advanced tutorial in writing for young people in which the student works one-on-one with MFA program faculty via U.S. mail and/or on-line communication to produce a body of original writing. This tutorial will include directed readings relevant to the student's individual project. This course may be repeated for credit, but only one tutorial may be completed per semester. Prerequisite: Admission to the program or permission by the instructor or program director.

ENG 674 Writing for Young People Residency (3). Each MFA semester will begin with a 10-day residency period (July for the fall semester and January for the spring semester) in which students participate in an active supportive writing community. The residency experience will comprise workshops, daily seminars, and reading by faculty members and visiting writers. During the residency, students will meet with their faculty advisors to determine a course of actions for the semester. The plan to be developed must include a reading list, a set of writing projects, and administrative details about methods of exchange between the student and the faculty member. This course may be repeated for credit, but only one graduate residency may be completed per semester. Prerequisite: Admission to the program or permission by the program director.

ENG 681 (581) Special Topics in Rhetoric and Composition (3). An examination of contemporary and traditional issues and concerns in the study of rhetoric and composition. The course usually will focus upon an announced topic but

will allow students to explore matters of individual concern. May be repeated for credit.

ENG 682 Language Theory (3). An intensive study of the concepts, process, and limitations of language as a social agent.

ENG 685 Teaching English at the College Level (3). A study of various theoretical approaches to teaching composition and literature; will also include practical applications.

ENG 698 Thesis Writing (3).

ENG 699 Thesis Writing (3).

ELECTRICAL AND TELECOMMUNICATIONS ENGINEERING (ETE)

ETE 510 Computer Design (3). Review of logic design and elementary computer organization. Asynchronous and synchronous logic design using VHDL and programmable logic. Design of the central processing unit, memory, control, and input-output portions of a computer. The VHDL hardware design language will be used. Three hours lecture per week. Cannot be taken for graduate credit. Prerequisite: ETE 366, ETE 378. Corequisite: ETE 511.

ETE 511 Computer Design Laboratory (1). Laboratory to accompany ETE 510. Cannot be taken for graduate credit. Prerequisite: ETE 366, ETE 378. Corequisite: ETE 510.

ETE 520 Digital Signal Processing (3). Discrete-time signals and systems; Sampling and aliasing; Discrete Fourier Transform; Z-Transforms; FIR and IIR filter design techniques; Current applications of digital signal processing. Cannot be taken for graduate credit. Three hours lecture per week. Prerequisite: PHY 264 (formerly PHY 364) or equivalent.

ETE 521 Digital Signal Processing Laboratory (1). Laboratory to accompany ETE 520. Cannot be taken for graduate credit. Prerequisite: ETE 264 (PHY 264). Corequisite: ETE 520.

ETE 542 Physical Electronics (3). Semiconductor fundamentals, energy bands, carrier transport theory, continuity equations, PN junction diodes, Zener diodes, Schottky Barrier diodes, metal-semiconductor contacts, bipolar junction transistors, MOS capacitors, field effect transistors, and microelectronic fabrication. Cannot be taken for graduate credit. Three hours lecture per week. Prerequisite: PHY 370.

ETE 550 Communications and Modulation (3). Modulations such as AM, FM, PAM, PPM, PDM, single sideband, vestigial sideband. Coherent and non-coherent detection, heterodyne action, performance and distortion, circuits for modulating and demodulating. Cannot be taken for graduate credit. Three hours lecture per week. Prerequisite: ETE 420. Corequisite: ETE 551.

ETE 551 Communications and Modulation Laboratory (1). Laboratory to ETE 550. Prerequisite: ETE 420. Corequisite: ETE 550.

EXERCISE SCIENCE (EXS)

EXS 510 Sociology of Sport and Exercise (3). A critical study of the sociological factors affecting sport, performance, and exercise. Students will learn about the social, cultural, environmental, and racial dynamics involved in sport and exercise. This course will also study the effects sport and exercise have on the social structure of society. (Same as HEA/REC 510.)

EXS 520 Leisure and Aging (3). Introduction to the physiological, sexual and recreational aspects of aging in American society; exploration of the role of recreation with the aging; emphasis on planning leisure programs with the elderly. Students taking this course for graduate credit will be required to do additional work. (Same as GTY/HEA/REC 520.)

EXS 540 Applied Sport and Exercise Psychology (3). This course is designed to introduce the student to applied principles of sport and exercise psychology. The class consists of approximately half the semester hours spent in a supervised sport/exercise camp or wellness/rehabilitation setting. Prerequisites: EXS 485 or 660, or have the permission of the instructor.

EXS 609 Evaluation in Exercise and Leisure Studies (3). This course is designed to give students a basic knowledge in descriptive and inferential statistics commonly used in exercise science and recreation/leisure research. Statistical procedures covered include correlation and linear regression, t-test, analysis of variance (ANOVA), and two-way ANOVA. Emphasis is placed on understanding and using a statistical package through computer analysis. Recommended prerequisite: EXS 400. (Same as REC 609.)

EXS 625 Advanced Concepts of Human Performance (3). This course will investigate current topics applicable to the field of Exercise Science. Recent research articles on subjects including, but not limited to nutrition, rehabilitation, health promotion, exercise physiology and sport medicine will be addressed.

EXS 630 Special Topics (3). Seminar for graduate students relating to a current topic in the fields of exercise science and recreation/leisure studies. May be repeated once for credit. (Same as REC 630.)

EXS 640 Techniques of Research in Exercise and Leisure Studies (3). Course is designed to familiarize the student with the various procedures involved in conducting different types of research common in exercise science and recreation/leisure studies. This class builds on previously learned techniques in EXS/REC 609. Students are guided through the process of performing research from the design stage through writing of the research report. Prerequisite: EXS 609 or consent of instructor. (Same as REC 640.)

EXS 650 Seminar in Exercise and Leisure Studies (3). A review of current trends and issues related to the areas of exercise and leisure management. (Same as REC 650.)

Family and Consumer Studies (FCS)

EXS 660 Advanced Sport and Exercise Psychology (3). An advanced study of behavior as it relates to sport and exercise. The course will include examination of applied sport psychology intervention programs, assessment techniques of sport and exercise behavior, and psychological skills training programs.

EXS 665 Biomechanical Analysis of Sport (3). A course designed to analyze sport and physical activity from a biomechanical perspective.

EXS 680 Independent Study in Sport and Exercise Psychology (1-3). Prerequisite: permission of the chair of the department or departmental graduate coordinator.

EXS 698 Thesis (3).

EXS 699 Thesis (3).

FAMILY AND CONSUMER STUDIES (FCS)

FCS 501 Problems in Family and Consumer Studies (1-3). This course is designed to permit special study in selected areas of family and consumer studies. May be repeated for a maximum of six credits.

FCS 507 Internship in Early Childhood Programs (3). Demonstration by students in assuming different professional roles in a nursery school, day care center, or Head Start Program, or other early childhood programs. Practicum supervision in an early childhood program.

FCS 511 Readings in Family and Consumer Studies Topics (1-3). Directed readings of individualized professional family and consumer studies topics. Critique of readings and oral presentation.

FCS 520 Human Relations in Child Studies Programs (3). Study of ways to improve human relationships in early childhood programs. Appraising materials and procedures for promoting better home-school relations. Three lecture hours per week.

FCS 522 Workshop in Child Studies (2-3). Study of topical content in a workshop setting.

FCS 525 Advanced Child Development Programs (3). In-depth study of theories of child development and an examination of current problems and critical issues. Lecture, three hours.

FCS 527 Parenting (3). Principles and theoretical perspectives on the act of parenting. Emphasis on parent-child relationships, establishing and maintaining a nurturing relationship between parents and children, and parent-child communication. Current issues affecting parenting are also studied. Lecture, three hours.

FCS 536 Research Procedures for Family and Consumer Studies (3). A study of quantitative and qualitative research procedures and techniques utilized in family and consumer science professional practice. Reviewing literature, selecting and formulating a research problem, planning method-

Family and Consumer Studies (FCS)

ology, interpreting data, and making conclusions concerning research are studied.

FCS 614 Family Relations and Child Development (3). Problems of the modern family which influence our present-day living; analysis of recent research findings and their implications for family living.

FCS 661 Methods of Teaching Family and Consumer Sciences (3). Development of planning and organizational teaching skills, use of resource materials, and simulated teaching experience. Principles of learning, curriculum planning, and styles of management will be covered. Student may not receive credit for FCS 661 and FCS 461 or 462.

FINANCE (FIN)

FIN 505 Internship in Finance (1-3). Open to junior and senior finance majors. These students, upon approval of the finance faculty, are placed with cooperating firms to receive on-the-job training in finance. Work experience supervised by faculty; written reports are required. Graded pass/fail. Prerequisite: permission of department chair.

FIN 520 Risk Management (3). A study of appropriate risk management techniques for the contemporary financial and nonfinancial corporation. Although a wide variety of techniques are covered, the focus is upon use of hedging strategies to reduce risk. Prerequisite: FIN 330.

FIN 522 Portfolio Management and Theory (3). An introduction to portfolio management. Emphasis on modern techniques of security selection which are directed toward risk diversification and portfolio balance. Students manage a real portfolio by basing buy/sell decisions on current market data. Computer programs are used in the portfolio selection and evaluation process. Prerequisite: FIN 330.

FIN 533 Security Analysis (3). A study of the stock and bond markets using a pragmatic approach. Evaluation methods, economic relationships and market strategies are emphasized. A "hands-on" type of class. Prerequisite: FIN 333 with a minimum grade of C.

FIN 534 Life Insurance (3). A study of the nature and functions of life insurance, with particular attention to policy forms and provisions, reserve and investment problems, company organization, legal aspects, taxation and the application of life insurance to personal and business needs. Prerequisite: FIN 331 with a minimum grade of C.

FIN 535 Property and Casualty Insurance (3). A study of the nature and functions of property and casualty insurance. Special attention is given to the services performed, contracts and benefits of fire and automobile insurance. Prerequisite: FIN 331 with a minimum grade of C.

FIN 537 Commercial Banking (3). Problems of commercial banking from the point of view of bank management are studied. Topics covered

are asset reserves, credit analysis, investment policies, equity reserves and capital account. Prerequisite: FIN 330.

FIN 595 Special Problems (1-3). Research by students in fields of special interest. Includes project research studies and intensive reading programs, accompanied by conferences with professors in fields involved. Prerequisite: consent of instructor.

FIN 602 Corporate Finance (3). Practical application of the finance function in a company with specific emphasis on maximizing the value of the firm for its shareholders. Financial decision-making integrated with the theory of capital markets. Particular attention is given to the areas of investment, capital structure, short-term financing, and working capital management. Prerequisite: FIN 330 with a minimum grade of C.

FIN 612 Capital Investment Analysis (3). An in-depth examination of long-term investment and financing decisions. The material to be covered will include financial analysis and forecasting, the theories and techniques employed in capital investment analyses and capital structure decisions, and the sources and uses of long-term financing. Prerequisite: FIN 330 or equivalent.

FIN 621 Financial Models (3). Applications of financial models on the microcomputer, leading to the solution of financial problems. Emphasis is placed on (1) building and using models developed in electronic worksheets, and (2) construction of financial systems using database software. Prerequisite: FIN 330 or equivalent.

FIN 632 Investment Management (3). Study and analysis of financial investments. Emphasis is upon analysis of common stock and bonds with lesser emphasis on derivative securities as potential investments. Students manage a real portfolio by basing buy/sell decisions on current market data. Not available to students who have taken FIN 533. Prerequisite: FIN 330 with a minimum grade of C.

FIN 633 Analytical Methods in Finance (3). Practical analysis of financial problems in case-oriented format. Financial models will be used to place the data in analytical form to aid the analysis. Emphasis will be placed upon developing logical approaches and methods for problem-solving. Prerequisite: FIN 330 with a minimum grade of C, FIN 602, or consent of instructor.

FIN 634 Financial Markets and Institutions (3). A global perspective of the operation and functions of financial institutions and markets. Major subject areas include various financial markets, financial institutions, regulations, ethics, and future trends. Prerequisite: FIN 602 or equivalent.

FIN 644 Graduate Cooperative Education (3). May be repeated for a maximum of six credits. Cannot be used to meet M.B.A., M.P.A. or M.S. degree requirements. Graded pass/fail. Prerequisite: permission of chair.

FIN 650 Derivative Securities (3). A study in the understanding of current derivative securities and

the markets in which they are traded; the design and testing of innovative derivative securities. Prerequisite: FIN 330 or equivalent and MAT 220 or equivalent.

FIN 661 International Financial Management (3). Applies theories of managerial and international finance to the problems of international financial management. Topics include investment analysis, financing decisions, identifying, measuring and managing foreign exchange and interest rate risk, financing of trade, and financial control of international operations. Prerequisite: FIN 330.

FIN 695 Special Problems (1-3). Research by graduate students in fields of special interests. Includes project research studies and intensive reading programs, accompanied by conferences with professors in field involved. Prerequisites: 12 hours of graduate credit in business and consent of instructor.

FIN 698 Thesis (3).

FIN 699 Thesis (3).

FRENCH (FRE)

FRE 501 Middle Ages Literature (3). A study of representative works of French literature dating from 1095 to 1600. Prerequisite: junior standing or above, FRE 301 or 331 or consent of instructor.

FRE 503 Seventeenth- and Eighteenth-Century Literature (3). A study of representative literary works from the period 1600 to 1795. Prerequisite: junior standing or above, FRE 301 or 331 or consent of instructor.

FRE 505 Nineteenth-Century Literature (3). A study of representative literary works published between 1800 and 1899. Prerequisite: junior standing or above, FRE 301 or 331 or consent of instructor.

FRE 507 Twentieth-Century Literature (3). A study of representative literary works published since 1900. Prerequisite: junior standing or above, FRE 301 or 331 or consent of instructor.

FRE 521 Topics in French Literature (3). Course content at the discretion of the instructor. Prerequisite: junior standing or above, FRE 301 or 331 or consent of instructor.

FRE 531 Advanced Grammar (3). A comparative study of the grammatical structures of French and English. Prerequisite: junior standing or above, FRE 301 or 331 or consent of instructor.

FRE 532 Phonetics (3). Introduction to linguistic terminology and principles of phonology with intensive individual diagnosis and practice of the French phonological system. Includes study and practice of the International Phonetic Alphabet. Prerequisite: junior standing or above, FRE 301 or 331 or consent of instructor.

FRE 551 Directed Study I (1-3). Independent work in areas of language, culture or literature, designed to meet needs and interests of individual students. Prerequisite: junior standing or above, FRE 301 or 331 or consent of instructor.

FRE 552 Directed Study II (1-3). Prerequisite: junior standing or above, FRE 301 or 331 or consent of instructor.

FRE 555 Study Abroad (3-9). Approved programs of travel and study in French-speaking countries. Repeatable up to nine hours. Prerequisite: junior standing or above, FRE 301 or 331 or consent of instructor.

GRAPHIC COMMUNICATIONS MANAGEMENT (GCM)

GCM 552 Survey of Graphic Communication Management (3). Exploratory experiences in graphic communications management for those with no prior experience in the field. Lecture and laboratory. Prerequisite: senior standing or consent of chair.

GCM 554 Printing Production and Manufacturing Management (3). Reviews the current practice and theoretical approaches of printing manufacturing; forecasting, quality control, purchasing and finance, equipment selection, plant layout, environmental, and human relations considerations. Prerequisite: nine hours of GCM.

GCM 556 Communications Sales Management (3). Methods and techniques essential to sales and marketing. Includes sales and marketing processes, qualities of sales personnel, submitting proposals, assessing the competition, customer relations, developing new clients, and servicing accounts. Prerequisite: nine hours of GCM or consent of instructor.

GCM 558 Trends in Graphic Communication (3). A study of management trends, technical advances, and problems as they pertain to the future of the communications industry. The course will include report writing, verbal presentations and a field experience. Prerequisite: senior standing or consent of instructor.

GCM 560 Plant Equipment Layout and Purchasing (3). Procedures for planning, equipment and printing plant operation are studied, as well as purchasing supplies, understanding local, state and federal codes, and environmental regulations. Prerequisite: nine hours of GCM.

GCM 570 Practicum I (4). Cooperative work experience in the printing industry. Recommended for summer between sophomore and junior years. Prerequisite: consent of instructor.

GCM 571 Problems in Technology (3). Individual study and research pertaining to special problems in graphic arts technology. Prerequisite: approval of problem before registering for the course.

GCM 572 Practicum II (4). Cooperative work experience in the printing industry. Recommended

for summer between junior and senior years. Prerequisite: consent of instructor.

GCM 578 Workshop in Technology (3). Workshops on topics pertinent to graphic arts or printing management. May be repeated for additional credit.

GCM 644 Graduate Cooperative Education (3). May be repeated to a maximum of six credits. Graded pass/fail. Prerequisite: permission of chair.

GCM 651 Advanced Printing Press Operation (3). Includes all aspects of printing production using any of the conventional press systems. Lecture and laboratory. Prerequisite: GCM 151.

GCM 697 Research in Technology (3). Independent study under the guidance of a supervising faculty member in a problem related to industry and technology as selected by the student.

GCM 698 Thesis (3).

GCM 699 Thesis (3).

GERMAN (GER)

GER 501 Literature Before 1600 (3). A study of major works chosen to present prominent themes and important literary developments within the period. Prerequisite: junior standing or above, GER 301 or 331 or consent of instructor.

GER 503 Seventeenth- and Eighteenth-Century Literature (3). A study of major works chosen to present prominent themes and important literary developments within the period. Representative authors such as Goethe, Schiller, Novalis and Kleist will be treated. Prerequisite: junior standing or above, GER 301 or 331 or consent of instructor.

GER 505 Nineteenth-Century German Literature (3). A study of literary developments during the era of the industrial revolution and political reform in Germany. Works by Buchner, Heine and representative authors of Poetic Realism and Naturalism will be treated with secondary emphasis placed on the emergence of the *Biedermeier* tradition. Prerequisite: junior standing or above, GER 301 or 331 or consent of instructor.

GER 507 Twentieth-Century Literature (3). A study of the literature and the policies affecting literature during the Weimar Republic, the Third Reich, Post-War Literature and the *Gruppe 47*, and contemporary developments. Prerequisite: junior standing or above, GER 301 or 331 or consent of instructor.

GER 521 Topics in German Literature (3). An in-depth course treating a topic in German literature. Selected according to the needs and interests of the students. Prerequisite: junior standing or above, GER 301 or 331 or consent of instructor.

GER 531 Advanced Grammar (3). A specialized study contrasting German and English

grammatical structures and usage. Prerequisite: junior standing or above, GER 301 or 331 or consent of instructor.

GER 532 Phonetics (3). Contrastive study of German and English phonology with individual practice designed to improve pronunciation. Prerequisite: junior standing or above, GER 301 or 331 or consent of instructor.

GER 551 Directed Study I (1-3). Independent work in areas of language, culture or literature, designed to meet needs and interests of individual students. Prerequisite: junior standing or above, GER 301 or 331 or consent of instructor.

GER 552 Directed Study II (1-3). Prerequisite: junior standing or above, GER 301 or 331 or consent of instructor.

GER 555 Study Abroad (3-9). Credit given for approved projects of study in a German-speaking country. Repeatable up to nine hours. Prerequisite: junior standing or above, GER 301 or 331 or consent of instructor.

GEOSCIENCES (GSC)

GSC 500 Recreation Geography and Planning (3). Practical application of problem-solving techniques and processes to recreational management and planning. Focus placed on site planning and development. (Same as PLN 500.)

GSC 507 Land Use Planning (3). Analyze the principles and techniques utilized in the planning process. Emphasis is placed on the practical aspects of planning: needs, problems and proposed solutions. (Same as PLN 507.)

GSC 510 Geophysics (3). Practical aspects of applied and environmental geophysics including gravity, magnetics, electricity, electromagnetic theory and practice. Prerequisite: MAT 150 or equivalent.

GSC 512 Remote Sensing (4). Emphasis will be placed upon the fundamentals of image interpretation using a wide variety of image types both airborne and spaceborne. The application of remotely sensed data and techniques in many areas such as geoscience, agriculture, forestry and planning will be emphasized. Three hours lecture and two hours of laboratory per week.

GSC 513 Photogeology (3). The application of remote sensing technology in the field of geology. Major area of concentration will be the manual interpretation of black and white imagery. Also included will be other imagery types, sensors and digital image processing. Prerequisite: GSC 336 or equivalent or consent of instructor.

GSC 515 Geochemistry (3). The chemistry of the geologic environment including the distribution of chemical elements in the earth and natural waters, the nature and causes of chemical processes, and the application of chemical laws, methods and data to the solution of geologic problems. Emphasis is on the low-temperature geochemistry as it pertains to sedimentation, weathering and groundwater quality.

Geosciences (GSC)

GSC 520 Geography of Kentucky (3). A survey of the topography, soils, climate, industries, commerce and population in Kentucky with emphasis upon the interrelationships between these various phenomena.

GSC 521 Geographic Information Systems (4). Techniques course that introduces digital georeferenced information systems, including data capture, editing and encoding techniques, data storage structures, database management systems, data analysis and model development, and information display methods. (Same as PLN 521.)

GSC 522 Digital Cartography (3). The map as a communication system. Special individual projects dealing with cartographic design and the preparation of maps for publications. Practical experience with computer mapping of spatial data. Prerequisite: GSC 305, or equivalent, or consent of instructor.

GSC 523 Problems in Urban Geography and Urban Planning (3). Theories, techniques and research in urban geography and planning. Focus placed on the designs and strategies addressing present-day urban problems. (Same as PLN 523.)

GSC 524 Conservation and Environmental Geosciences (3). Course will study human population growth and associated resource requirements considering the physical makeup and history of the earth. Natural resource inventory, protection of the environment, geologic hazards and other conservation related topics will be discussed. Use of Geographic Information Systems (GIS) will be emphasized.

GSC 528 History and Philosophy of Geosciences (3). The development of knowledge in the geosciences and the status of the profession as expressed in the writings of the past and present by geoscientists and other individuals in related fields. Emphasis will be placed upon current trends in the geosciences.

GSC 531 Geology for Teachers (4). An introduction of the materials of the earth and the processes to modify them to form our landscapes and create our physical environment. Laboratory is integrated into the classroom lectures and will include study and identification of rocks and minerals and the interpretation of geological maps and photos. The literature of geology teaching will be reviewed with an emphasis on exercises that can be used in the teacher's classroom or laboratory.

GSC 533 Paleocology (3). The study of the formation of the first ecologies with the origin of life on earth, and the continuing changes in the earth's ecologies through time. Classic paleoecological communities are examined, including Precambrian, Ordovician, Cretaceous and Pleistocene ecosystems. Specific attention paid to the interaction and co-evolution of the organic and inorganic environments. Prerequisites: GSC 101, BIO 101, or equivalent.

GSC 534 Invertebrate Paleontology (4). The classification, morphology and paleontological significance of fossil invertebrates. Three lectures

and two hours of laboratory per week. Prerequisite: GSC 102 or equivalent.

GSC 535 Watershed Ecology (3). The study of the movement of water through the environment and its relationship to biotic systems. Areas emphasized include the hydrologic cycle and its influence on groundwater, lotic and lentic systems; the effect of water on plant and animal communities; and the influence of human activity on watershed structure and function. Prerequisite: BIO 330 or consent of instructor. (Same as BIO 535.)

GSC 556 Remote Sensing Applications in Archaeology (3). Course provides an overview of aerial and terrestrial remote sensing techniques including applications of these methods to archaeological research. Emphasis will be placed on terrestrial geophysical survey methods with hands on training in the use of instruments such as ground penetrating radar and magnetic gradiometer. Weekend field trip to local archaeological sites are required. Prerequisites: ARC 300, GSC 202, GSC 512, or permission of instructor. (Same as ARC 556.)

GSC 560 Hydrogeology (3). Knowledge and experience in the use of hydrologic and erosion models. State-of-the-art surface water, ground water and erosion models will be studied, along with hands-on training in the use of digital computers for applying these models to real-world geological situations. Prerequisite: MAT 150 or equivalent or consent of instructor.

GSC 561 Precision GIS/GPS Applications (1-3). An introduction to Geographic Information Systems (GIS) and Global Positioning System (GPS) applications in natural resources, business and land management. The course is divided into three distinct parts: 1) Introduction to GIS/GPS applications, 2) Business applications, and 3) Precision land management applications. Students must take the introduction phase before continuing with the other two parts. Variable credit hours: 1 credit for Part 1, 2 credits for Part 1 and 2 or 1 and 3, or 3 credits for Parts 1, 2, and 3. Course may be repeated for a maximum of three credit hours.

GSC 565 Biogeochemistry (3). Survey and discussion of the scientific literature on global cycles of carbon, nitrogen, phosphorus and man-made chemicals with special emphasis on the biogeochemical and ecological processes that affect terrestrial and aquatic ecosystems. The course will focus on interdisciplinary themes that incorporate new research results from the fields of biology, chemistry, and geosciences. Prerequisite: junior or higher standing in biology, chemistry or geosciences. (Same as BIO/CHE 565.)

GSC 570 Computer Applications in Geosciences (3). Introduction to the use of computers in geoscientific problem-solving and data processing. Students will utilize existing programs and will develop original routines. Prerequisites: GSC 521 or GSC 522 and CSC 101.

GSC 575 Field Vertebrate Paleontology (4). The study of vertebrate fossils in both field and lab, including collection, processing and identification. Field work may include trips throughout the con-

tinental United States and occasionally overseas. (Usually taught during summer.) Prerequisites: completion of two semesters of undergraduate laboratory science and upper-class or graduate standing. (Same as BIO 575.)

GSC 580 Advanced Geographic Information Systems (3). A project-based course for students seeking greater understanding of GIS theory, technology, and applications. Students will apply GIS to their research interests and gain hands-on experience through using ArcGIS software package. By the end of the class, students will be able to identify the appropriate methods for solving particular research problems, be familiar with current research directions in spatial analysis, and demonstrate their ability to complete a research project. Prerequisite: GSC 521 or consent of instructor.

GSC 591 Special Problems (1). This course is designed for students who have an aptitude for research in the area of geosciences. Prerequisite: consent of instructor. (May be repeated one time.)

GSC 592 Special Problems (2). This course is designed for students who have an aptitude for research in the area of geosciences. Prerequisite: consent of instructor. (May be repeated one time.)

GSC 593 Special Problems (3). This course is designed for students who have an aptitude for research in the area of geosciences. Prerequisite: consent of instructor. (May be repeated one time.)

GSC 601 Graduate Study in the Geosciences (1). Course will familiarize incoming graduate students with various aspects of graduate education at the university and in the department. Topics will include requirements of the Graduate Office and the department, utilization of library, other campus, and department resources, and an introduction to research methods, instrumentation, types of data and software utilized in the geosciences. The course will be team-taught. Prerequisite: admission to the graduate program in geosciences.

GSC 619 Seminar in Research Techniques (3). Introduces graduate students to the methods and techniques of research in geosciences. Focus is on utilizing modern techniques of problem-solving employing database management systems, digital image processing/remote sensing, geographic information systems, global positioning systems, computer mapping and programming language.

GSC 640 Advanced Remote Sensing (3). The principles associated with the digital processing of remotely sensed imagery. Image enhancement techniques, quantitative accuracy evaluation, unsupervised and supervised, will be stressed. Prerequisite: GSC 512 or equivalent or consent of instructor.

GSC 641 Digital Image Processing Research (3). Application of digital image processing to remotely sensed and other diverse data; hands-on experience using PC and UNIX-based image

processing software, such as ENVI and ERDAS Imagine; data conversions and other processing; simple to complex algorithm development/application using a programming language and/or an image processing software. Prerequisite: GSC 640 or equivalent or consent of instructor.

GSC 644 Graduate Cooperative Education (3). May be repeated to a maximum of six credits. Graded pass/fail.

GSC 660 Spatial Analysis Techniques (3). Introduces students to spatial analysis and spatial statistical techniques. "Hands-on" experience with software packages and associated algorithms is emphasized. Prerequisites: GSC 640 and CSC 136, or equivalent, or consent of instructor.

GSC 665 Physical/Chemical Limnology (3). This course will consider important physical and chemical processes in lakes and reservoirs. The focus of these processes is their relation to biological processes and their importance to understanding aquatic ecosystem dynamics. Physical processes to be discussed include heat, light, water movement and thermal structure in lakes. The chemical cycles of carbon, nitrogen, phosphorus and oxygen will be considered in detail. A few intensively studied lakes will serve as models for integrating the various processes. Prerequisite: Graduate standing and consent of instructor.

GSC 691 Special Problems (1). (May be repeated one time.)

GSC 692 Special Problems (2). (May be repeated one time.)

GSC 693 Special Problems (3). (May be repeated one time.)

GSC 696 Understanding Scientific Communication (2). This course concentrates on the methods for preparation and presentation of scientific paper and oral communications. Students will utilize a data set to produce 1) a publication quality manuscript, 2) a scientific meeting quality poster, and 3) a 15 minute presentation such as would be given at a scientific meeting. Topics covered include abstracts, nature of scientific writing, structure and organization of scientific publication. The course is required of all biological sciences graduate students in their first spring semester of residence and is open to all other graduate students with permission of instructor. One, two-hour course meeting per week. (Same as BIO 696.)

GSC 698 Thesis Research (3).

GSC 699 Thesis Research (3).

GERONTOLOGY

(GTY)

GTY 520 Leisure and Aging (3). Introduction to the physiological, sexual and recreational aspects of aging in American society; exploration of the role of recreation with the aging; emphasis on planning leisure programs with the elderly. Students taking this course for graduate credit

will be required to do additional work. (Same as REC/HEA/PHE 520.)

GTY 521 Issues in Social Gerontology (3). A study of theory and research on aging, policies and programs related to nutrition, retirement, health and housing of elderly. Prerequisite: SOC/GTY 341 or consent of instructor. (Same as SOC 521.)

GTY 596 Minority Elderly (3). This course focuses on the minority elderly including racial, ethnic and lower income groups. Applicable concepts and theories in social gerontology will also be covered. Prerequisite: nine hours of anthropology, gerontology or sociology, or consent of instructor. (Same as ANT 596.)

GUIDANCE AND COUNSELING

(GUI)

GUI 500 Interpersonal Relations in the Classroom (3). A course designed to assist the pre-service individual in developing interpersonal communication skills appropriate to the teaching/learning process. The course will provide a series of training experiences, through interactions, designed to develop skills in the following areas: (1) attending and responding behaviors (verbal and nonverbal), (2) communication of empathic understanding, respect and warmth, (3) the effect of communication on understanding self and others, (4) effective communications in discipline, (5) establishing comfortable classroom climates for instruction.

GUI 584 Problems (3). This course is designed for upper level undergraduate students who want to work on special problems according to individual needs. Staff supervision should be arranged prior to enrollment. Approval of advisor required. May be repeated for credit up to six hours.

GUI 592 Group Processes (3). A study of the history and characteristics of group processes and structure as well as issues in leadership style and development of a model in small group interaction. May not be used toward school counseling certification.

GUI 615 Behavioral Assessment and Intervention (3). To examine, in theory and practice, issues in behavioral management, which affect behavior change within various school/clinical settings, and to learn techniques applicable to the process of behavior in change.

GUI 616 Marital and Family Counseling (3). A course designed to examine historical and theoretical foundations of family and marital counseling as well as theoretical models and techniques used in the counseling process.

GUI 618 Introduction to Community Counseling (3). A course designed to survey the foundations of community and agency mental health counseling. Topics such as history and philosophy of mental health counseling, administration and supervision of mental health systems, ethical standards and legal aspects, assessment and program development, education and consultation practices, as well as case management and

treatment services.

GUI 619 Laboratory in Guidance and Counseling (3). A comprehensive study and skill acquisition of specific models of counseling will be the central focus of the course. Must be taken in the first nine hours of the program. Students must complete this course with a grade of B or better in order to continue in the program.

GUI 620 Practicum in Guidance and Counseling (3). Closely supervised practice in guidance and counseling under staff supervision in selected educational and agency settings. Arrangements for the practicum must be made a semester in advance. Also, the student must be admitted to the program. Students must successfully complete GUI 620 with a grade of A or B before being allowed to continue in the program. Prerequisites: GUI 619 and 692; School Counseling - GUI 637; Community Counseling - GUI 618; and 18 other program credit hours.

GUI 622 Practicum in Psychometrics (3). Closely supervised practice in psychometrics under staff supervision in selected educational and agency settings. Arrangements for the practicum must be made a semester in advance. Also, the student must be admitted to the program.

GUI 625 Legal and Ethical Issues (3). This course will present the legal and ethical ramifications that being a counselor in today's complex society demands. An in-depth examination of current contemporary issues will highlight the course.

GUI 635 Developmental Processes (3). A detailed study of the life-span development of the individual in terms of human growth and development, foundations and dynamics of human behavior, and personality, and learning theories and their application.

GUI 637 Effective Practice in School Counseling (3). This course will focus on effective school counseling practices across the elementary, middle and high school grades with emphasis on developmental concerns. It will utilize the Kentucky Counselor Standards and the American School Counselor's National Model and National Standards to enhance academic, career, and personal/social development. Specific counselor skills of leadership, teaming and collaboration, counseling and data utilization will be taught. This course will consist of lectures, discussions, group work and skills practice. Prerequisite: GUI 687.

GUI 660 Developing Human Potential Seminar (3). A course designed to familiarize students with those factors which prevent individuals from reaching their full personal, social and professional potential. Emphasis will be on developing student ability to recognize these factors and the skills for positively effecting individual potential.

GUI 670 Multicultural Issues in Human Services (3). The purpose of this course is to focus on the role that cultural environment plays in the lives of people and the implications of that role for helping professions and the helping process. There will be an overview of the different microcultures to which individuals belong and implications for

Guidance (GUI)

the delivery of services. It is expected that the student will learn how to use the concept of pluralism in the provision of services to multicultural individuals and populations.

GUI 676 Individual Appraisal and Diagnosis (3). Course is designed to prepare students in the knowledge and understanding of human behavior and methods in assessment and diagnosis of personality and mental status.

GUI 677 Psycho-Educational Assessment (3). Theory and assessment of educational disabilities, and the supervised use of formal and informal diagnostic methods, such as observations, interviews, biographical information, academic tests and behavioral assessments. This course is designed for school psychology students and school counselors seeking the Individual Intelligence Assessment Endorsement. Prerequisites: GUI 690 and consent of instructor.

GUI 678 Theories of Vocational Development (3). A survey and critical analysis of literature and research regarding effects of sequence of work activity, vocational exploration and career development. Prerequisite: GUI 636 or 686.

GUI 679 Advanced Practicum: Guidance and Counseling (3). Closely supervised practice in guidance and counseling under staff supervision in selected educational and agency settings. Open only to those possessing a Provisional Guidance Certificate or its equivalent. Must be or have been a practicing counselor.

GUI 683 Tests and Measurements (3). The selection, administration and uses of psycho-educational tests are discussed with emphasis on application in various settings, legal/ethical issues, and measurement concepts. Usually taken within first nine hours. (Same as PSY 683.)

GUI 684 Problems (3). This course is designed for advanced graduate students who want to work on special problems in guidance and counseling according to individual needs. Staff supervision should be arranged prior to enrollment. Approval of instructor required. May be repeated for credit.

GUI 685 Guidance in Elementary Schools (3). This course will examine the role and functions of an elementary counselor. Specifically it will cover counseling children — individually and in groups, consulting with teachers, school staff and parents, child study procedures, and coordinating assessment data with other services.

GUI 686 Educational and Vocational Guidance (3). A survey of the theories, principles, practices, and techniques of career development over the lifespan.

GUI 687 Introduction to Guidance (3). An introductory survey course in the philosophy, principles and techniques of guidance, with emphasis on the organization and administration of guidance services in school and non-school settings.

GUI 688 Introduction to School Psychology (3). This course provides an overview and integrates theory and practice of all areas of school

psychology. This will include historical evolution of school psychology, professional standards, legal and ethical issues and the roles and functions of the school psychologist.

GUI 689 Individual Testing (3). Supervised practice in the administration and interpretation of a variety of individual cognitive tests such as the WJ-III Cognitive and WISC-IV. This course is designed for individuals in the school counseling, Individual Intelligence Assessment endorsement, and school psychology programs. Prerequisites: GUI 683 and consent of instructor.

GUI 690 Advanced Individual Testing (3). Supervised practice in the administration and interpretation of a variety of individual cognitive, memory, and adaptive tests such as the KABC-II, WAIS-III, UNIT, SIB-R, and BASC-II. This class is designed solely for school psychology students and those school counselors seeking the Individual Intelligence Assessment Endorsement. Prerequisites: GUI 689 and consent of instructor.

GUI 692 Group Dynamics in Counseling (3). An experiential course in the dynamics of group behavior. The student will participate in an encounter-type group experience as well as being introduced to theory and techniques of group counseling. In addition, group guidance procedures are emphasized to include meaning, purposes, scope, and methods. Strongly recommended to be taken within the first nine hours of course work.

GUI 693 Theories of Counseling (3). Critical analysis and evaluation of leading theories of counseling and their implications for practice.

GUI 694 Advanced Counseling Techniques (3). An advanced study in individual counseling procedures and technique/applications. Prerequisite: GUI 619.

GUI 695 Advanced Group Counseling (3). An extension of GUI 692. An advanced study in group counseling, research and technique application. This course is designed for individuals actively planning to lead counseling groups. Prerequisite: GUI 692.

GUI 696 Advanced Research (3). Emphasis on individual research for advanced students in guidance and counseling. Open only to those students possessing a Provisional Guidance Certificate or its equivalent. Prerequisites: approval of advisor and consent of instructor.

GUI 697 Organization and Administration of Personnel Services (3). The selection, organization and implementation of personnel services. Analysis of programs, staffing and relationships of programs will be emphasized.

GUI 698 Thesis (3). Designed to enable the student to choose a thesis topic with the consent of the student's thesis faculty director, implement the topic research design and produce a master's degree thesis suitable for publication.

GUI 699 Thesis (3). A continuation of GUI 698.

GUI 792 Internship in School Psychology (6). Designed to provide an intensive training/work experience which will consist of a minimum of 600 clock hours in a school setting. Close supervision will be provided by university faculty and on-site professionals as the intern applies the knowledge and skills acquired in the program.

GUI 793 Internship in School Psychology (6). A continuation of GUI 792 consisting of a minimum of 600 clock hours in a school setting for a total of 1200 hours of internship training/supervision.

GUI 794 Internship in Community and Agency Counseling (6). Designed to provide an intensive on-the-job experience conducted in a setting as similar as possible to that in which the intern subsequently intends to seek employment. Close supervision will be provided by faculty and on-site professionals, and interns are expected to apply the knowledge and skills previously acquired in their program. Prerequisite: GUI 620 with a grade of A or B.

GUI 795 Internship in Community and Agency Counseling (6). A continuation of GUI 794, culminating in a minimum of 600 contact hours at the internship setting for the total internship experience.

GUI 798 Specialty Study (3). This course is designed to enable the student, with the supervision of his/her graduate faculty committee, to select a problem directly related to the student's area of concentration, survey the research literature, collect research data and prepare to write the research paper.

GUI 799 Specialty Study (3). A continuation of GUI 798, culminating in a report suitable for publication.

HEALTH CARE ADMINISTRATION (HCA)

HCA 525 Case Management: Theory and Practice (3). This course will address the theory and practice of effective case management and the skills necessary to assess the client situation and to optimize client functioning. This course will focus on a diverse population of vulnerable clients across various practice settings. The settings emphasized include medical/health, educational, psychiatric and services to the elderly. Policy issues will be addressed, as they relate to advocacy, service planning, and program design. Prerequisite: consent of instructor. (Same as SWK 525)

HCA 602 Clinical Management Models for Health and Human Services (3). Systematic design and analysis of the roles of health service managers and clinicians in the delivery of services for managed care is addressed. The course will analyze health care delivery from an integrated management-clinician perspective. Attention will focus on patient care and the use of clinical algorithms and critical pathways in health care delivery.

HCA 668 Health Education in Managed Care and Human Services (3). Facilitating treatment adherence in managed care is addressed through

models of patient health education. Course topics will address treatment adherence, adherence enforcement procedures and the integration of models of education in human services delivery.

HCA 674 Health Counseling and Managed Care (3). Examination of the process of health-related counseling and communication with patients is explored with specific application to acute and chronic conditions. Various models of counseling in the health care setting and the use of prevention interventions will be discussed.

HCA 680 Advanced Topics in Stress and Health Care Delivery (3). Selected topics in assessing and treating stress related disorders in health care delivery are examined. Emphasis on diagnosis, treatment and prevention interventions is explored. Current measures used in assessment along with self-management skills for patients are the focus of this course.

**HEALTH
(HEA)**

HEA 510 Sociology of Sport and Exercise (3). A critical study of the sociological factors affecting sport, performance, and exercise. Students will learn about the social, cultural, environmental, and racial dynamics involved in sport and exercise. This course will also study the effects sport and exercise have on the social structure of society. (Same as EXS/REC 510.)

HEA 511 Epidemiology (3). This course is designed to examine the principles and practices in the cause, prevention and control of diseases in various community settings. Topics covered include an introduction to epidemiological terminology; the measurement of morbidity, mortality and fertility; descriptive and analytic epidemiology; screening; infectious disease; and occupational epidemiology.

HEA 520 Leisure and Aging (3). Introduction to the physiological, sexual and recreational aspects of aging in American society; exploration of the role of recreation with the aging; emphasis on planning leisure programs with the elderly. Students taking this course for graduate credit will be required to do additional work. (Same as EXS/GTY/REC 520.)

HEA 575 Human Sexuality II (3). This course is an advanced study of issues of sexuality including sexual exploitation, sexual victimization, sexual abuse, sexual harassment, altered body image and sexual function, family structures, the law and sexuality issues, and new research in sexual health. Students taking this course for graduate credit will be required to do additional work. Prerequisites: HEA 500 or equivalent.

**HISTORY
(HIS)**

HIS 500 Comparative History Topics (3). This course is designed to provide specialized studies of topics (such as racism, industrialism, nationalism, and revolution) that cross national, class, and chronological boundaries. Topics offered will vary with interests of students and instructors.

May be repeated for credit with permission of chair and instructor.

HIS 590 Directed Studies (3). Individualized instruction for the exceptional student. Prerequisite: permission of department chair.

HIS 599 Historic Interpretation Internship (3). This course will provide on-the-job training in historical interpretation for museums, public or private agencies, and historic sites. Each student will be placed in an internship (generally for 12 weeks in the summer) in which he or she will work in an interpretative capacity and conduct a major research project related to the historic interpretation programs of the agency. The student will present the results of this research in a formal paper to a designated advisor in the Department of History. This course will count as a part of the major, but no student will be permitted to repeat the course for credit.

HIS 600 Development of Historical Thinking (3). A reading seminar introducing students to historical problems, interpretations, and methodologies, as well as a study of the history of historical scholarship. Students generally must complete a study of a significant historian or historical problem in European, American or non-Western history. Required of first-year history graduate students.

HIS 601 The French Revolution (3). This course has three main areas of emphasis: eighteenth-century French society and culture, the causes of the French Revolution, and the career of Napoleon Bonaparte. The main theme of the course is that the French Revolution represented a watershed in history.

HIS 602 Reading in European History (3). A systematic reading of major works on selected topics in European history from 1500 to the present. May be taken more than once for credit; consult the department chair.

HIS 603 Europe Since 1914 (3). An advanced treatment of the social, political, intellectual, and cultural history of Europe from World War I to the present.

HIS 604 Nineteenth-Century Europe (3). A treatment of the social, political, intellectual, and cultural history of Europe's great age, the period from the French Revolution and Napoleon to the outbreak of the First World War.

HIS 605 Seminar in European History (3). A critical examination of a major topic or selected topics in European history since 1500, using primary sources. Topics vary and the course may be taken more than once for credit; consult the department chair.

HIS 608 The Rise and Fall of the Soviet Union (3). A course beginning with the aftermath of the Revolution of 1905, which also covers the rise of the Soviet Union during World War I, after the abdication of Nicholas II. The Bolshevik Revolution and the Civil War receive close attention, as does the New Economic Policy and

the rise of Stalin in the 1930s. World War II, its impact on the USSR, Stalin's last years, the Cold War, and the decline of the Soviet Union are also covered.

HIS 609 Tudor and Stuart England (3). A study of the molding of the British monarchy and of the eclipse of its authority by the social and political groups which came to dominate Parliament by the seventeenth century.

HIS 610 Modern Britain (3). A study of Britain since the Stuarts, including its age of greatness in the nineteenth century and its decline in the twentieth century. Political and cultural history are emphasized at an advanced, graduate level.

HIS 611 Modern French History, 1789-Present (3). An advanced survey of modern French history from the French Revolution of 1789 to the present. The course will describe and analyze the major events in French history from the time of the Revolution to the twenty-first century, covering social, political, economic, intellectual, and cultural developments of this era.

HIS 612 Modern Germany (3). A review of the political, socioeconomic, and intellectual history of Germany from 1789 to the present, with particular attention to how the history of Germany differed from that of other Western European nations until 1945, and to Germany's new role in Europe since 1945.

HIS 614 Europe from WWI through WWII. Course provides a survey of European history from about 1914 to about 1945. It will describe and analyze the events leading to both World Wars as well as some of the consequences of those wars, delineating the major military figures and the military history of the World Wars.

HIS 615 Women in History (3). This advanced course examines the position and contributions of women in history. Topics will vary, but the major themes and issues relevant to the field of Women's history will be covered, and the main historiographical traditions in the field will be examined.

HIS 621 Studies in U.S. Social History to 1865 (3). This course is a systematic exploration of the social history of the United States from the first settlement by Europeans through the Civil War.

HIS 622 Readings in United States History (3). A systematic reading of major works on selected topics in United States history from colonial times to the present. May be taken more than once for credit; consult the department chair.

HIS 624 United States Foreign Relations Since 1898 (3). An analysis of U.S. relations with other nations since 1898, placing special emphasis on the interplay of ideals and self-interest in foreign relations.

HIS 625 Studies in U.S. Social History Since 1865 (3). A systematic, exploration of the social history of the United States from the end of the Civil War to the present.

History (HIS)

HIS 630 Studies in American Colonial History (3). A systematic exploration of the United States from the first European settlement to the beginning of the American Revolution.

HIS 631 Seminar in United States History to 1865 (3). A critical examination of a major problem in United States history to 1865 using primary sources. Topics vary and the course may be taken more than once for credit; consult the department chair.

HIS 632 Studies in the Era of the American Revolution (3). A systematic exploration of the events that led to the independence of the United States and the establishment of the Constitution.

HIS 633 Seminar in United States History Since 1865 (3). A critical examination of a major problem in United States history since 1865, using primary sources. Topics vary and the course may be taken more than once for credit; consult the department chair.

HIS 634 Civil War and Reconstruction (3). This offering covers the period from 1815 to the presidential election of 1877, with emphasis on political, military, social, and economic conditions as they related to the sectional controversy raging during this part of the nineteenth century.

HIS 635 The Transformation of America 1877 to 1929 (3). An advanced study of the transformation of the United States from an agricultural to a modern industrial nation. Topics included within this broad theme are the rise of big business and labor unions, urbanization, immigration, the closing of the frontier, reform movements, the struggles of blacks and women for equal rights, national politics, and cultural changes.

HIS 636 Recent America (3). A study of the Great Depression, the New Deal, World War II, and the subsequent forces that have shaped contemporary American life. Emphasis is placed on the role of the United States in international relations, the civil rights movement, and domestic economic developments.

HIS 641 History of the Old South (3). This course is an advanced survey of southern history from colonial times through the Civil War. Emphasis will be placed on examining, among other topics, the development and changing characteristics of slavery, southern economic organization in relation to the international colonial system, women in southern society, the South and the Revolutionary War, the South and the development of the U.S. Constitution, the emergence of southern nationalism, and the coming of the Civil War.

HIS 642 History of the New South (3). A survey of southern history from the end of the Civil War to the present, emphasizing the economic, political, social, and cultural aspects of southern history. A major theme will be the juxtaposition of the enduring characteristics of the South with the process of change since World War II.

HIS 646 History of Kentucky (3). The process of political, economic and social evolution in Kentucky is traced from early settlement to the modern area in this graduate course. Geographical influences upon the patterns of Kentucky development, Kentucky's changing role within an expanding union, and the Commonwealth's participation in national movements and events are stressed.

HIS 650 Modern Africa (3). This course considers the causes for European colonization of Africa, the ways in which African resistance and collaboration with Europeans set the stage for the formation of new economies, societies, and policies in Africa, and the process of decolonialization, with an emphasis upon how that process shaped modern African states.

HIS 655 Middle East Since 1800 (3). A study of the Middle East from 1800 to the present with emphasis placed on the historical and political forces that have affected and still influence the region.

HIS 656 The Arab-Israeli Conflict (3). A study of the historical background to the conflict between the state of Israel and the Arab states. This course will examine the origins of Zionism and of Arab nationalism in the 19th century, the phases of Jewish settlement in Palestine, the consequences of the First World War for Zionist and Arab nationalist movements, the British Mandate in Palestine, the Israeli war for independence in 1948, Nasserism, the Suez War, the Six-Day War, the invasion of Lebanon, the *Intifada*, and the possibilities for peace.

HIS 660 History of Race Relations in the U.S. (3). An examination of the social, political, and economic influences upon race relations in the United States from the colonial era to the present. Emphasis will be placed on the sources of change in race relations, the various forms of racial discrimination, and the responses to discrimination in American history.

HIS 663 Readings in Third World History (3). A systematic reading of major works on selected topics in the history of Africa, Asia and Latin America. May be taken more than once for credit; consult the department chair.

HIS 664 Public History: Professional Practice (3). An overview of the field of public history that focuses on the historical development of the field and of Americans' thinking about their history, current professional practice in the various areas of public history, including professional ethics, and the particular skills involved in each of these areas.

HIS 665 Oral History: Project Development (3). A detailed, advanced consideration of the planning, development, and operation of oral history projects for colleges, libraries, museums, corporations, professional organizations, and public schools.

HIS 666 Administration of Historical Organizations (3). A comprehensive consideration of the issues involved in the administration and

management of historical organizations, including museums, archives and special collections libraries, historic preservation organizations, and local historical societies.

HIS 668 Museum Studies: Professional Practice (3). Introduces students to the development of the museum as a cultural institution in the United States and to professional practice regarding the care of collections, the development of exhibits, and other aspects of the profession. Also addresses professional ethical standards in the museum profession. Field trips and a semester project will give students an opportunity to apply what they study.

HIS 669 Historic Preservation: Professional Practice (3). An in-depth exploration of the field of historic preservation, with an emphasis on current professional practice and the application of historical research methods and analytical skills to the field.

HIS 674 China in Revolution (3). A study of the last decade and collapse of the Qing dynasty and China's subsequent search for unity and political form, beginning with the Republic, proclaimed in 1912, and ending with the Tiananmen massacre of 1989 and market reforms.

HIS 675 Modern Japan (3). The cultural and political history of Japan from its unification under the Tokugawa Shogunate to the present are covered at an advanced level. Major topics examined include the Japanese success in meeting the challenge of Western imperialism in the nineteenth century, Japan's own venture into imperialism on the Asian mainland in the twentieth century, and the Japanese economic phoenix in the postwar era.

HIS 676 The World Since 1945 (3). A survey of new directions in modern history, particularly the rise of the USA and the USSR as world powers and the end of the colonial empires of Asia and Africa. The course will discuss the Cold War through international relations, the escalation of wars in Southeast Asia, Africa, Latin America, and the Middle East, as well as rival strategies for economic and cultural development in the post-war world.

HIS 677 Hollywood History (3). A critical, analytical examination of how the past is depicted in films and how films shape popular perceptions of history.

HIS 681 Revolutionary Mexico, 1810-Present (3). An in-depth examination of Mexico's history from 1810 to the present, with emphasis on economic development and diplomacy in the era of Porfiro Diaz (1876-1911), the role of culture and North American influence in the Revolution of 1910-1920, the emergence and seventy-five-year rule of the Party of the Institutional Revolution (PRI), and the post-NAFTA resurgence of revolutionary activity.

HIS 690 Directed Study and Research (3). Supervised independent or group study of a topic or topics in European, United States, or non-Western history. May be taken more than once for credit. Prerequisite: permission of department chair.

HIS 691 Directed Studies in Public History (3). Supervised independent or group study in one or more of the following public history fields: historic preservation, historic interpretation, museum studies, and oral history. May be taken more than once for credit.

HIS 698 Thesis (3).

HIS 699 Thesis (3).

**INDUSTRIAL AND
ENGINEERING TECHNOLOGY
(IET)**

IET 550 Robotic Systems (4). A quantitative analysis of robotic systems that includes kinematics, actuators, drives, adaptive control, off line programming and computer simulation. Emphasizes applications in manufacturing processes. Three hours lecture and three hours laboratory. Prerequisites: EMT 261, 361, ENT 111, 365.

IET 551 Introduction to Electrohydraulic Motion Control (3). An introduction to the integration of the basic principles of hydraulics, electronics, controls and system dynamics as they pertain to electrohydraulic motion control.

IET 571 Problems in Industrial and Engineering Technology (3). Individual study and research pertaining to special problems in industrial and engineering technology. Prerequisite: approval of problem before registering for course.

IET 578 Workshop in Industrial and Engineering Technology (1-4). Workshops on topics pertinent to industrial and engineering technology. May be repeated for additional credit.

IET 584 Engineering Economic Analysis (3). Economic evaluation and financial analysis of engineering alternatives to optimize the engineering decision process. Prerequisite: ENT 393 or consent of instructor.

IET 591 Materials Management (3). The design of an organizational and managerial system to balance the conflicting interests in the company in the considerations of quality, quantity, delivery and cost of materials with the aim of optimizing the return of the materials investment.

IET 592 Production Systems and Computer Integrated Manufacturing (4). Includes a survey of various topics in production, automation and related systems such as flow-line production, numerical control, industrial robots, computer-aided manufacturing, process monitoring, flexible manufacturing systems and computer-integrated manufacturing. Three hours lecture and two hours lab. Prerequisites: ENT 111, EMT 261, 361.

IET 596 Industrial Relations (3). Industrial relations responsibilities, procedures, and applications in job evaluation, wage surveys, union negotiations, hiring employee counseling, and affirmative action awareness. Prerequisite: junior standing.

IET 597 Quality Control (3). Examines the various aspects of quality control from the

viewpoint that product and service quality requires managerial, technological and statistical concepts throughout all the major functions in an organization. Prerequisites: CIS 243 or consent of instructor.

IET 619 Industrial Energy Management (3). A study of energy utilization in manufacturing environments. Through applied engineering principles and case histories, energy conversion systems are analyzed and designed. Remediation and conservation principles are discussed as are energy policies and utility rate structuring and negotiation. Prerequisite: graduate standing.

IET 644 Graduate Cooperative Education (3). May be repeated for a maximum of six credits. Graded pass/fail. Prerequisite: permission of chair.

IET 678 Seminar in Industrial and Engineering Technology (3). The identification and study of current problems, issues and trends in the field of industrial and engineering technology with special emphasis on the philosophical and psychological assumptions underlying these areas.

IET 679 Technical Writings (3). Laboratory experimentation and research, analysis of technical data and the preparation and application of technical reports in industrial-technical fields.

IET 691 Industrial Operations (3). Quantitative analysis for planning, organizing and controlling a production/operations system. Prerequisites: CIS 243, or consent of instructor.

IET 692 Plant Layout and Material Handling (3). A study of the arrangement of physical facilities and material handling to optimize the inter-relationships among operating personnel, material flow, information flow, and the methods required in achieving enterprise objectives efficiently, economically and safely.

IET 693 Systems Management Technology (3). A course dealing with the practical applications of systems management theory to business and industrial situations.

IET 694 Research in Industry, Training and Technical Education (3). A study of techniques and procedures used in designing, conducting, interpreting and evaluating research in industrial, training, and technical education settings. Applications, advantages and limitations of various research methods are studied and explored. (Same as TTE 694)

IET 695 Industrial Supervision (3). An in-depth study of the qualities necessary in order for a frontline supervisor to be a vigorous leader, an effective leader, a source of technical know-how and a deft mediator between policy-setting management and the rank-and-file worker.

IET 696 Teamwork and the Management of Technology (3). A study of how teamwork is used to effectively increase productivity, quality and profits simultaneously in a manufacturing environment. Analysis of historical and current literature shows the evolution from Scientific Management to TQM and ISO-9000 and the

advantages of team problem-solving for complex design/production problems. The fundamentals for an effective teamwork environment redeveloped through a wide variety of books and articles. Methods for implementation of a teamwork system are presented, discussed and evaluated.

IET 697 Research in Industrial and Engineering Technology (3). Independent study under the guidance of a supervising faculty member in a problem area of industrial education as selected by the student. Prerequisites: ADM 630 or AGR 635 or BPA 605 or consent of advisor.

IET 698 Thesis (3).

IET 699 Thesis (3).

**INTERNATIONAL STUDIES
(INT)**

INT 510 International Student Exchange (3-15). Individual study abroad through a Murray State sponsored program as administered by the Institute for International Studies; pre-approval within specific disciplines required; pass/fail. Prerequisite: consent of academic advisor and pre-approval by instructors prior to registration; senior and graduate level.

INT 600 Seminar in Global Studies (1-3). Course is a seminar focusing on selected topics and taught outside the United States. Topics and content will vary with instructor and course location. It may be repeated for credit. Prerequisite: consent of instructor.

**INDUSTRIAL TECHNOLOGY AND DESIGN
(ITD)**

ITD 501 Architectural Drafting and Design-Light Commercial (4). Theory and practice in instrument and computer aided drafting and design for architectural structures. Topics will include the review and evaluation of existing designs, plans and specifications for nonresidential light commercial structures. Structures in the building code classifications of: assembly, business, and mercantile will be included. Program and design architecture will be included. Lecture and laboratory. Prerequisites: ITD 301, ITD 104 AND ITD 401.

ITD 504 Advanced Study in Computer Aided Drafting/Design (4). An advanced course in the theory and application of computer aided systems for the drafting and design field. Lecture and laboratory. Prerequisites: ITD 304 or consent of instructor.

ITD 522 Industrial Plastics (4). Materials and processes used in plastics manufacturing industries; includes mold design and construction. Lecture and laboratory. Prerequisite: ITD 322 or consent of instructor.

ITD 531 Numerical Control/Computer NC Machining Systems (4). A study of automatic manufacturing by NC/CNC. Technical, social and economic aspects of NC/CNC machining systems. Laboratory work in manual and computer-assisted numerical control programming. Setup and operation of machines. Six contact hours.

Industrial Technology and Design (ITD)

ITD 532 Metallurgy (2). Structure, properties, behavior and use of metals. Laboratory analysis and research. Lecture and laboratory.

ITD 533 Technology and Production Tooling (2). Machine setups, tooling and inspection procedures. Lecture and laboratory. Prerequisites: ITD 531 or 532.

ITD 541 Industrial Wood Fabrication (4). Material, equipment, processes and nomenclature of the woods manufacturing industry; emphasis on design and planning for production. A study of both traditional and innovative wood processing techniques. Prerequisite: ITD 341.

ITD 601 Advanced Engineering Drawing (4). Current and emerging theories and practices in the identification of course content and the teaching of projection theory, two- and three-dimensional representation and problem-solving techniques. Lecture and laboratory. Prerequisite: ITD 305 or equivalent.

ITD 602 Technical Illustration (4). Illustration drawing, rendering and creative techniques related to illustration.

ITD 604 Advanced Computer Graphics (3). Computer graphics applications to various industrial fields, problem-solving situations, design and research. Prerequisite: ITD 304 or 504.

ITD 606 Machine Design and Drawing (4). Functional drawing practices, design considerations and problem-solving techniques as applied to machine and tooling situations. Prerequisites: ITD 104, ENT 287 and CET 297.

ITD 621 Plastics Technology (4). Industrial plastics with emphasis on research and experimentation. Lecture and laboratory. Prerequisite: ITD 522 or consent of instructor.

ITD 630 Technology of Metals Processes (4). Supplementary and comprehensive instruction in the technology related to the processes of forming, shaping, fastening and finishing of metal products. Emphasis on the design, function and efficiency of the processes involved. Lecture and laboratory.

ITD 631 Research in Metal Technology (3). Experience in research and experimentation related to metals and metal working processes. Research activities center around group and individual laboratory experiences. Prerequisite: consent of instructor.

ITD 641 Research in Wood Technology (3). Experimentation and research in adhesives, finishes, abrasives, woods and wood products; properties and application to school and industrial usage. Lecture and laboratory.

ITD 651 Advanced Study in Manufacturing (3). The materials, processes, equipment, products and occupations relating to the manufacturing industry will be studied. The selection, design and production of typical products will be undertaken, using mass production techniques, drawing upon the experiences gained through courses in

the technical specialization component. Lecture and laboratory. Prerequisite: course work and/or experience as deemed appropriate.

JOURNALISM AND MASS COMMUNICATIONS (JMC)

JMC 501 School Publications (3). Journalistic problems on the high school and college levels; methods of teaching and advising of school and college publications. Required for teacher certification.

JMC 502 Writing for the Mass Media (3). An intensive writing course covering newsgathering and reporting for print and broadcast, basic editing, advertising copy, news releases, features, columns, reviews and editorials. Open to those students who are not pursuing a major in the Department of Journalism and Mass Communications; required for any JMC graduate student who does not have an undergraduate major or minor in the mass communications field. Prerequisites: ENG 101 and 102 or JMC grammar test.

JMC 504 Writing the Nonfiction Article (3). A Jesse Stuart workshop writing course, taught only in the summer. Preparation, writing, editing and marketing the nonfiction article. Individual critique sessions conducted by a highly published journalist. For graduate and undergraduate students. Prerequisite: permission.

JMC 505 Writing for Children (3). A Jesse Stuart workshop writing course, taught only in the summer. Analysis of the children's literature market and preparation of fictional and nonfictional works designed for the young reader. Individual critiques by a noted editor and writer of children's literature. For graduate and undergraduate students. Prerequisite: permission.

JMC 515 History of U.S. Journalism and Broadcasting (3). History of journalism and broadcasting with emphasis on the role of newspaper, radio, television and other communications media in the United States.

JMC 525 Television Program Development (3). Capstone seminar in creating television programs. Topics include program concepts, target audiences, scripting, budgeting, pre-production planning, producing and marketing pilots. It is anticipated that for a successful outcome, students will commit a minimum of nine hours per week to this course plus an additional 30 hours during the semester working on special projects and productions. Work outside the studios may be required for some productions. Prerequisites: JMC 270, 336, 358, 451; senior or graduate standing with preference given to electronic media majors.

JMC 558 New Technologies (3). The development of technology in media industries and related businesses, such as consumer electronics and office systems. Topics include the nature of technical innovation, economic feasibility, public policy, social impact, and diffusion models.

JMC 560 Alternative Media Criticism (3). An examination of the cultural and social functions of non-mainstream on-line media, such as "e-

zines", independent film, informational websites targeting women and minorities, alternative press reviews, and "fringe" artistic mass media. While most media studies concern the product of major media conglomerates, this course encourages independent and critical thought about the paradigm of nontraditional media content, which leans toward subjectivity and counter-cultural influence. Prerequisites: senior or graduate level in JMC. The ability to write at the college level, as well as proficiency in the English language. Graduate students should have the ability to create Web material.

JMC 585 Specialized Journalism/Radio-Television I (1-3). Directed individual study. Can be a journalistic effort in areas such as science, sports, government, religion, graphics, etc., or a project in radio or television such as a major production or series, an extensive research project on paper or other approved project. Repeatable up to three hours. Prerequisites: consent of instructor and written approved proposal required prior to registration.

JMC 586 Special Topics (3-6). Seminar for seniors and graduate students concerning a current topic affecting the mass media. May be repeated one time for a total of six hours of credit. Prerequisite: consent of instructor, senior or graduate level standing.

JMC 590 Mass Communication Law (3). The law as it affects journalism and broadcasting. History and background of the freedom of the press and broadcast industries with emphasis on First Amendment and FCC regulations, including such areas as seditious libel, libel, obscenity, privacy, copyright, advertising and the Fairness Doctrine. Primarily a lecture and reading course. Prerequisite: JMC 330.

JMC 593 Editorial and Critical Writing (3). A writing course in editorials and the editorial page; personal columns; and critical reviews of plays, TV shows, books and movies. Prerequisites: JMC 194 and 330 or consent of instructor.

JMC 596 Internship in Advertising, Journalism, Public Relations and Radio-TV (3). Course for advanced students in journalism and radio-TV who have completed a minimum of eight weeks as an intern with the media or a public relations or advertising agency. Case studies are prepared by the students on their work experience. Prerequisite: consent of instructor.

JMC 597 Public Affairs Reporting (3). Project-based advanced techniques of specialized reporting, emphasizing community-based journalism and civic journalism. Includes overview of issues concerning multiculturalism, journalistic ethics and legal concerns. Prerequisites: JMC 397 or 466.

JMC 599 American Mass Media (3). Guided independent study in the structure of the mass media in the United States and the impact of American media content on audiences. Course cannot be used for credit for any JMC degree. Completion may be required of students as a

condition for admission to the JMC graduate program. Graded pass/fail. Prerequisite: consent of graduate coordinator.

JMC 600 Seminar in International Mass Communication (3). Analysis of theories and research in international mass communication. Focus on transnational information flow and the role of media in facilitating international knowledge and understanding.

JMC 601 Media, Culture, Gender, and Race (3). An analysis of theories and research in mass media influences on images of culture, race, and gender in our society. Focus on the role of news, entertainment and advertising media in the construction and perpetuation of systemic views about members of these particular groups. Prerequisites: graduate standing and the permission of the instructor.

JMC 602 Seminar in Advertising (3). An in-depth study of the profession of advertising, with a focus on contemporary issues, problems, and challenges; guided discussion and analysis of case studies. Prerequisite: graduate standing; enrollment is limited, with preference to JMC graduate students.

JMC 603 Seminar in Public Relations (3). An in-depth study of the profession of public relations with a focus on contemporary issues, problems, and challenges using guided discussion and analysis of case studies. Prerequisite: graduate standing; enrollment is limited, with preference to JMC graduate students.

JMC 622 JMC Study Abroad (3). Study of current trends and practices in mass media in foreign nations; specific content will vary. Prerequisites: Admission to graduate studies, consent of supervising instructor and department chair; and acceptance in a study abroad program approved by Murray State University.

JMC 630 Theories of Mass Communications (3). The communications process in terms of definitions, characteristics, models, language and nonverbal elements, with a particular emphasis on such empirical effects as selective attention, perception and retention, functions, uses and gratifications, agenda-setting, aggressive behavior due to violent content, and effects of advertising on children.

JMC 648 Mass Media Industries (3). Basic principles of markets and economics and how they apply to media industries. Topics include ownership, convergence, regulation, market forces, and technological forces.

JMC 660 Methods of Communications Research (3). The research process in mass communication including survey, experimental and archival. Students will become familiar with the philosophy and techniques of social science research, data collection methods, sampling procedures, and statistical analysis. Students will also conduct a research project.

JMC 668 Critical Analysis of Mass Media (3). In-depth examination of the cultural and

social functions of mass media, both print and electronic. Includes perspectives on media's role as an information and entertainment source, as an agenda-setter, as a persuasive agent, and as a mode of creative and artistic expression. A readings and discussion course open to majors and non-majors. Prerequisite: junior standing or above.

JMC 670 Philosophical and Ethical Concepts of the Mass Media (3). Lecture and seminar course in concepts of the role of the mass media in society. Philosophical background to include legal and ethical issues.

JMC 677 Directed Individual Study (3). A course designed to allow student pursuit of individual interests. Proposal must be approved by the graduate faculty instructor prior to registering for the course.

JMC 690 Comprehensive Project (3). Capstone of the mass communications degree. An individual independent research, creative, or professional project, designed by the student under the direction of the graduate coordinator and one other JMC faculty member. Prerequisites: proposal submitted to and approved by the graduate coordinator by October 15 for spring enrollment—March 15 for summer or fall enrollment; completion of 21 hours in the program; JMC 630 and 660.

JAPANESE (JPN)

JPN 551 Directed Studies (1-3). Course work designed to meet specific needs and interests on an individual basis. Prerequisite: junior standing or above.

LIBRARY SCIENCE (LIB)

LIB 601 Learning and Libraries (3). The role of libraries and librarians in encouraging learning, and the concept of information literacy as an essential competency for the enhancement of lifelong learning.

LIB 604 Library in the School Curriculum (3). An approach to understanding the role of the library media specialist and the media center in the school curriculum, with the aim of developing the school as a learning community, stressing collaboration between administrators, teachers, and media specialists in planning curriculum and professional development.

LIB 610 Collection Management (3). Principles, standards, practices, and problems in managing and maintaining library collections, with a focus on school library media centers; examination of the major selection tools and critical evaluation of reviewing sources; integration of external sources, particularly those on the web, into the collection; and consideration of weeding techniques and principles.

LIB 617 Research in Young Adult Literature (3). An in-depth study of chosen areas of young adult literature with emphasis on electronic and print sources by and about authors, genres, and issues, which may include a field experience where

students explore the pedagogical implications of their study.

LIB 620 Library Administration (3). The theories, principles and processes underlying the administration and organization of library service for a learning community; planning; organizing, staffing, directing, coordinating, evaluating, reporting, programming, scheduling, public relations/marketing, budgeting, equipping and housing. May include visits to school library media centers or other libraries for observations or to consult resources as required by course assignments.

LIB 621 Library Practicum: Capstone Experience (3). Observation and supervised practice work in an assigned media center upon the completion of the required course work. Students are assigned to an approved school library media center, under the supervision of a certified school media specialist as well as a university coordinator, where they must spend a minimum of 150 clock hours "on the job" to earn a total of three hours of semester credit. Prerequisites: EDU 626, LIB 620, LIB 630, and LIB 640.

LIB 626 Library Practicum: Administration (1). Observation and supervised practice work in an assigned media center with a focus on administration of the library center. Students are assigned to an approved school library, under the supervision of a certified, experienced school media specialist as well as a university coordinator, where they must spend a minimum of 50 clock hours "on the job." Corequisite: LIB 620.

LIB 630 Classification and Cataloging (3). Fundamental principles and methods for organizing resources, both print and electronic, through cataloging and classification, and the application of these principles and procedures in a learning context. Special emphasis on the Dewey Decimal System. May include visits to school library media centers or other libraries for observations or to consult resources as required by course assignments.

LIB 636 Library Practicum: Cataloging (1). Observation and supervised practice work in an assigned media center with a focus on cataloging and classification. Students are assigned to an approved school library media center, under the supervision of a certified, experienced school media specialist as well as a university coordinator, where they must spend a minimum of 50 clock hours "on the job." Corequisite: LIB 630.

LIB 640 Information Sources and Services (3). Information sources and materials, both print and electronic, and basic skills of answering reference questions and teaching inquirers how to search for their own answers using information sources in a learning context. May include visits to school library media centers or other libraries for observations or to consult resources as required by course assignments.

Library Science (LIB)

LIB 646 Library Practicum: Information Skills (1). Observation and supervised practice work in an assigned media center with a focus on the teaching of information skills and on reference services in a media center. Students are assigned to an approved school library media center, under the supervision of a certified, experienced school media specialist as well as a university coordinator, where they must spend a minimum of 50 clock hours "on the job." Corequisite: LIB 640.

LIB 670 Independent Studies in Library Media (3). Independent study in subject or problem of the student's need or interest. Periodic interaction with the supervising faculty member required. Prerequisites: LIB 620 and consent of instructor.

LIB 671 Preparation and Utilization of Information Media (3). Planning and production of materials such as flat pictures, maps, charts, posters, display materials and transparencies for instructional use; analysis of elements in utilization of materials.

LIB 680 Foundations of Library Media (3). Brief historical development of library media centers and library media specialist; an overview of library media centers from the standpoint of its objectives, types, organization, services, and trends; and the library media profession.

LIB 690 Seminar in Library Media (3). Survey of the objectives and procedures of library media centers with analysis of the recent development and trends as reported in professional literature. Prerequisite: LIB 620.

LEGAL STUDIES (LST)

LST 540 Commercial Transactions (3). A study of business organizations and their commercial transactions. Topics include business organizations and relationships, contracts, the Uniform Commercial Code, sales, credit, agency, and property. Prerequisite: LST 240.

LST 545 Constitutional Law I: Developments & Trends (3). A political science course that surveys the development of and historic trends in selected subjects of constitutional law. (Same as POL 545.)

LST 546 Constitutional Law II: Civil Liberties and Civil Rights (3). A political science course that studies the leading court decisions and their impact on the development of American Constitutional Law in the subject areas of civil liberties (Amendment I), civil rights (Amendments IV, V, VI, VIII, and IX) and the equal protection and due process clauses of the Amendment XIV. Prerequisites: none. (Same as POL 546.)

LST 576 Law in Public Administration (3). An examination of the role of law in the administrative process. Topics to be covered include administrative rulemaking and adjudication, enabling statutes, open records and open meetings laws, procedural due process, and civil liability and immunity for public employees and governments. (Same as POL 576.)

LST 644 Graduate Cooperative Education (3). May be repeated for a maximum of six credits. Cannot be used to meet M.B.A., M.P.A. or M.S. degree requirements. Graded pass/fail. Prerequisite: permission of chair.

MATHEMATICS (MAT)

MAT 500 Internship (1). Graded pass/fail.

MAT 501 Mathematical Modeling I (3). A study of mathematical models used in the social, life and management sciences and their role in explaining and predicting real world phenomena. The emphasis is on developing skills of model building. Topics include difference equations, perturbation theory and nondimensional analysis. Prerequisite: MAT 411.

MAT 502 Mathematical Modeling II (3). A continuation of topics discussed in MAT 501. A term project consisting of a model of a non-mathematical problem is required. Prerequisite: MAT 501.

MAT 505 Abstract Algebra I (3). An in-depth study of rings and fields. Topics will include the Isomorphism Theorems, ideals, polynomial rings, integral domains, fields, field extensions. Prerequisite: MAT 421 or consent of instructor.

MAT 508 Introduction to Combinatorics and Graph Theory (3). Selected topics and applications from combinatorics and discrete mathematics, which can include: enumeration, generating functions, recurrence relations, partially ordered sets, Boolean algebras, block designs, coding theory, and topics in graph theory, including trees, networks, optimization, and scheduling. Prerequisites: MAT 308 and either MAT 312 or MAT 335.

MAT 510 Foundations of Geometry (3). Study of postulate systems for geometry, critical examination of Euclid's Elements, introduction to non-Euclidean geometry. Prerequisite: MAT 309 or consent of instructor.

MAT 512 Partial Differential Equations (3). Partial differential equations of first and second order and applications. Prerequisites: MAT 309 and 411.

MAT 515 Theory of Numbers (3). Divisibility, the Euclidean algorithm, mathematical induction, prime and composite numbers, Diophantine equation, Pythagorean triplets, Fermat's Theorem, congruencies, quadratic residues, continued fractions. Prerequisite: MAT 308 or consent of instructor.

MAT 516 Introduction to Topology (3). Set theory, topology of the real line, topological spaces, metric spaces. Prerequisite: MAT 309 and 312.

MAT 520 Introduction to Complex Variables (3). Complex numbers, analytic functions, elementary functions, integration, Cauchy theorem, Taylor and Laurent expansions, and applications. Prerequisite: MAT 309.

MAT 522 Vector Calculus (3). Operations with vectors; differentiation and integration of functions of several variables; transformation of coordinates; line and surface integrals; Green's, Stokes's, and the divergence theorems. Prerequisite: MAT 309.

MAT 524 Boundary Value Problems (3). Analytic and computational techniques for linear first and second order partial differential equations, initial, and boundary value problems. Classification, Fourier series, separation of variables, finite difference and/or finite element methods. Prerequisites: MAT 309, MAT 411, and MAT 335 or consent of instructor.

MAT 525 Advanced Calculus I (3). A rigorous development of one variable calculus including limits, continuity, differentiation, integration and sequences of functions. Prerequisite: MAT 309 and 312.

MAT 526 Advanced Calculus II (3). A continuation of MAT 525 and functions of several variables. Prerequisite: MAT 525.

MAT 528 Introduction to Game Theory (3). In this introductory course, we investigate mathematical models of certain conflict and cooperation situations (games), paying attention to applications in biology, philosophy, political science, economics, and social psychology. We study two-person zero-sum games, two-person non-zero-sum games, and/or other multi-player games. We consider pure and mixed strategy solutions, Nash equilibria, and other aspects of such games. Prerequisites: MAT 250 or consent of instructor.

MAT 530 Special Topics in Mathematics I (1-3). Library investigations of various lengths concerning special topics in mathematics. Periodic conferences will be arranged with the supervising faculty member on an individual basis. May be repeated for credit. Prerequisites: Six hours of mathematics courses numbered 400 and above with a mathematics GPA of at least 3.0; consent of instructor.

MAT 531 Special Topics in Mathematics II (1-3). Library investigations of various lengths concerning special topics in mathematics. Periodic conferences will be arranged with the supervising faculty member on an individual basis. May be repeated for credit. Prerequisites: Six hours of mathematics courses numbered 400 and above with a mathematics GPA of at least a 3.0; consent of instructor.

MAT 535 Linear Algebra (3). Linear transformations, matrices, quadratic and hermitian forms, eigenvalues and elementary spectral theory. Prerequisite: MAT 335.

MAT 540 Mathematical Statistics I (4). Introduction to probability theory and statistical inference. Combinatorics, conditional probability independence. Discrete and continuous random variables and their distributions. Expected value and moments of distributions. Estimation theory and properties point estimators. Confidence intervals. Basic theory of hypothesis testing. Test-

ing means and proportion. T-tests. Descriptive statistics. Prerequisite: MAT 309 or consent of instructor.

MAT 541 Mathematical Statistics II (3). Additional topics in probability theory and statistical inference. Bayes' Theorem, functions of random variables, order statistics. Bayesian inference, F-tests, chi-square tests, contingency tables, regression and correlation. Prerequisites: MAT 540.

MAT 542 Numerical Analysis (3). Numerical solutions of differential equations, iterative techniques for solving linear systems, discrete least-squares methods, orthogonal polynomials, and approximating eigenvalues. Prerequisites: MAT 411 and either MAT 442 or consent of instructor. Requires knowledge of a scientific programming language.

MAT 545 Boolean Algebra with Applications to Digital Computer Design (3). Boolean algebra is developed as a model to study various physical systems, including the algebra of subsets of a set, propositional logic, and switching circuits. Prerequisite: consent of instructor.

MAT 550 Teaching Mathematics (3). A study of the "whys" of mathematics with the aim of equipping future/current teachers with the ability to explain rather than merely do mathematics. Taught in the context of theories of learning and pedagogy. Involves mathematics content taught at the secondary and community college level. Credit granted toward an undergraduate major or minor in mathematics only for those students following a teacher certification program. Prerequisite: MAT 312 or consent of instructor.

MAT 551 Mathematics for Teachers (3). Explorations of mathematical topics from the viewpoint of future/current secondary and community college teachers of mathematics. Gives credit toward an undergraduate major or minor in mathematics only for those students following a teacher certification program. Can be taken without MAT 550. Prerequisite: MAT 312 or consent of instructor.

MAT 560 Statistical Methods (3). A survey course in statistical methods for advanced undergraduate students and graduate students with no prior training in statistics. The course covers techniques commonly used for data analysis in many scientific fields. Topics included are probability distributions, sampling, variance, estimation, hypothesis testing, contingency table, regression and analysis of variance. (Does not apply toward any degree in mathematics or a minor in mathematics.)

MAT 565 Applied Statistics I (4). A study of applied statistical techniques including correlation, regression, analysis of variance and non-parametric methods with a view toward applications. A statistical computer package will be used when appropriate, but no computer background is required. Prerequisite: MAT 560 or consent of instructor.

MAT 566 Applied Statistics II (3). A continuation of MAT 565. Includes further topics in analysis

and variance, non-parametrics and multivariate analysis. Prerequisite: MAT 565.

MAT 569 Topics in Statistics (3). Selected topics in probability and statistics. Prerequisite: consent of instructor.

MAT 570 Linear Programming (3). Theory and application of linear programming and the role it plays in operations research. Prerequisite: MAT 335.

MAT 602 Integration Theory (3). Riemann integrals, continuous functions, functions of bounded variation, Riemann-Stieltjes integrals. Prerequisite: MAT 525.

MAT 603 Real Function Theory I (3). Lebesgue measure and integration theory and related topics. Prerequisite: MAT 526.

MAT 604 Real Function Theory II (3). Functional analysis, including Classical Banach spaces and L_p spaces. Prerequisite: MAT 603.

MAT 605 Selected Topics in Complex Analysis (3). An in-depth study of selected topics introduced in MAT 520. Prerequisite: MAT 520.

MAT 609 Abstract Algebra II (3). An in-depth study of group theory. Topics will include Lagrange's Theorem, Cauchy's Theorem, the Sylow Theorems, and factor groups. Prerequisite: MAT 505.

MAT 610 Selected Topics in Algebra (3). An in-depth study of selected topics introduced in MAT 505 and 609. Prerequisite: MAT 609.

MAT 620 Selected Topics in Topology (3). An in-depth study of selected topics introduced in MAT 516. Prerequisite: MAT 516.

MAT 630 Real Number System I (3). Development of the natural numbers and the integers. (This course does not offer graduate credit for those people seeking a master of science degree in mathematics, chemistry or physics, or a master of arts degree in mathematics.) Prerequisite: consent of instructor.

MAT 631 Real Number System II (3). A detailed development of the rational and real numbers. (This course does not offer graduate credit for those people seeking a master of science degree in mathematics, chemistry, or physics, or a master of arts degree in mathematics.) Prerequisite: consent of instructor.

MAT 632 Foundations of Analysis (3). A study of concepts basic to the elementary calculus, such as limits continuity, the derivative, and the integral. (This course does not offer graduate credit to those people seeking a master of science degree in mathematics, chemistry, or physics, or a master of arts degree in mathematics.) Prerequisites: MAT 309 and consent of instructor.

MAT 633 Probability and Statistics (3). An introduction to sample spaces, probabilities, and probability distributions, such as binomial, normal and Poisson. Measure of center, variability and

applications. Statistical inference and tests of significance. (This course does not offer graduate credit for those people seeking a master of science degree in mathematics, chemistry, or physics, or a master of arts degree in mathematics.) Prerequisite: consent of instructor.

MAT 644 Graduate Cooperative Education (3). May be repeated to maximum of six credits. Graded pass/fail.

MAT 690 Selected Topics in Mathematics I (1-3). Independent work on selected topics. May be repeated for credit. Prerequisite: consent of instructor.

MAT 691 Selected Topics in Mathematics II (1-3). Independent work on selected topics. May be repeated for credit. Prerequisite: consent of instructor.

MAT 698 Research and Thesis (3).

MAT 699. Research and Thesis (3).

MANAGEMENT (MGT)

MGT 550 Human Resource Management (3). Familiarizes the student with fundamental tools to effectively manage and motivate a diversified workforce. Included in this course is a study and analysis of the programs in human resource management including job analysis, job evaluation, selection and placement, testing and training, personnel services, and labor relations, as well as the current issues of globalization and the changing composition of the workforce. Prerequisite: MGT 350.

MGT 551 Organizational Behavior (3). Study of human behavior in organizations with attention to individual, small group and organization-wide issues. Particular emphasis is placed on the role of the organization's environment, managing in international settings, and the importance of ethics in management. May not be taken by M.B.A. students. Prerequisite: MGT 350.

MGT 552 Management of Operations and Technology II (3). A continued study of the operations function of organizations. Topics covered include technology management, achieving zero defects, continuous improvement, total productive maintenance and world class competition. Prerequisite: MGT 443.

MGT 553 Human Resource Selection (3). A concentrated investigation of the methods appropriate to the development, implementation and administration of the staffing process (attracting, selecting and placing candidates in positions) in contemporary organizations will be conducted. This will involve analyzing organizational environments and identifying the appropriate staffing strategies and policies, including an examination of the regulatory environment, cost analysis of human resources, and the statistics of personnel validation of screening devices, i.e. personnel testing, interviewing and biographical information. Prerequisite: MGT 350.

Management (MGT)

MGT 554 Managing a Diverse Workforce (3). This course involves a study of the cultural perspective and processes reflecting individual, work group, and organizational diversity in the work place. Specific issues this course will include are: prejudice and stereotypes; group and organizational factors affecting diversity; legal issues related to diversity; and global, cross-cultural and gender issues. Prerequisite: MGT 350.

MGT 555 Training and Development (3). This course examines the needs and characteristics of adult learners and the role of training and development as part of human resources in the business setting. The role of the trainer, the learner, needs assessment, methodologies, learning objectives, and measurement and evaluation techniques will be explored and practiced. Prerequisite: senior or graduate standing.

MGT 557 International Management (3). Course covers two principal areas: (1) the evolution of the multinational corporation, and (2) a comparative cross-cultural study of management philosophy and practice. Prerequisite: MGT 350.

MGT 559 Compensation Management (3). A study of basic considerations for successful wage and salary administration. Areas studied include job evaluation, employee evaluation and systems and plans of compensating employees. Prerequisite: MGT 350.

MGT 570 Organization Theories (3). A study of the major contemporary theories of organization with emphasis on modern concepts that have been drawn from existing and evolving organizations. It is a systematic study of organizations that is intended to enhance a student's ability to understand, diagnose, and respond to emerging organizational needs and problems. Prerequisite: MGT 350.

MGT 572 Organizational Development (3). Studies approaches to organization development, growth and renewal, with special emphasis on the organization's ability to adapt to its environment. Particular attention is paid to the process of planned change, the techniques used in organization development, and the role of ethics in organization change. May not be taken by M.B.A. students. Prerequisite: MGT 350.

MGT 575 Labor-Management Relations (3). A study of labor-management relations in the United States with emphasis on the structure and role of labor organizations, the collective bargaining functions and processes, and the philosophy and approaches essential to a successful relationship between labor and management institutions. Prerequisite: MGT 350.

MGT 577 Labor Law and Public Policy (3). Traces the development of the principles of labor law and labor legislation as well as their administration at the national, state and local levels in the United States. Uses administrative and court decisions and policy analysis to examine issues of current significance concerning labor relations. Prerequisite: MGT 350 or consent of instructor. (Same as POL 577.)

MGT 580 Seminar in Leadership (3). Describes the nature and meaning of leadership in organizations, including the importance of effective leadership, knowledge of various leadership theories, and personal attributes associated with effective leaders. The course integrates leadership research findings with leadership application and skill development. Prerequisite: MGT 350.

MGT 590 Strategic Management (3). Course involves a study of the process of strategy formulation and implementation and the integration of the functional areas of the business into a concerted organizational effort. Case problems are used. Should be taken in the student's last semester. May not be taken by M.B.A. students. Prerequisites: FIN 330, MGT 350, MKT 360, and senior standing.

MGT 595 Special Problems (3). This course consists of independent study of some managerial problem area. Periodic conferences will be arranged with the supervising faculty member on an individual basis. Prerequisite: consent of instructor.

MGT 644 Graduate Cooperative Education (3). May be repeated for a maximum of six credits. Cannot be used to meet M.B.A., M.P.A. or M.S. degree requirements. Graded pass/fail. Prerequisite: permission of chair.

MGT 651 Seminar in Organizational Behavior (3). Studies management as a profession, with special emphasis upon behavioral and organizational issues. Examines individual, group and organizational processes in light of the environment within which the organization functions. Special attention is given to managing in non-U.S. settings and the ethical problems faced in the managerial job. Prerequisites: MGT 350 or equivalent, and graduate standing.

MGT 652 Evolution of Management Thought (3). The evolution of management theory in the United States with emphasis on modern concepts of organization. Selected readings and study reports on each of the major stages of development are required. Prerequisites: MGT 350 or equivalent, and graduate standing.

MGT 654 Seminar in Human Resource Management (3). Theory, policy and relevant research concerning the procurement, development, maintenance and utilization of human resources are studied. Special attention is also given to labor-management relations, with emphasis being placed upon the trilateral involvement of management, unions and government in the development and implementation of modern labor relations policy. Prerequisites: MGT 350 or equivalent, and graduate standing.

MGT 655 Seminar in Organization Development (3). A study of the concepts, literature and implementation strategies of organization development. Emphasis is placed on the effective management of planned change, approaches to organization change, the evaluation of change efforts, and the role that organization development can play in international business. Prerequisites: MGT 350 or equivalent, and graduate standing.

MGT 656 Seminar in Strategic Management (3). This is the capstone course in which the students must integrate all of the functional areas of business administration and analyze their impact on management policy and strategy decisions by use of the case study method. Individual, small group, and class approaches will be used to analyze the various cases selected for study. Even though each student will bring knowledge of his or her area of specialization into the classroom, it is expected that the student will perform as a generalist rather than a specialist and as a practicing manager rather than an impartial researcher in analyzing case situations. Prerequisite: 18 hours of graduate work in business.

MGT 657 Seminar in International Management (3). An interdisciplinary course examining issues in international business and management with a major focus on characteristics and challenges of international management involving business theory and practice, strategy and operations, human resource management and motivation, ethics and corporate social responsibility, workforce diversity, and cross-cultural perspectives on all these. Prerequisites: MGT 350, MKT 360 and graduate standing.

MGT 695 Special Problems (3). This course consists of independent study of some managerial problem areas. A weekly conference will be scheduled with the supervising faculty member on an individual basis. Prerequisites: 18 hours of graduate work in business and consent of instructor.

MIDDLE SCHOOL EDUCATION (MID)

MID 640 Middle School Curriculum (3). A study of the educational program designed for the middle school. Emphasis will be placed on the basic assumptions underlying modern trends.

MARKETING (MKT)

MKT 564 Marketing Channels (3). The methods and processes used in the distribution of consumer and industrial products and services. Emphasis is on the way certain basic distribution functions are carried out in an integrated channel system. The role of a variety of manufacturers, wholesalers and retailers as parts of this system is analyzed. Prerequisite: MKT 360.

MKT 565 Marketing Research (3). An introduction to research methods and procedures used in the marketing process. Areas given emphasis include sources of market data, sampling, surveys, interpretation of data and the relationship of market research to the policies and functions of the business enterprise. Prerequisites: MKT 360 and senior standing.

MKT 566 Marketing Management (3). A problems course dealing with specialized marketing strategies for consumers as well as industrial markets, new product development, sales promotion, sales organization, and prices and pricing. Attention is given to marketing research as a determinant of policy. Cases are used extensively

to emphasize analysis and decision-making. Prerequisites: MKT 360 and senior standing.

MKT 567 Marketing Planning and Strategy (3). This course is designed to develop a comprehensive integrated knowledge of the broad field of marketing. The course will synthesize material presented in basic marketing; however, the major emphasis will be on systematic analytical problem-solving, and the dynamics of decision-making as faced by marketing management. Prerequisite: MKT 360.

MKT 568 Global Marketing Management (3). This is the undergraduate capstone marketing course. It covers the practice of marketing in a global economy. Major topics include (1) multinational environmental scanning, (2) marketing planning and strategy in a global context, (3) tactical international marketing decisions, (4) assessment of international market opportunities, and (5) ethical considerations in global marketing. Prerequisite: MKT 360.

MKT 569 Promotional Management (3). A study of the relationship of promotional activities to other marketing activities of business and non-profit organizations. Emphasis is placed on the interrelationships and activities of promotional devices such as advertising, personal selling, publicity and sales promotion. Prerequisite: MKT 360.

MKT 595 Special Problems (1-3). This course consists of independent study in some area of marketing. Periodic conferences will be arranged with the supervising faculty member on an individual basis. Prerequisite: consent of instructor.

MKT 644 Graduate Cooperative Education (3). May be repeated to a maximum of six credits. Cannot be used to meet M.B.A., M.P.A. or M.S. degree requirements. Graded pass/fail. Prerequisite: permission of chair.

MKT 663 Advanced Consumer Behavior (3). This course provides an overall view of some of the basic perspectives of consumer behavior, and the consumer decision process. Emphasis is placed on the contributions made to the understanding of consumer behavior from the behavior sciences of economics, sociology, psychology and anthropology. Prerequisites: MKT 360 and graduate standing. Not open to students who have completed MKT 463.

MKT 667 Marketing Planning and Application (3). This course is a study of marketing as the firm's strategic link with its customers in a global competitive environment. Major topics include (1) the development of marketing strategy, (2) the formulation of marketing plans, (3) the selection and implementation of marketing tactics, and (4) ethical considerations in marketing. Prerequisites: MKT 360 and graduate standing.

MKT 669 Seminar in Global Marketing (3). This course covers the practice of marketing in the global economy. It develops students' abilities to engage in global marketing strategic planning, select appropriate entry strategies and develop responsive marketing tactics. It also enhances students' skills in using information technology

resources, assessing world markets, analyzing ethical issues and communicating orally and in writing. Prerequisite: MKT 360 and graduate standing. May not be taken for credit by students who have completed MKT 568.

MKT 675 Marketing Applications in E-Business (3). Electronic commerce is an essential component of corporate strategies for firms in business-to-business and business-to-consumer markets. This course focuses on marketing applications in e-Business, with an emphasis on developing operational e-Commerce sites in entrepreneurial enterprises with widely available applications software. Prerequisite: MKT 360 or consent of instructor.

MKT 685 Business Geographics for Managers (3). Business geographics (BG) refers to the specialized application of geographic information systems (GIS) concepts and tools to the analysis of business problems. As these tools become integrated into corporate information systems, managers in all fields must learn to apply them effectively in business decision making. In this course, students will develop these skills by learning the basic operations of GIS software and by completing several business geographics projects using this software and a variety of data sources. Prerequisites: MKT 667 or consent of instructor.

MKT 695 Special Problems (3). This course consists of independent study in some area of marketing. Periodic conferences will be arranged with the supervising faculty member on an individual basis. Prerequisite: Consent of instructor.

MODERN LANGUAGES (MLA)

MLA 510 Applied Linguistics for Second Language Teaching (3). An overview of the basic concepts, scope, and methodology of the science of language in its historical and descriptive aspects, including topics and issues in current linguistic studies. The primary systems of language, psycholinguistics, and comparative phonology are treated in depth. Prerequisite: ENG 310. Junior standing or above. (Same as ENG/TSL 510.)

MLA 514 Methods of Teaching Foreign Languages (3). Designed to prepare students for the teaching of foreign languages in the public school. Current teaching philosophies, techniques and materials, curriculum innovation, and extracurricular activities discussed. Limited observation and performance in a language classroom. Prerequisite: EDU 303. Junior standing or above.

MLA 520 Computer Assisted Language Learning (3). An introduction to computer assisted language learning (CALL), an overview of its specialized vocabulary, and a review of research regarding its effectiveness. (Same as TSL 520.) Prerequisite: junior standing or above.

MLA 523 Testing and Evaluation in Second Language Teaching (3). A review of a number of current methods for classroom/standardized language testing and evaluation. Prerequisite: junior standing or above. (Same as TSL 523.)

MLA 533 Language and Culture (3). A study of the relationship among language, society, and the individual's concept of reality. The course examines a variety of anthropological and ethnographic concepts and findings as they relate to language and language learning in its broadest context. The course will also examine socio- and comparative linguistics, the relationship between culture and language, and the implications for second language teaching. (Same as ENG/TSL 533.) Prerequisite: junior standing or above.

MLA 551 Directed Study in Modern Language I (1-3). Independent work in areas of language, culture, or literature designed to meet the needs and interests of individual students. Prerequisite: two years in college of the same foreign language or the equivalent. Junior standing or above.

MLA 623 Testing and Evaluation in Second Language Teaching (3). A review of a number of current methods for classroom/standardized language testing and evaluation. (Same as TSL 623)

MLA 630 Developing Intercultural Competence (3). An overview of diverse world views, ethnic heritages, and historical contributions of peoples from broadly defined regions of the world and the implications for an intercultural/international classroom setting. Prerequisite: junior standing or above. (Same as TSL 630.)

MUSIC (MUS)

MUS 510 Pedagogy of Theory (2). An examination of current materials and practices in the teaching of theory; discussion and research of the problems of theory teaching, with particular emphasis on application to and place in the secondary school and the junior college. (On demand)

MUS 511 Techniques of Twentieth-Century Music (3). Looks at elements of tonal theory to understand how music progressed toward new trends in the twentieth century. Compositional techniques in the music of selected twentieth-century composers will be studied and a determination of theoretical practices will be made. Standards of judgment, justification of practices and current trends in musical composition will be evaluated. Prerequisites: A grade of C or better in MUS 273 and 274.

MUS 512 Counterpoint (3). Contrapuntal practices from the 16th century to the modern era. There will be particular emphasis on contrapuntal writing of the 18th century as exemplified in the works of J.S. Bach. Study of species counterpoint, analysis of representative composition, and writing of contrapuntal works. Required of B.M. (performance) majors. Prerequisites: A grade of C or better in MUS 273 and 274.

MUS 513 Form and Analysis (3). A study in harmonic analysis and the forms of composition throughout the history of music. Prerequisites: A grade of C or better in MUS 273 and 274.

MUS 514 Applied Music Study—Percussion Instruments (1-3). One 25-minute or one 50-minute individual instruction period per week.

Music (MUS)

Credit will be given for as many semesters as taken. Open to junior and senior classification and graduate students. Prerequisites: completion of 400-level of applied study or the equivalent, and permission of instructor.

MUS 515 Applied Music Study—Wind Instruments (1-3). One 25-minute or one 50-minute individual instruction period per week. Credit will be given for as many semesters as taken. Open to junior and senior classification and graduate students. Prerequisites: completion of 400-level of applied study or the equivalent, and permission of instructor.

MUS 516 Applied Music Study—Organ (1-3). One 25-minute or one 50-minute individual instruction period per week. Credit will be given for as many semesters as taken. Open to junior and senior classification and graduate students. Prerequisites: completion of 400-level of applied study or the equivalent, and permission of instructor.

MUS 517 Applied Music Study—Piano (1-3) One 25-minute or one 50-minute individual instruction period per week. Credit will be given for as many semesters as taken. Open to junior and senior classification and graduate students. Prerequisites: completion of 400-level of applied study or the equivalent, and permission of instructor.

MUS 518 Applied Music Study—String Instruments (1-3) One 25-minute or one 50-minute individual instruction period per week. Credit will be given for as many semesters as taken. Open to junior and senior classification and graduate students. Prerequisites: completion of 400-level of applied study or the equivalent, and permission of instructor.

MUS 519 Applied Music Study—Voice (1-3) One 25-minute or one 50-minute individual instruction period per week. Credit will be given for as many semesters as taken. Open to junior and senior classification and graduate students. Prerequisites: completion of 400-level of applied study or the equivalent, and permission of instructor.

MUS 520 Keyboard Literature and Performance Practice (2). Keyboard literature from the pre-Baroque era through the 20th century. Stylistic considerations, performance practices, ornamentation, etc., for each period researched and discussed. Prerequisite: consent of the instructor. (On demand)

MUS 530 Special Topics (3). A study of selected musical topics: composers, genres, etc. The course will allow students to study topics in a concentrated, in-depth manner. Specific topics will vary by semester according to student and faculty advisor interests. Credit will be given for as many semesters as taken. Prerequisite: instructor approval.

MUS 533 String Techniques (2). Techniques of teaching stringed instruments through participation. Special reports and discussions on the development of string programs in schools required.

Open to advanced undergraduates with permission of department chair. Prerequisite: MUS 133 or equivalent. (On demand)

MUS 535 Double Reed Techniques (2). Course designed to acquaint the student with idiomatic problems related to the construction and use of bassoon, oboe, and English horn reeds; study includes reed construction with observation of characteristics and relationship of the reed to tone production and quality. Prerequisite: MUS 132 or equivalent. (On demand)

MUS 540 Piano Pedagogy (2). Piano teaching, including the examination and evaluation of beginning and intermediate teaching methods, analysis of technical approaches, research into the history of piano pedagogy. Observations and supervised practice teaching required. Prerequisite: consent of the instructor. (On demand)

MUS 541 Vocal Pedagogy (2). Techniques, practices and materials used in the teaching of singing. Discussion of psychological and physical developmental growth principles applied to individual and group performance. (On demand)

MUS 550 Independent Study in Music (1-3). Independent study for selected students. Topics, methodology, and evaluation procedures to be approved in advance by the instructor. Credit will be given for as many semesters as taken. Prerequisite: consent of department chair and instructor.

MUS 593 Workshop in Music for Teachers (1-3). A variable credit workshop with selected topics appropriate to music educators. Credit will be given for as many semesters as taken.

MUS 600 Historical and Philosophical Foundations of Music Education (3). Historical and philosophical foundations of music education; lecture and discussion with attention to aesthetics, aesthetic education, and the relationship of music and art to these in forming a philosophy of music education.

MUS 601 Psychological Foundations of Music Education (3). Psychological foundations of music education through readings, lecture, and discussion of educational learning theories. A survey of current trends in learning theories and their implications for teaching, supervision, administration, and evaluation in music education.

MUS 610 Advanced Music Theory and Analysis (3). Selected composers from the Common Practice period to the present will be studied in depth. Complete movements of works will be studied, and proper analytical procedures and systems will be determined and implemented. A comprehensive look at a variety of styles and genres will be of particular importance, and emphasis will be placed on understanding 20th-century music.

MUS 612 Advanced Choral Arranging Techniques (3). Students arrange selected songs in a wide range of styles for various types of choral groups (women's voices, men's voices, mixed voices and changing voices). Some arrangements to be a *cappella* and others with accompaniment. (On demand)

MUS 613 Advanced Instrumental Arranging Techniques (3). Characteristics and accepted scoring for all instrumental families (including strings) studied. Creative procedures, preparation of the condensed score, symphonic full score, duplication of parts and advanced methods of transcription studied. Prerequisite: MUS 313 or successful professional experience required. (On demand)

MUS 614 Percussion (1-3). Credit will be given for as many semesters as taken.

MUS 615 Wind Instruments (1-3). Credit will be given for as many semesters as taken.

MUS 616 Organ (1-3). Credit will be given for as many semesters as taken.

MUS 617 Piano (1-3). Credit will be given for as many semesters as taken.

MUS 618 Strings (1-3). Credit will be given for as many semesters as taken.

MUS 619 Voice (1-3). Credit will be given for as many semesters as taken.

MUS 624 Choral Techniques and Repertoire (3). Literature, materials and methods for teaching choral music. Score analysis will center on developing the ability to perceive conducting, teaching and performance problems. (On demand)

MUS 625 Marching Band Techniques (3). Contemporary marching band practices and techniques. (On demand)

MUS 626 Instrumental Techniques and Repertoire (3). Literature, materials and methods for teaching instrumental music. Score analysis will center on developing the ability to perceive conducting, teaching and performance problems. (On demand)

MUS 627 The Elementary Music Program (3). Administration of the elementary school music program, including curriculum, assessment, KERA standards, mainstreaming, gifted/talented students, 20th-century approaches to music education, and professional development. Prerequisites: MUS 600 and 601.

MUS 628 The Secondary Music Program (3). This course is directed towards music planning in the secondary school, including curriculum development and evaluation, evaluation tools, scheduling strategies, budget and inventory control, summer program development, community relations, faculty development and in-service planning, and working relationships with school administrators. Prerequisites: MUS 600 and 601.

MUS 629 Contemporary Instructional Practices in Music Education (3). Contemporary music education practices, with the implications of current research upon those practices. Prerequisites: MUS 600 and 601.

MUS 639 Methods of Research in Music Education (3). A study of procedures used to locate sources of information, organize and interpret

collected data, and apply results of published research in music. A variety of research methods is studied and utilized.

MUS 644 Graduate Cooperative Education (3). May be repeated to a maximum of six credits. Graded pass/fail. Prerequisite: permission of chair.

MUS 650 Problems and Projects in Music (1-4). Course designed to accommodate individual projects for selected students. Project reports will be presented orally and/or in writing. Credit will be given for as many semesters as taken. Prerequisites: consent of departmental chair and instructor.

MUS 651 University Orchestra (1). The ensemble will study and perform symphonic literature from a variety of style periods. Credit will be given for as many semesters as taken. Audition required.

MUS 652 Marching Band (1). The marching band develops an understanding of musical styles and skills through study and performance. Credit will be given for as many semesters as taken. Audition required.

MUS 654 Symphonic Wind Ensemble (1). The ensemble develops an understanding of representative wind band literature through study and performance. Credit will be given for as many semesters as taken. Audition required.

MUS 655 Jazz Ensemble (1). The ensemble develops an understanding of representative jazz styles and skills through study and performance. Credit will be given for as many semesters as taken. Audition required.

MUS 657 Symphonic Band (1). The symphonic band develops an understanding of musical styles and skills through study and performance. Credit will be given for as many semesters as taken. Audition required.

MUS 658 Concert Band (1). Develops an understanding of musical styles and skills through study and performance. Repeatable. Prerequisites: concert band skills on a wind or percussion instrument.

MUS 659 Advanced Music History and Literature (3). The student will explore in further depth the development of music in history through stylistic elements as found in the standard repertoire. Each of these musical elements will be traced from plainchant through music of the 20th century, with special emphasis on innovative trends, perspectives, and genres.

MUS 660 University Chorale (1). Course dedicated to the study and performance of a wide variety of choral literature from all major style periods and genres. The development of basic musical skills and vocal function is emphasized.

MUS 661 Concert Choir (1). Course dedicated to the study and performance of a wide variety of choral literature from all major style periods and

genres. The continued development of musical skills and vocal function is emphasized. Audition required.

MUS 662 Chamber Singers (1). The group will study and perform a wide variety of choral literature from all major style periods and genres, with special attention to that body of work composed specifically for small vocal ensembles. Audition required. Requires concurrent enrollment in MUS 660 or 661.

MUS 664 Opera Workshop (1-2). Provides experiences for singers to gain experience in opera/music theatre repertoire through participation in full performances or staged scenes. Only students with major roles may take MUS 664 for two credits with permission of the instructor. Credit will be given for as many semesters as taken. Audition required.

MUS 670 Chamber Ensembles (1). Small ensembles concentrating on chamber music literature. Emphasis will be placed on developing chamber ensemble skills. Credit will be given for as many semesters as taken. Prerequisite: consent of instructor.

MUS 698 Music Thesis I (3). The initial preparation of a significant study of a topic deemed appropriate by the student's research director and research committee. This topic could be an outgrowth of an idea from previous coursework or may emanate from discussion with faculty and peers. Prerequisites: MUS 600, 601, 610, 639 and 659.

MUS 699 Music Thesis II (3). The continuation of a significant study of a topic deemed appropriate by the student's research director and research committee. Prerequisite: MUS 698.

NUTRITION (NTN)

NTN 520 Seminar in Food and Nutrition (1). A research symposium about special topics dealing with food and nutrition presented by graduate students and faculty. Course enables students to expand their knowledge about contemporary research topics. Prerequisites: permission of instructor.

NTN 531 Food Economics (3). A study of the economical, legislative, physical and microbiological factors that affect the food supply during processing, packaging and distribution. Lecture, three hours; laboratory, arranged.

NTN 532 Advanced Nutrition (3). Advanced study of nutrition and human metabolism with emphasis on recent research. Diet pattern inter-relationship in physical health; research procedures and interpretation used in an individual project. The field of dietetics, its professional roles and responsibilities. Lecture, three hours. Prerequisites: FCS 230, chemistry and biology.

NTN 535 Medical Nutrition Therapy and Disease (3). Understanding the role of nutrition in the pathophysiology of disease: developing

therapeutic diets in the treatment of common medical condition. Prerequisites: BIO 199, CHE 105, NTN 230 and 233.

NTN 536 Methods in Medical Nutrition Therapy (3). Understanding medical nutrition therapies involving diseases of carbohydrate metabolism and protein metabolism. Comprehensive approaches to nutrition therapy via oral, enteral and parenteral methods. Prerequisites: BIO 199, CHE 105, NTN 230 and 233.

NTN 597 Trends and Issues in Nutrition and Foods (1-3). Topics may differ from semester to semester depending on program needs. Investigation of current problems, issues and topics in food, nutrition and dietetics. May be repeated when topic differs.

NTN 632 Nutritional Aspects of Cultures (3). An exploration and in-depth study of the origin and development of nutritional patterns of regional and ethnic cultural groups in the United States. Research projects are required. Students will gain understanding of the nutritional aspects of various cultural food ways through library research, interview techniques, and hands-on experiences.

NTN 640 Dietetics Clinical Training Primer (2). An intensive assessment and review course preparing student clinicians for the hospital dietetics clinical training program. Includes assessment of student competency, rules of general conduct, and review of principles of clinical nutrition and food service management. Prerequisite: admission to the Clinical Training Program in Dietetics.

NTN 641 Nutrition Therapy I (2). A combined didactic and clinical practice course on nutrition therapy encompassing classroom instruction and planned work experiences in a pre-approved hospital training site. Students have the opportunity to apply principles of nutrition therapy in a functional setting. Prerequisite: NTN 640.

NTN 642 Foodservice Management (3). A combined didactic and clinical practice course on foodservice management encompassing classroom instruction and planned work experiences in a pre-approved hospital training site. Students have the opportunity to apply principles of foodservice management in a functional setting. Prerequisite: NTN 640.

NTN 643 Community Nutrition (2). A combined didactic and clinical practice course on community nutrition encompassing classroom instruction and planned work experiences in a pre-approved hospital training site. Students have the opportunity to apply principles of nutrition therapy in a functional setting. Prerequisite: NTN 640.

NTN 650 Dietetics Clinical Training Primer II (2). An intensive course preparing student clinicians for the second semester of the Clinical Training Program in Dietetics. Includes review of principles of advanced clinical nutrition and foodservice management. Prerequisites: NTN 640, 641, 642 and 643.

Nutrition (NTN)

NTN 651 Nutrition Therapy II (4). A combined didactic and clinical practice course on advanced medical nutrition therapies encompassing classroom instruction and planned work experiences in a pre-approved hospital training sites. Students have the opportunity to apply principles of advanced nutrition therapies in a functional setting. Prerequisite: NTN 650.

NTN 652 Business Entrepreneur (1). A combined didactic and clinical practice course on principles of business development and business management encompassing classroom instruction and planned work experiences in a pre-approved hospital training sites. Students have the opportunity to develop a business plan in their area of interest. Prerequisites: NTN 650, 651.

NTN 653 Culminating Experience (2). A combined didactic and clinical practice course on professional development, professional practice and supervised practice in the dietetics profession. Prerequisites: NTN 650, 651, 652.

NTN 656 Nutrition Research Literature Review (1-2). Course enables the student to complete an in-depth literature review on a nutrition research focus area in preparation for NTN 660. The research focus area must be approved by the student's graduate program advisor.

NTN 660 Research Project in Nutrition I (3). An advanced nutrition research focusing upon the student's area of research interest, enabling the student to survey and review the research literature, collect and analyze research data and prepare the research paper. Prerequisites: consent of graduate program advisor.

NTN 661 Research Project in Nutrition II (3). A continuation of the research project developed in NTN 660. Prerequisites: NTN 660, approved graduate statistics course, and permission of graduate program advisor.

NTN 663 Nutrition Communications (3). A capstone course for graduate students completing master's study in food and nutrition. Students present graduate research project in graduate committee meetings, seminar and research journal format. Prerequisite: NTN 661 and permission of instructor. CIP - 19

NTN 680 Independent Study in Nutrition (1-3). Course designed to permit independent graduate study in selected areas of nutrition, dietetics, and food management. Prerequisite: permission of the department chair or graduate coordinator.

NURSING (NUR)

NUR 515 Medical Ethics (3). Study of moral issues in medical ethics such as the rights of patients (truth-telling, confidentiality), the duties of health professionals, the allocation of scarce medical resources, and euthanasia. (Same as PHI 515.)

NUR 520 Critical Care Concepts and Application (3). A theoretical course which presents physiological and psychological concepts and their application relevant to critical care nursing practice. Theory focuses on the nursing process

during phases of common major dysfunction. The application of theory is addressed through a case study format with use of simulated clinical lab experiences. For graduate credit, three credit hours distributed as two credit hours theory; one credit hour clinical practicum. This is to meet clinical hour requirement for certification for advanced practice.

NUR 537 Complementary Healing Modalities (3). A combined theory/clinical course which explores complementary healing modalities as therapeutic nursing interventions that can be used with traditional medical practices or when traditional medical practices offer no cure or relief. A specific complementary healing modality (therapeutic touch) will be fully examined and practiced in the field setting. Prerequisites: NUR 204 or R.N. status; both must meet clinical requirements.

NUR 540 Directed Study (1-3). Prerequisite: consent of instructor.

NUR 550 Independent Study (1-3). Prerequisite: consent of instructor.

NUR 603 Concepts and Theories in Nursing (3). Introduction to the nature and uses of theory and the process of theory construction. Major theories of nursing and concepts and theories from the sciences basic to nursing are analyzed with emphasis on implications for nursing practices. Prerequisite: Admission to MSN program or approval of instructor.

NUR 605 Issues in Rural Health Care (3). Examines similarities and differences between rural and urban residents as they relate to health and the health care system. Compares ethical theories and implications for decision-making. Explores the evolution of our present health care system, initiatives for change and issues related to rural health care agencies. Examines the existing and future roles for nursing in rural America and impact on health. Prerequisite: Admission to MSN program or approval of instructor.

NUR 606 Scientific Foundations in Anesthesia I (3). This course is designed to provide an in-depth understanding of physiological principles as they apply to normal, pathological and clinical alterations in the respiratory system. In addition, the principles of chemistry and physics as applied to clinical nurse anesthesia will be presented. Prerequisites: Admission to nurse anesthesia program and NUR 673.

NUR 607 Scientific Foundations in Anesthesia II (2). Course is designed to provide an in-depth understanding of physiological principles as they apply to normal, pathological and clinical alterations in cellular and neurophysiology. Emphasis will be placed on anesthetic implications throughout the course. Prerequisites: NUR 606 and 632.

NUR 608 Scientific Foundations in Anesthesia III (2). Course presents an in-depth understanding of physiological principles as they apply to normal, pathologic, and clinical alterations in endocrine, renal, and hepatic physiology.

Emphasis is placed upon anesthetic implications throughout the course. Prerequisites: NUR 606, 607, 632, 633, and 636.

NUR 609 Scientific Foundations in Anesthesia IV (2). Course is designed to provide an in-depth understanding of physiological principles as they apply to normal, pathologic, and clinical alterations in cardiovascular physiology. Emphasis will be placed on anesthetic implications throughout the course. Prerequisites: NUR 606, 607, 608, 632, 633, 636, and 637.

NUR 610 Theoretical Foundations of Nurse Education (3). An identification and analysis of the theoretical foundations of nursing education in order to facilitate application of curriculum and instructional design, teaching and learning principles, assessment and evaluation, advisement, and other activities undertaken by nurse educators.

NUR 612 Nurse Educator Practicum I (2). This course is designed to provide experiences in developing competencies in nursing education. The focus is on didactic/classroom instruction and measurement of learning outcomes. Students are to assess and define their learning needs, select appropriate experiences for teaching experience, and participate in selected learning activities directed by a mentor/preceptor and a graduate faculty member.

NUR 613 Nurse Educator Practicum II (2). This course is designed to provide students with an opportunity to work closely with a nurse educator in the clinical setting. The focus is on clinical instruction and evaluation of student performance.

NUR 622 Diagnosis and Management of Adult Health Problems (3). Course designed to provide the CNS student the foundation necessary for the diagnosis and management of episodic illness and/or acute exacerbation of chronic illness in acutely or critically ill adult patients. Emphasis is placed on patient care problems organized by systems in the context of the nursing process, the CNS spheres of influence and advanced standards of practice and professional performance. Three credit hours distributed as two credit hours theory; one credit hour clinical practicum. This is to meet clinical hour requirement for certification for advanced practice. Prerequisites: NUR 520, 603, 605, 641, 642, and 673.

NUR 623 Advanced Adult Nursing-Acute Care (5). Course focuses on the essential characteristics and role development of the Clinical Nurse Specialist (CNS) in adult health, theory-based practice and interrelationships among concepts, phenomena, human responses, and nursing therapeutics. Values, beliefs, and attitudes about advanced nursing, health, and holism are explored within the rural setting. Emphasis is on competencies and outcomes within the spheres of influence in acute care settings. Prerequisites: NUR 603, 605, 641, 642, and 673.

NUR 624 Advanced Adult Nursing-Chronic Rehabilitation (4). Course focuses on the essential characteristics and role development of the

Clinical Nurse Specialist (CNS) in adult health, theory-based practice and interrelationships among concepts, phenomena, human responses, and nursing therapeutics. Values, beliefs, and attitudes about advanced nursing, health, and holism are explored within the rural setting. Emphasis is on competencies and outcomes within the spheres of influence in chronic/rehabilitation care settings. Prerequisite: NUR 603, 605, 641, 642, and 673.

NUR 630 Research in Nursing (3). Examination and analysis of quantitative and qualitative methods in the investigations of nursing phenomena. Critical analysis of nursing research studies is emphasized. Formulation of a researchable nursing problem and the strategies for its investigation is expected. Corequisite or prerequisite: NUR 603.

NUR 631 Evidence-Based Clinical Practice (3). Builds on NUR 630 to provide the foundation and methods for evidence-based clinical practice. This course focuses on the critical appraisal of external evidence, evaluation of indicators/outcomes of health care, application and dissemination of relevant findings to improve practice, and practice environments. Prerequisite: NUR 630.

NUR 632 Principles of Anesthesia Practice I (4). This course introduces the student to those concepts necessary to plan and execute an anesthetic individualized for the patient which ensures a margin of patient safety while meeting the surgical requirements. Prerequisite: Admission to nurse anesthesia program.

NUR 633 Principles of Anesthesia Practice II (2). Focuses on the role of the nurse anesthetist during the perioperative period. This course describes agents, techniques, indications, contraindications and complications relevant to regional anesthesia practice. Case management strategies are developed for the care of the obstetric patient undergoing anesthetic intervention. Prerequisites: NUR 606 and 632.

NUR 634 Principles of Anesthesia Practice III (2). Case management strategies are developed for the care of the pediatric patient; the patient requiring general, genitourinary or orthopedic surgical procedures; and patients undergoing anesthetic intervention due to traumatic injuries. Prerequisites: NUR 606, 607, 632, and 633.

NUR 635 Principles of Anesthesia Practice IV (3). Case management strategies are developed for the care of patients as they relate to specialty procedures such as open heart surgery, neurological anesthesia, thoracic surgery and endocrine surgery. This course will conclude with the specific anesthetic implications of outpatient anesthesia. Prerequisites: NUR 606, 607, 608, 609, 632, 633, and 634.

NUR 636 Pharmacology Anesthesia I (2). This course is designed to provide an in-depth understanding of the general principles of pharmacodynamics and pharmacokinetics as related to volatile gases, intravenous induction agents, and opioids as applied to the administration of anesthesia and pain management. Prerequisites: NUR 606 and 632.

NUR 637 Pharmacology Anesthesia II (3). Course is designed to provide an in-depth understanding of the general principles of pharmacodynamics and pharmacokinetics as related to muscle relaxants and other adjunct drugs utilized during anesthesia. Prerequisites: NUR 606, 607, 632, 633, and 636.

NUR 638 Pharmacology Anesthesia III (2). This course is a continuation of NUR 637 (prior pharmacology course) that will provide an in-depth understanding of the general principles of pharmacodynamics and pharmacokinetics as related to adjunct drugs utilized during anesthesia. Prerequisites: NUR 606, 607, 608, 632, 633, 636, and 637.

NUR 641 Advance Nursing Assessment (4). A combined theory/practicum course which introduces advanced assessment of patients in a variety of settings across the lifespan. Emphasis will be placed on advanced health assessment, growth and development across the lifespan, and health promotion and maintenance. Content will include techniques for comprehensive, holistic health assessment as well as focused assessment for common health problems. Corequisite: NUR 673.

NUR 642 Advanced Pharmacology (3). This course is designed to provide the advanced practice nurse with the theoretical and scientific basis for utilizing pharmacotherapeutics in advanced nursing practice. Throughout the course the role of clinical protocols and the privileges and responsibilities of prescription are emphasized. Prerequisites: admission to M.S.N. program. Corequisite: NUR 673.

NUR 644 Primary Care of the Family I (6). This is the first of a two-course sequence designed to provide advanced knowledge of acute and chronic health problems of individuals and families of various age groups in rural settings. Emphasis is placed on pathology, assessments, diagnoses, therapeutic modalities and evaluations related to specific health problems of various age groups, including high-risk pregnancy, perinatal health care and geriatric health care. Additional role parameters of the family nurse practitioner will be included. A practicum is included in this course. Prerequisites: NUR 603, 605, 641, and 673. Corequisites: NUR 630, 642.

NUR 645 Primary Care of the Family II (7). This is the second of a two-course sequence designed to provide advanced knowledge of acute and chronic health care problems of individuals and families of various age groups in rural settings. Emphasis is placed on pathology, assessments, diagnoses, therapeutic modalities and evaluations related to management of acute and chronic problems within the context of the family including special problems related to the aged. Additional role parameters of the family nurse practitioner will be included. A practicum is included in this course. Prerequisite: NUR 644.

NUR 650 Advanced Clinical Nurse Specialist Integration Practicum II (5). This integration practicum is the capstone experience designed to provide the opportunity to integrate and synthesize

the CNS role. Prerequisites: NUR 623 and 624. Corequisite: NUR 622.

NUR 651 Clinical Practicum I (3). Provides the student opportunity to apply the theories of nurse anesthesiology practice in the functional setting. Involves supervised experience in the role of the nurse anesthetist. Prerequisites: NUR 606, 607, 608, 609, 632, 633 and 634.

NUR 652 Clinical Practicum II (3). Offers practical experience and daily participation in anesthetic administration and related patient care. Designed to comprehensively promote growth, awareness and competence in the skills and experiences required prior to readiness for independent practice and certification process. Prerequisites: NUR 606, 607, 608, 609, 632, 633, 634, 635 and 651.

NUR 653 Clinical Practicum III (3). Offers practical experience and daily participation in anesthetic administration and related patient care. Designed to comprehensively promote growth, awareness and competence in the skills and experiences required prior to readiness for independent practice and certification process. Prerequisites: NUR 606, 607, 608, 609, 632, 633, 634, 635, 651 and 652.

NUR 654 Advanced Family Nurse Practitioner Integration Practicum (9). This practicum offers experience in integrating and synthesizing components of theory, practice and research. Focus is on role development of the family nurse practitioner in the rural setting. Through comprehensive, holistic health assessment the focus is on the development of therapeutic plans and health promotion and maintenance activities for the family as a whole as well as individual members. Emphasis will be on integrating all previous course work and assimilating the nurse practitioner role. Prerequisite: NUR 645. Corequisite: NUR 631.

NUR 655 Seminar in Nurse Anesthesia I (3). Focuses on pertinent didactic information necessary for integration into clinical practice. Students participate in the development of strategies to manage critical and/or infrequent clinical anesthesia related problems. Prerequisites: NUR 605 and 651. Corequisites: NUR 635 and 652.

NUR 656 Seminar in Nurse Anesthesia II (3). This course builds/expands on NUR 655. Students participate in the development of strategies to manage critical and/or infrequent clinical anesthesia related problems. Prerequisites: NUR 635, 652, and 655. Corequisite: NUR 653.

NUR 657 Advanced FNP Integration Practicum for the APN (4). This practicum offers experience in integrating and synthesizing components of theory, practice, and research. Focus is on role development of the family nurse practitioner in the rural setting. Through comprehensive, holistic health assessment the focus is on the development of therapeutic plans and health promotion and maintenance activities for the family as a whole as well as individual members. Emphasis will be on integrating all previous course work and assimilating the nurse practitioner role. Prerequisite: NUR 645.

Nursing (NUR)

NUR 660 Special Topics (3). This course is designed to assist students in expanding their knowledge base and developing additional skills in the field of nursing. May be repeated twice for credit. Courses taught as special topics may have a field or clinical component (two hours lecture plus three hours lab). These will be further defined within the particular course. Prerequisite: permission of instructor.

NUR 661 Nursing Staff Development (2). An identification and analysis of the roles and responsibilities of nursing staff development in healthcare settings. The student will develop a mentor relationship with an experienced staff development nurse to work on a designated and/or self-designed project during practicum.

NUR 662 Instruction Design for Active Learning (2). An identification and analysis of the tools and techniques used to design meaningful learning experiences for nursing education. The student will develop an understanding of educational paradigms consistent with active learning in order to assist in the design of teaching strategies that produce desired student outcomes.

NUR 663 Instructional Technology Nurse Education (2). An identification and analysis of the tools and techniques used for teaching with technology. The student will develop an understanding of the educational paradigms consistent with distance education and interactive technology in order to assist in the design and/or evaluation of a variety of learning media.

NUR 664 Legal/Ethical Issues (2). An identification and analysis of the legal and ethical issues facing nurse educators. It provides students with the tools necessary to apply legal and ethical theories to decision-making within the scope of practice as nurse educators in institutional, clinical, community, and cross-cultural settings.

NUR 665 Multicultural Issues (2). An identification and analysis of the multicultural issues relevant to nursing education. The student will develop a mentor relationship with an individual who is culturally different than the student in order to understand the values of differentiation and inclusiveness in nursing education.

NUR 673 Pathophysiology in Advanced Nursing Practice (3). Course designed to provide an introduction to pathophysiology with applications for advanced registered nursing (ARNP) practice. Prerequisite: admission to graduate nursing program.

NUR 698 Thesis (3).

NUR 699 Thesis (3).

OCCUPATIONAL SAFETY AND HEALTH (OSH)

OSH 511 Hazardous Waste Site Operations (3). This course will train the student to become a hazardous materials specialist. The course will explore the various aspects of the hazardous waste site (especially Superfund Sites), including

rights and responsibilities, hazard recognition and monitoring.

OSH 523 Occupational Diseases (3). Survey of occupational diseases covering routes of entry and modes of action. In particular, the pathogenicity, epidemiology and diagnosis of occupational diseases will be stressed as they relate to chemical, biological and radiological hazards, dermatoses, airway diseases, plant and wood hazards, chemical carcinogens, and pesticides. Prerequisite: CHE 106 or CHE 210.

OSH 527 Air Contaminants and Industrial Ventilation (3). A course examining air contaminant problems, gas calculations, and industrial ventilation. This course covers the EPA laws and regulations, and the scientific principles and controls of classical air pollution problems. It also focuses on the engineering evaluation and design of industrial ventilation systems. Prerequisite: OSH 320 or consent of instructor. (Same as CET 527.)

OSH 536 Motor Fleet Safety (3). A basic introduction to problems and practices of motor fleet safety programming with emphasis on regulatory requirements.

OSH 545 Loss Control Measurement and Management (3). An analysis of actual or potential exposures to hazards and their resultant losses posed by agents, energy forms, forces and substances in the workplace; measuring the loss exposures created by those hazards; and managing the appropriate counter-measuring to compensate for perils presented by those losses. Prerequisite: OSH 192, 287, 353, and 420.

OSH 546 Fundamentals of Risk Control (3). An analysis of risk control as a component of risk management, the systematic process of managing an organization's risk exposures to achieve its business objectives in a manner consistent with public interest, human safety, environmental factors, and the law. Risk control consists of the administrative, procedural and engineering activities undertaken with the intent of preventing accidental or unplanned loss consistent with the organization's overall risk management plan.

OSH 550 Safety and Health Program Management and Training (3). The concepts, relationships and principles of managing the occupational safety and health function and the development of training procedures and practices to integrate that function into the organization. Prerequisite: OSH 192 and 287.

OSH 571 Problems in Safety and Health (1-3). Individual study and research relating to safety and health. May be repeated for a maximum credit of six hours. Prerequisites: approval of problem before registering for course and junior standing.

OSH 578 Workshop in Safety and Health (1-3). Workshops on topics pertinent to industry and technology. May be repeated for a maximum credit of six hours.

OSH 591 Engineering and Technical Aspects of Safety (3). A study of the properties and applications of industrial materials, manufacturing

processes, engineering graphics, electricity, materials testing, selected plant facilities and other aspects of the work environment. Emphasis is placed on the application of this information to safety practices, hazard mitigation and loss control. Prerequisites: OSH 192 and ITD 120.

OSH 621 Industrial Hygiene II (3). Advanced, in-depth study of harmful chemical, biological and physical agents found in the workplace. Emphasis is on analytical methods, control measures, and monitoring and surveillance techniques. Prerequisite: OSH 420.

OSH 622 Toxicology of Industrial Materials (3). A study of the environmental and occupational health effects and hazards associated with the exposure to industrial chemicals and contaminants. Emphasis is given to laboratory animal and statistical risk toxicological studies and case histories, compliance testing and engineering controls. Prerequisite: OSH 420.

OSH 626 Industrial Hygiene Sampling Strategies (3). Advanced in-depth study of the approaches to workplace sampling. Emphasis is on statistical sampling methods, passive monitoring, colorimetric devices, breathing zone and area sampling strategies. Course work will include laboratory exercises and field experience. Prerequisites: OSH 420, PHY 120 and PSY 200.

OSH 637 Biostatistics and Probability (3). The study and application of biostatistics and probability distributions in environmental and health-related sampling. Emphasis is given to hypothesis testing and graphical determination of confidence intervals. This course will also cover the use and application of log scales and their application in log-normal distributions. Prerequisite: MAT 135.

OSH 644 Graduate Cooperative Education (3). May be repeated for a maximum of six credits. Prerequisite: permission of chair. Graded pass/fail.

OSH 650 OSH Organizational Leadership and Management (3). An overview of the safety and health leader's role in accomplishing organizational objectives emphasizing leadership and management. Concepts covered include safety and health-related leadership issues, implementation of codes and standards, integration of leadership with safety engineering and management principles as well as leadership skills including communication, motivation, initiating change, team building, delegation, and credibility. Prerequisite: graduate status.

OSH 654 Philosophy of Safety and Health (3). Examination of past and current philosophical beliefs, practices and approaches to controlling safety and health hazards, risks exposure, accidents and loss.

OSH 655 Legal Aspects of Safety and Health (3). An analysis of legislation, liability and litigation in safety and health.

OSH 656 Ergonomics and Biomechanics (3). This course is concerned with the health, behavioral and technical sciences and their role in

the reduction of worker stress. These factors are thus related to the neuro-muscular and skeletal systems and the mechanics involved in efficient workplace design.

OSH 657 Current Literature and Research in Safety and Health (3). Survey of current literature and research in safety and health, including accident causation and prevention, hazard abatement, risk management, and loss control. Prerequisite: graduate standing.

OSH 658 Introduction to Occupational Epidemiology (3). This course will give the students an overview of biostatistics which relate to occupational field investigations, including rates, ratios and proportions, charts, tables and graphs; the 2x2 table; measures of central tendency; and significance testing. Basic principles of epidemiology necessary to understand scientific literature, monitor data in industry, and/or to conduct scientific investigations or surveillance activities will be taught. The major types of epidemiologic study (cohort, case referent and cross-sectional) will be described. Students will learn how to calculate rate ratios, odds ratio and attributable risk. Epidemiologic principles of reliability, validity, bias, screening, and surveillance will be discussed.

OSH 663 Applied Workplace Ergonomics (3). This course is designed to provide the student the opportunity to apply the principles of ergonomics to the work environment. It is intended to offer students practical experience in applying ergonomics through the development of an industrial case study.

OSH 670 Internship in Safety and Health (3). Supervised work experience in safety and health-related operations focusing on the career objectives and educational objectives of the student. Evaluation of the experience made by the department. Graded pass/fail.

OSH 680 Graduate Seminar in Occupational Safety and Health (3). This course involves on-site analysis of safety and health programs of area industries. Students are exposed to a variety of industrial settings and have the opportunity to interact with practicing safety and health professionals. Extensive weekly travel is required. Students also organize and present a seminar related to occupational safety and health.

OSH 687 Wastewater Treatment (3). A study of the operation and process design of wastewater treatment systems. This course focuses on aerobic biological treatment and process control for the activated sludge system. Topics will include treatment evaluations, trouble shooting, system design, and operational control strategies. Prerequisites: OSH 320 or consent of instructor.

OSH 689 Solid and Hazardous Waste Treatment (3). A study of the engineering related principles and practices utilized in the solid and hazardous waste treatment and disposal field. Topics include sludge treatment and dewatering, RCRA hazardous waste regulations, waste minimization, incineration, landfills, and groundwater monitoring and modeling. Prerequisites: OSH 320 or consent of instructor.

OSH 697 Research in Environmental Health and Safety (3). Designed to address issues and problems related to the environment and to scientifically reach solutions to existing and potential problems and hazards that threaten the health and safety in any industrial/environmental setting. Prerequisite: consent of instructor.

OSH 698 Thesis (3).

OSH 699 Thesis (3).

PHYSICAL EDUCATION (PHE)

PHE 530 Intramurals and Interscholastic Athletics (3). A study of the administration policies and problems of intramurals and athletic programs on the high school and collegiate level. Students taking this course for graduate credit will be required to do additional work.

PHE 601 School and Community Recreation (3). Study of the role of public education in the total recreation program of the community.

PHE 602 Legal Issues in Sport and Physical Activity (3). This course is designed to help the student develop knowledge, understanding, and appreciation of the law and legal issues as related to sport and physical activities. (Same as REC 602.)

PHE 605 Curriculum in Health and Physical Education (3). A course designed to acquaint the student with the aims and objectives of curriculum design; to alert the student to innovations, new techniques and research in this area; and to equip the student with guidelines for good curriculum construction.

PHE 615 Model Physical Education Programs (3). This course is designed to help teachers and administrators identify exemplary transferrable models of teaching and programming which they can adapt or adopt for their own professional use.

PHE 620 Current Trends and Issues in Health and Physical Education (3). A review of the current research in the fields of health and physical education.

PHE 630 Special Topics (3). Seminar for graduate students relating to a current topic in the fields of health and physical education. May be repeated once for credit.

PHE 680 Independent Study in Health and Physical Education (1-3). Prerequisite: permission of program coordinator.

PHE 698 Thesis (3).

PHE 699 Thesis (3).

PHILOSOPHY (PHI)

PHI 540 Seminar (3). Study of selected topics or the thought of a particular philosopher. This course may be repeated for credit.

PHI 550 Directed Study (1-3). Readings or other study in advanced topics. This course may be repeated for credit.

PHI 640 Special Topics (3). An examination of a traditional or contemporary topic in philosophy. May be repeated for credit. Prerequisites: permission of philosophy program coordinator.

PHI 650 Directed Study (1-3). Supervised independent work in philosophy. May be taken more than once for credit. Prerequisite: permission of philosophy program coordinator.

PHYSICS (PHY)

PHY 505 Meteorology (3). Descriptive treatment of weather phenomena. Course covers weather changes, air masses and fronts; collection and use of meteorological data; study of maps and weather forecasting. Not applicable toward master of science degree. Graduate credit for M.A.T. candidates only.

PHY 513 Principles of Astronomy and Meteorology (3). An examination of the principal objects of the solar system and the stellar universe and the fundamental theories concerning them. Examination and discussion of the composition and structure of the earth's atmosphere. Atmospheric motions, weather systems and weather forecasting. Graduate credit for M.A.T. candidates only.

PHY 515 Special Topics (3). Topics of current interest in physics and engineering. Delivery methods may include lecture, seminar, directed study, and laboratory. May be repeated for credit as different topics are featured. Prerequisite: consent of instructor.

PHY 520 Independent Study (1-3). Supervised reading course in specialized topics for upper-division students of high standing. May be repeated for a maximum of three hours. Prerequisites: major and consent of instructor.

PHY 530 Mechanics I (3). Dynamics of particles, coordinate transformation, and non-inertial reference systems. Celestial mechanics. Dynamics of systems of particles. Prerequisites: PHY 255 and MAT 411 (or concurrent registration).

PHY 531 Mechanics II (3). General motion of rigid bodies. Lagrangian mechanics, theory of small vibrations and special theory of relativity. Prerequisite: PHY 530.

PHY 535 Introduction to Quantum Mechanics (3). Fundamental course in non-relativistic quantum mechanics. Prerequisite: PHY 580 or concurrent registration.

PHY 570 Introduction to Modern Physics (3). Concepts of atomic, nuclear, solid state and particle physics. Philosophical, historical and cultural aspects are discussed. Prerequisite: PHY 255 or 121. Open to graduate, non-physics students only. Restriction: A student cannot receive credit for PHY 570 if the student has credit for PHY 370.

PHY 575 Solid State Physics (3). Fundamental physical properties of the solid state of matter. Prerequisite: PHY 460.

Physics (PHY)

PHY 580 Modern Physics I (3). An investigation of the physical phenomena explained since 1900 by the introduction of the discreteness of nature and the wave-particle duality, leading to the development of wave mechanics. Topics include Planck radiation, photoelectric and Compton effects, pair production and annihilation, the nuclear atom and Bohr theory, the deBroglie hypothesis, the Schrodinger equation and applications to atomic physics. Prerequisites: PHY 460 or 530.

PHY 581 Modern Physics II (3). Continuation of PHY 580 including angular momentum theory, perturbation theory, L-S coupling, Zeeman effects, nuclear properties, reactions and structures, particle accelerators and elementary particle physics. Prerequisite: PHY 580.

PHY 583 Applied Optics (3). Fresnel diffraction, polarization, Maxwell's equations, laser theory and application, holography, spatial filtering and applications. Prerequisites: PHY 350 and 460.

PHY 590 Mathematical Methods in Physics and Engineering I (3). Applications of mathematics to physical and engineering problems, curvilinear coordinates, analytic functions, transform theory, convolutions, Fourier series. Prerequisites: MAT 411, PHY 330 or 530 or consent of instructor.

PHY 591 Mathematical Methods in Physics and Engineering II (3). Solutions of partial differential equations, special functions, Green's function. Prerequisite: PHY 590 or consent of instructor.

PHY 592 Problems in Advanced Physics and Engineering I (3). An applied course for advanced students in physics and engineering. The problems will be planned on an individual basis with topics including Monte Carlo and molecular dynamics techniques, fluidized-bed and numerical fluid dynamics, surface physics, cloud and aerosol physics, crystal growth and analog modeling of experiments. Students will be required to design, implement and test appropriate strategies for the solution of the chosen problem using their knowledge and understanding of basic physics and engineering principles. Prerequisite: CSC 420 or MAT 442 or consent of instructor.

PHY 593 Problems in Advanced Physics and Engineering II (3). A continuation of PHY 592. Prerequisites: PHY 592 or consent of instructor.

PHY 595 Advanced Laboratory II (1-2). A continuation of PHY 495. Two to four hours laboratory per week. May be repeated for a maximum of two hours. Prerequisite: consent of instructor.

PHY 596 The History of Modern Physics (3). A detailed examination of the origin of quantum theory. Consideration is given to the notable works of Planck, Lorentz, Einstein, Stark, Haas, Sommerfeld, Nernst, Bohr and others. Senior standing in physics with a 3.25 average in major. Lectures and conferences.

PHY 599 Senior Research (1-3). Introduction to research practices, periodicals and literature of physics. Problems arranged individually with staff members. Formal, scientific report of work

required. Prerequisites: senior standing and permission of staff.

PHY 620 Independent Study (1-3). Supervised reading course in advanced topics for graduate students. May be repeated for a maximum of three hours. Prerequisites: major and consent of instructor.

PHY 630 Theoretical Mechanics (3). Advanced mechanics of particles, systems of particles, and continuous media. Prerequisite: PHY 530 or equivalent.

PHY 635 Quantum Mechanics I (3). Matrix and wave mechanical methods for problems in the structure of matter. Prerequisite: PHY 535 or equivalent.

PHY 636 Quantum Mechanics II (3). Continuation of PHY 635. Prerequisite: PHY 635.

PHY 640 Statistical Mechanics (3). Statistical study of the thermal properties of matter. Prerequisite: PHY 580 or equivalent.

PHY 644 Graduate Cooperative Education (3). May be repeated for a maximum of six credits. Graded pass/fail. Prerequisite: permission of chair.

PHY 660 Electromagnetic Theory I (3). Advanced treatment of electric and magnetic fields. Prerequisite: PHY 461 or equivalent.

PHY 661 Electromagnetic Theory II (3). Continuation of PHY 660. Prerequisite: PHY 660.

PHY 675 Theory of Solid State (3). Selected advanced topics in solid state physics. Prerequisite: PHY 575 or equivalent.

PHY 680 Spectroscopy (3). Study of various aspects of atomic and molecular spectra. Prerequisite: PHY 580 or concurrent registration.

PHY 681 Spectroscopy Laboratory (1). Laboratory course to accompany PHY 680. Two hours laboratory per week. Prerequisite: PHY 680 or concurrent registration.

PHY 682 Nuclear Theory I (3). Theories of the structure of nuclei and their interactions. Prerequisite: PHY 581 or equivalent.

PHY 683 Nuclear Theory II (3). Continuation of PHY 682. Prerequisite: PHY 682.

PHY 697 Seminar (1). Weekly meeting of staff and advanced students for reports and discussion of recent developments in physics and of research in progress in the department. Attendance is required for two semesters. Credit is given for only one semester.

PHY 698 Research and Thesis (3). Problems and hours arranged individually with student's research advisor. Prerequisites: major and consent of instructor.

PHY 699 Research and Thesis (3). Problems and hours arranged individually with student's research advisor. Credit in accordance with work

accomplished. Prerequisites: major and consent of instructor.

PLANNING, URBAN AND REGIONAL (PLN)

PLN 500 Recreation Geography and Planning (3). Practical application of problem-solving techniques and processes to recreational management and planning. Focus placed on site planning and development. (Same as GSC 500.)

PLN 507 Land Use Planning (3). Analyze the principles and techniques utilized in the planning process. Emphasis is placed on the practical aspects of planning — the needs, problems and proposed solutions. (Same as GSC 507.)

PLN 521 Geographic Information Systems (4). Techniques course that introduces digital georeferenced information systems, including data capture, editing and encoding techniques, data storage structures, database management systems, data analysis and model development, and information display methods. (Same as GSC 521.)

PLN 523 Problems in Urban Geography and Urban Planning (3). Theories, techniques and research in urban geography and planning. Focus placed on the designs and strategies addressing present day urban problems. (Same as GSC 523.)

PLN 644 Graduate Cooperative Education (3). May be repeated for a maximum of six credits. Graded pass/fail. Prerequisite: permission of chair.

PLN 693 Special Problems in Urban Planning (3). Course is designed for students who have an aptitude for research in urban planning. May be repeated one time for credit. Prerequisite: consent of instructor.

POLITICAL SCIENCE (POL)

POL 542 Government and Business (3). The role of government and politics in the regulation of business activities and the administration of major legislative enactments.

POL 545 Constitutional Law I: Developments & Trends (3). A political science course that surveys the development of and historic trends in selected subjects of constitutional law. (Same as LST 545.)

POL 546 Constitutional Law II: Civil Liberties and Civil Rights (3). A political science course that studies the leading court decisions and their impact on the development of American Constitutional Law in the subject areas of civil liberties (Amendment I), civil rights (Amendments IV, V, VI, VIII, and IX), and the equal protection and due process clauses of Amendment XIV. Prerequisites: none. (Same as LST 546.)

POL 551 Politics of Europe (3). The dynamics of change in the political systems of Europe, focusing on government institutions and the development of the European Union.

POL 552 Government and Politics of the Former Soviet Union (3). The governmental institutions and political processes of the former Union of Soviet Socialist Republics, with a special emphasis upon the Russian nation.

POL 553 Government and Politics of Latin America (3). The dynamics of change in the political systems of Latin America, focusing on the problems and patterns of political and economic development.

POL 554 Government and Politics of Asia (3). The governmental institutions and political processes of China, Japan, and other selected states in Asia.

POL 556 American Foreign Policy (3). The formulation and implementation of U.S. foreign policy.

POL 557 International Law and Organizations (3). The origin and development of international law and international organizations.

POL 558 The United States in Indochina (Vietnam) (3). An examination of the United States' experience in Indochina, with special emphasis on Vietnam. With reference to national self-interest and the relationship of Indochina to world affairs, the course will examine the extent of American involvement from the end of World War II to the present.

POL 571 Contemporary Public Policy Issues (3). Consideration of social, economic, and political influences on the formation, direction, and implementation of public policy, with special emphasis on current issues.

POL 572 Public Planning and Evaluation (3). An examination of major planning and evaluation techniques of governmental programs.

POL 573 Public Budgeting and Finance (3). This course examines budgeting as a tool of governmental economic and political policy. Specifically, the course considers the evolution and purposes of budgeting, with special attention given to recent efforts to improve government resource allocation. Required of all M.P.A. students.

POL 575 Human Resource Administration (3). An intensive examination of personnel administration in federal, state, and local governments, including such topics as merit systems, recruitment, testing, selection, and equal employment opportunity.

POL 576 Law in Public Administration (3). An examination of the role of law in the administrative process. Topics to be covered include administrative rulemaking and adjudication, enabling statutes, open records and open meetings laws, procedural due process, and civil liability and immunity for public employees and governments. (Same as LST 576.)

POL 577 Labor Law and Public Policy (3). Traces the development of the principles of labor law and labor legislation as well as their administration at the national, state, and local levels in the United States. Uses administrative and court

decisions and policy analysis to examine issues of current significance concerning labor relations. Prerequisite: MGT 350 or consent of instructor. (Same as MGT 577.)

POL 595 Special Problems (1-3). Supervised readings or research in selected subjects designed to supplement regular course offerings. Requires chair's approval. Restricted to junior and senior students. May be repeated up to six hours. Only three hours may count toward major. Prerequisite: Fifteen hours of POL courses with a minimum overall GPA of 3.0 and a minimum GPA of 3.25 for POL courses taken for the major or minor, and chair's approval.

POL 641 Seminar in American Government (3). An advanced examination of one or more selected problems in American government.

POL 651 Seminar in International Relations (3). An in-depth analysis of problems of international relations and foreign policy.

POL 652 Seminar in Comparative Government (3). An advanced analysis of different political systems in the world, with emphasis upon the comparative approach.

POL 660 Research Methods (3). Examines the process of research in public affairs, with an emphasis on quantitative methods and techniques. Required of all M.P.A. students. Prerequisites: MAT 135 or 560 or their equivalent.

POL 661 Seminar in Political Theory (3). An intensive examination of major political theories and ideologies.

POL 670 Foundations of Public Administration (3). A graduate-level introduction to the study of public administration, covering substantive topics in the field as well as the political dimensions of public service and the ethical issues faced by government practitioners. Emphasis is placed on the development of the discipline as a field of inquiry. Required of all M.P.A. students. Must be taken in the first semester of coursework in the MPA program.

POL 671 Public Policy Analysis (3). Problems and methods in perception of public problems, determination of goals, generation and evaluation of alternatives, and policy choices. Emphasis on political and analytical methods of policymaking. Required of all M.P.A. students.

POL 674 Public Organizations (3). An analysis of governmental bureaucracy as a formal organization, with emphasis on the roles and responsibilities of and the constraints on the public executive in a political environment. Required of all M.P.A. students.

POL 675 Intergovernmental Relations (3). A seminar on the evolution, growth, and present nature of federal, state, and local interrelationships, with an emphasis on grants-in-aid and their implementation.

POL 677 Local Government Administration (3). An intensive study of the economic, political, and social environments of cities and other

forms of local governments and the impact those environments have on local government administration. The roles and tasks of local government management, as affected by metropolitan conditions and state, regional, and federal governments, are also examined.

POL 678 State and Regional Government, Politics and Administration (3). Comparative study of state and regional governments, administration, policies, and problems. Empirical research concerning structures, institutions, and political processes and the relationship between them and the policy outputs is examined and analyzed. Contemporary issues are examined from a comparative perspective to determine explanations for the variation among executives, legislatures, and bureaucracies in addressing or resolving these issues.

POL 679 Seminar in Public Sector Labor Relations (3). An intensive examination of the emergence and impact of unionization and collective bargaining in the public service, with emphasis on the role of the public administrator as bargaining agent. The course concludes with a simulation exercise.

POL 680 Topical Seminar in Public Administration (3). Inquiry into selected topics and problems in the field of public administration. May be repeated for a maximum of six hours provided topics vary.

POL 685 Public Administration Capstone (3). A course integrating the theories and methods of public administration in a major research project related to a substantive management or analytic problem in the public sector. Students must propose, execute, and publicly defend their project after completing a major review of public administration literature. Normally this course shall be taken in the last semester of graduate work with the M.P.A. program. Required for all MPA students. Prerequisite: POL 573, 575, 660, 670, 671, and 674.

POL 690 Administrative Internship (1-6). A full-semester directed internship with an agency concerned with the administration of public affairs. Graded pass/fail. Prerequisite: completion of nine hours from the following: POL 573, 575, 660, 670, 671, or 674; 3.0 GPA in all graduate work, and permission of chair.

POL 695 Special Problems (1-3). Supervised readings or research in selected subjects designed to supplement regular course offerings. Prerequisite: completion of nine hours from the following: POL 573, 575, 660, 670, 671, or 674; 3.25 minimum GPA, and permission of chair.

PSYCHOLOGY (PSY)

PSY 503 Psychology of Small Group Behavior (3). A survey of current theory and research regarding the behavior of individuals in groups. Topics addressed include group formation and development, physical environment, personal characteristics of group members, group composition, group structure, leadership and group tasks. Students enrolled for graduate credit will have

Psychology (PSY)

additional requirements to fulfill in this course. Prerequisite: PSY 303.

PSY 540 Drugs, Alcohol and Behavior (3). This course provides a survey of the social, biological and psychological aspects of substance abuse, chemical dependency and addictive disorders. Prerequisite: PSY 180.

PSY 545 Behavior Modification (3). This course presents assumptions, concepts and methods of behavior modification. Emphasis is on broad psychological theory and application to human problems. Students enrolled for graduate credit will be required to fulfill additional requirements. Prerequisites: PSY 180 or consent of instructor.

PSY 570 Applied Research Design and Analysis (4). An advanced course designed to develop a comprehensive, integrated, and applied knowledge of issues surrounding the design, implementation, analysis, and evaluation of psychological research. Topics covered include research ethics, reliability and validity, descriptive and experimental design issues, and advanced statistical techniques. Students will be expected to design, conduct, and report the results of an original research project. Students enrolled for graduate credit will be required to fulfill additional requirements. Prerequisites: PSY 300 and 301 or consent of instructor.

PSY 581 Abnormal Psychology (3). Introduction to the definition, classification, causes and treatment of abnormal behavior. Research methodologies and findings receive emphasis equal to that of "clinical" or applied considerations. Students enrolled for graduate credit will be required to fulfill additional requirements. Prerequisite: PSY 180.

PSY 584 Industrial and Organizational Psychology (3). A survey of current theory and research regarding human behavior in industrial and organizational settings. Topics addressed include selection and placement, training and development, motivation, job satisfaction and performance, leadership, work environment, human factors, engineering and safety. Students enrolled for graduate credit will be required to fulfill additional requirements. Prerequisite: PSY 180.

PSY 589 Personality (3). The organization of the psychological characteristics which contribute to the uniqueness of the individual. Students enrolled for graduate credit will be required to fulfill additional requirements. Prerequisite: PSY 180.

PSY 591 Statistics (3). Basic concepts of statistics are stressed. Specific topics include techniques dealing with single distributions, some correlational methods, probability, and an introduction to inferential statistics. Students enrolled for graduate credit will be required to fulfill additional requirements. Prerequisite: PSY 180.

PSY 595 Culture, Language and Personality (3). Roles of culture and language, personality-language, and personality-culture. Students enrolled for graduate credit will be required to fulfill additional requirements. Prerequisites: PSY 180.

PSY 602 Graduate Seminar (1-3). Topical seminars in psychology. May be repeated to a maximum of three hours. Prerequisites: graduate standing in psychology and consent of instructor.

PSY 620 Graduate Seminar in Professional and Ethical Issues (1). A survey and discussion of the professional aspects of clinical psychology and the ethical standards of the field. Emphasis is placed on the ethical principles and statements of the American Psychological Association in regard to the practice of psychology, the conduct of research, and the use of psychological tests. Prerequisites: graduate standing in psychology and consent of instructor.

PSY 621 Biological Bases of Behavior (3). An advanced-level survey of the biological processes that underlie behavior. Prerequisites: graduate standing in psychology and consent of instructor.

PSY 622 Cognitive Bases of Behavior (3). An advanced-level survey of the cognitive processes that underlie behavior. Prerequisites: graduate standing in psychology and consent of instructor.

PSY 623 Social Bases of Behavior (3). An advanced-level survey of the social processes that underlie behavior. Prerequisites: graduate standing in psychology and consent of instructor.

PSY 624 Developmental Bases of Behavior (3). An advanced-level survey of the developmental processes that underlie behavior. Prerequisites: graduate standing in psychology and consent of instructor.

PSY 644 Graduate Cooperative Education (3). May be repeated for a maximum of six credits. Graded pass/fail. Prerequisite: permission of chair.

PSY 645 Clinical Measurement and Evaluation I (3). Emphasis is placed on administration, scoring and clinical interpretation of a variety of intelligence tests. Report writing and research underlying intelligence tests and psychological evaluations are presented. Prerequisite: consent of instructor.

PSY 650 Psychometric Theory (2). The theory, statistical methods and ethical considerations involved in the construction and evaluation of scales and other devices for measurement.

PSY 652 Univariate Research Design and Statistics (3). Advanced experimental design and research methodology is combined with a detailed treatment of analysis of variance. Prerequisites: PSY 300 or 591, or consent of instructor.

PSY 654 Evaluation Research (2). Emphasis on quasi-experimental research designs, sequential and nonparametric statistics, and the use of research methodology in summative and formative evaluation of social programs.

PSY 661 Psycholinguistics (3). Emphasis on language and cognition, measurement of meaning, language disorders, communication, theory and language, and behavior. Prerequisite: Consent of instructor.

PSY 664 Psychopathology (3). Theories and research pertaining to the etiologies, symptoms and prognosis of various behavior disorders are discussed. Prerequisite: consent of instructor.

PSY 665 Clinical Measurement and Evaluation II (3). Emphasis on the theory and application of personality tests used in clinical settings. Practice in the administration, scoring and interpretation of various clinical instruments will be afforded. Prerequisites: PSY 645 and consent of instructor.

PSY 666 Advanced Clinical and Ethics Seminar (1-2). This course provides group discussion of active clinical cases, with attention paid to increasing diagnostic accuracy and sophistication, learning varied therapeutic approaches and becoming proficient in clinical interventions with demonstrated empirical support. Emphasis is placed on the understanding and resolution of legal and ethical issues that arise in clinical work. This course may be repeated for a maximum of four hours of credit. Graded pass/fail. Prerequisites: PSY 620, 645, 664, 665, 670 and concurrent enrollment in PSY 667. This course is limited to students currently enrolled in the MSU master's degree program in clinical psychology.

PSY 667 Practicum in Psychology (3). The student will work under close supervision in a clinical installation. Problems concerning psychopathology, diagnostics and psychotherapy will form the core of the work. This course may be repeated for a maximum six semester hours of credit. Prerequisites: PSY 645, 664, 665, and 670 with a 3.0 GPA in those four courses; plus at least two of PSY 621, 622, 623, 624, 650, 652, 654 or 688; and consent of instructor.

PSY 668 Advanced Practicum (1-3). The student will work under supervision of a licensed psychologist in a mental health facility. Emphasis is placed on the application of assessment and psychotherapy techniques with families, adults and children. This course may be repeated for a maximum of six hours of credit. Prerequisites: PSY 645, 664, 665, 667 and 670, with a minimum GPA of 3.0; at least two of the following: PSY 671, 672, 682 or 686; and consent of the instructor. Limited to students enrolled in the MSU master's degree program in clinical psychology.

PSY 670 Psychotherapeutic Procedures (3). Theories, practice and research are reviewed, with special emphasis on therapeutic procedures. Prerequisite: consent of instructor.

PSY 671 Behavior Therapy (3). An exploration of the learning foundations of behavior therapy together with a review of the methods, applications and research concerning behavior therapy. Prerequisites: graduate standing in psychology and consent of instructor.

PSY 672 Family Therapy (3). An advanced clinical course with emphasis on the major family therapy theories, ethical issues, and consideration of cultural factors in working with families. Practice will be afforded for students in the application of assessment and therapeutic procedures with families. Prerequisites: PSY 664, 670, previous or concurrent enrollment in PSY 667, and consent of instructor.

PSY 680 Advanced Child Psychology (3). Analysis and appraisal of scientific studies dealing with the problems characteristic of the childhood period. Observations and library research projects supplement class assignments.

PSY 681 Advanced Adolescent Psychology (3). Analysis and appraisal of scientific studies dealing with the problems characteristic of the adolescent period. Observations and library research projects supplement class assignments.

PSY 682 Child Clinical Psychology (3). An advanced course with emphasis in developmental theories in relation to childhood psychopathology, therapeutic procedures with children, and specialized assessment techniques. Prerequisites: PSY 664, 670 and consent of instructor.

PSY 683 Tests and Measurements (3). The selection, administration and uses of psychological tests are discussed, with emphasis on application in educational settings. (Same as GUI 683.)

PSY 684 Directed Individual Study (1-3). Individual programs involving readings or conducting a research project in psychology. Note: Arrangements for faculty supervision are required prior to enrolling. May be repeated to a maximum of nine hours. Prerequisites: approval by a faculty sponsor and the departmental chair.

PSY 686 Group Psychotherapy Techniques (3). Emphasis on theory and application of the therapeutic techniques with groups. Prerequisite: consent of instructor.

PSY 688 Multivariate Research Design and Statistics (3). A survey of multivariate statistical techniques, including multiple correlation and regression, canonical correlation, multivariate analysis of variance, discriminant function analysis, and factor analysis. Computer-based techniques of statistical analysis are emphasized. Prerequisite: PSY 652 or consent of instructor.

PSY 691 Principles of Learning (3). Techniques and principles of human and animal learning behavior, and an introduction to theories. Experimental evidence will be stressed.

PSY 698 Thesis (3).

PSY 699 Thesis (3).

READING (REA)

REA 527 Teaching Reading in the Secondary School (3). Designed to help the secondary school teacher teach reading in the content areas. Topics covered are reading process, word recognition skills, comprehension, diagnostic prescriptive instruction and reading in the content areas.

REA 612 Foundations of Literacy (3). An advanced course in reading and writing instruction designed to enable classroom teachers to model and implement a variety of research-based instructional strategies and activities in an authentic instructional context. Prerequisite: REA 306 or REA 527.

REA 618 Content Area Reading/Writing 3-12 (3). This course builds upon theoretical perspectives and strategies for developing the reading/writing abilities of students in grades three and above in the content area. Attention is given to ways of making the most effective use of textual materials across the curriculum. A component of the course includes projects and/or activities which relate to an academic area of study or instructional responsibility.

REA 623 Enrichment in Reading (1-3). Provides an opportunity for advanced study of topics not covered in depth in other reading courses. Each topic involves work completed prior to class sessions, and the completion of a product appropriate to the topic's content. Check with instructor before enrolling for specific dates of activities. Prerequisite: REA 612 or permission of instructor.

REA 624 Special Problems in Reading (1-3). Selected projects and workshops in reading.

REA 626 Word Study: Phonics, Spelling, and Vocabulary (3). This course is designed to help teachers and reading specialists assess the word knowledge of students and to make informed decisions regarding instruction based on that assessment. This course will provide hands-on opportunities to make conceptually based word study lessons to meet developmental needs in phonics, spelling, and vocabulary. Prerequisites: REA 612 Foundations of Literacy.

REA 628 Literacy Assessment (3). Designed to enable classroom teachers and reading specialists to implement a variety of assessment strategies to facilitate learning; make language learners aware of their own strengths and needs as readers and writers; and enhance teacher and curriculum development. Assessment strategies include authentic assessment techniques, miscue analysis, and KIRIS testing. Prerequisites: REA 612.

REA 638 Assessment and Instruction of Children with Reading Difficulties (3). A supervised reading practicum that addresses assessment strategies and instructional procedures used to support students with reading difficulties. Approaches reading difficulty from a holistic view. Prerequisites: REA 612.

REA 639 Supervised Practicum in Reading (3). Designed for teachers, clinicians, literacy coaches, and reading specialists. Emphasis will be placed on designing and supervising a reading program in a public or private setting. Repeatable for up to six hours of credit. Prerequisites: REA 612, 628, 638.

REA 648 Research in Reading (3). Independent study, under the guidance of a supervising faculty member, which addresses an issue, problem or question pertinent to reading/literacy development. The issue, problem or question is to be selected by the student and approved by the instructor prior to the study. Prerequisites: REA 612 and 628 or REA 638.

REA 698 Thesis (3) Repeatable to six hours.

RECREATION (REC)

REC 510 Sociology of Sport and Exercise (3). A critical study of the sociological factors affecting sport, performance, and exercise. Students will learn about the social, cultural, environmental, and racial dynamics involved in sport and exercise. This course will also study the effects sport and exercise have on the social structure of society. (Same as EXS/HEA 510.)

REC 515 Leisure Education in Therapeutic Recreation Services (3). Concepts of leisure functioning and methods of leisure assessment, attitudinal changes, and skill development that enhance successful leisure participation.

REC 520 Leisure and Aging (3). Introduction to the physiological, sexual and recreational aspects of aging in American society; exploration of the role of recreation with the aging; emphasis on planning leisure programs with the elderly. Students taking this course for graduate credit will be required to do additional work. (Same as EXS/GTY 520.)

REC 600 Leisure in Society: A Global Perspective (3). Course is designed for recreation majors, as well as other students interested in studying society's use of its free time and leisure. Course will undertake a historical and comparative study of leisure throughout the world, looking at its role and impact upon various cultures.

REC 609 Evaluation in Exercise and Leisure Studies (3). This course is designed to give students a basic knowledge in descriptive and inferential statistics commonly used in exercise science and recreation/leisure research. Statistical procedures covered include correlation and linear regression, t-test, analysis of variance (ANOVA), and two-way ANOVA. Emphasis is placed on understanding and using a statistical package through computer analysis. Recommended prerequisite: EXS 400. (Same as EXS 609.)

REC 621 Advanced Professional Experience (3). This course provides a comprehensive practical experience in a selected leisure environment and enables the student to develop practical skills through on-the-job experience on an advanced level.

REC 630 Special Topics (3). Seminar for graduate students relating to a current topic in the fields of exercise science and recreation/leisure studies. May be repeated once for credit. (Same as EXS 630.)

REC 640 Techniques of Research in Exercise and Leisure Studies (3). This course is designed to familiarize the student with the various procedures involved in conducting different types of research common in exercise science and recreation/leisure studies. This class builds on previously learned techniques in EXS/REC 609. Students are guided through the process of performing research from the design stage through writing of the research report. Prerequisite: REC 609 or consent of the instructor. (Same as EXS 640.)

Recreation (REC)

REC 650 Seminar in Exercise and Leisure Studies (3). A review of current trends and issues related to the areas of exercise and leisure management. (Same as EXS 650.)

REC 680 Independent Study in Recreation and Leisure Services (1-3). Prerequisite: permission of the chair of the department or departmental graduate coordinator.

REC 698 Thesis (3).

REC 699 Thesis (3).

RELIGIOUS STUDIES

(RGS)

RGS 500 Seminar (3). Selected topics. This course may be repeated for credit. Prerequisite: advanced undergraduate standing or consent of instructor.

RGS 510 Directed Study (1-3). Readings or other study in advanced topics. This course may be repeated for credit. Prerequisite: consent of instructor.

RGS 511 Milton (3). A study of Milton's works and their historical and critical contexts. (Same as ENG 501.)

SECONDARY EDUCATION

(SEC)

SEC 528 Teaching Social Studies in the Secondary School (3). A study of the processes of teaching social studies, including methods, procedures, materials and research in the field.

SEC 529 Teaching Science in the Secondary School (3). A study of teaching science in junior high and high school, including materials and procedures, organizations and operation of laboratories, research and curriculum innovations.

SEC 620 Practicum in Secondary Schools (2). A concentrated practicum experience for students enrolled in the Career and Technical Education master's degree leading toward initial certification which will include planned and supervised mini-teaching experiences with middle and/or senior high students as well as laboratory experiences in the development of teaching strategies and curriculum materials. (20 hours of field placement in a public school classroom included.) Credit cannot be earned for both SEC 420 and SEC 620. Prerequisites: CTE 503.

SEC 641 Building the Curriculum of the Secondary School (3). A study of the modern secondary school curriculum including the usual fields, the core curriculum and activities included in the total program. An introduction to the processes of curriculum-building.

SEC 670 Research in Secondary Education (3). Designed to provide the student with the opportunity to engage in research in instruction, curriculum, or teaching/learning styles. Students will also engage in extensive critical analysis of current research. Prerequisite: ADM 630.

SPECIAL EDUCATION

(SED)

SED 504 Parent-Professional Relationships (1). Course content will focus on the characteristics and roles of parents and other professionals in the education of exceptional children. Skills in interpersonal relations with parents and other professionals will be a major component within the course.

SED 505 Special Education Procedures and Strategies for IECE (3). Students will develop skills in writing Individual Education Programs and Individualized Family Service Plans. Students will be introduced to relevant special education legislation, laws and policies. Students will develop skills in matching intervention strategies to the strengths and needs of young children with disabilities and their families. Students will acquire skills in the development and implementation of the Individual Education Program and the Individualized Family Service Plan in a variety of settings. Prerequisites: EDP 260, EDU 103, FCS 310, 311 and SED 300, or permission of instructor.

SED 526 Education of Young Children with Severe Disabilities (3). Study of young children with disabilities or who are at risk for disability in terms of their personal, family and educational needs. Prerequisites: SED 230 or equivalent.

SED 530 Education of Exceptional Children (3). An introduction to and a survey of the characteristics and educational needs of exceptional children. This course is an overview to give teachers and personnel in related fields an overall concept of the educational implications of the exceptional child as well as of special education as a profession. (Can be taken for credit only by students who have not completed SED 230.)

SED 531 Nature and Needs of Individuals with Moderate to Severe Disabilities (3). Survey of classification, identification, diagnostic techniques and intervention procedures used in the education and training of individuals with moderate to severe disabilities.

SED 535 Field Study in Special Education (1-3). A practicum for students majoring or minoring in special education. Supervised practicum in a school, community and/or residential program. May be repeated up to six hours. Prerequisite: consent of instructor.

SED 537 Diagnostic Methods (3). Instruction which leads to demonstrated competence with instruments utilized in assessment and programming. Field hours are required.

SED 540 Procedures for Classroom Management and Discipline (3). The content of this course provides educators with the information and skills needed to increase their knowledge of advanced methods, and techniques of classroom management procedures. Field hours are required.

SED 551 Transdisciplinary Assessment of Individuals with Moderate/Severe Disabilities (3). This course involves procedures for assessment of the behavioral and educational performance of

individuals with moderate to severe disabilities, task analysis, sequencing behavioral skills and designing individual instructional programs. Students will be provided experience in conducting assessments, developing individual education plans and use of program evaluation techniques related to individuals with moderate to severe disabilities.

SED 552 Functional Behavior Analysis (3). The content of this course provides the student experience in understanding why individuals behave the way they do and how behavior may be taught, changed, and modified. Topics will include behavior management, training strategies, implementation, data-based programming, and field-based teacher research methods. Field hours are required. Prerequisites: SED 300.

SED 553 Instructional Procedures-Students with MSD (3). This course involves preparation in the use of special methods needed to teach children and youth with physical and sensory disabilities. Adaptations, prosthetic devices and technology used in educational programming as well as communication systems and self-care techniques will be included.

SED 554 Classroom Management of Individuals with Mod/Sev Disabilities (3). Study of the techniques and methods necessary for the organization and operation of educational programs for individuals with moderate to severe disabilities. Included are specialized teaching techniques such as precision teaching and behavior management applied to the learning environment as well as scheduling approaches, curriculum models and commercially available materials.

SED 601 Technological Strategies and Professional Planning in Special Education (3). Prepares the students with the expertise in technology and professional organization to be successful at the graduate level. This course also gives student expertise in accessing special education information and resources. Student is taught the policies and procedures required for program completion and for securing a certificate. Students are required to develop professional growth plan focusing on the utilization of productivity software. Student is also required to initiate a professional portfolio including artifacts constituting evidence of competency relative to the Kentucky Experienced Teacher Standards. Internet access is required.

SED 602 Family-Professional Partnerships (3). The course content will focus on the family as an aid in the program or education of their child. Family characteristics will be investigated and related to the implications for meaningful inclusion of the family in the education of a child with a disability. Differential programs for families will be overviewed. Field hours are required.

SED 603 Special Education Law and Procedures (3). Course is designed to familiarize graduate students with the laws and procedures that are required in the process of determining eligibility and delivery of special education services. Students will learn the roles of participants in "Admissions and Release Committee" (ARC), the procedural safeguards, and the order of events

in the special education process as determined by federal and state law and procedures. Appropriate for all certified teachers, school psychologists, and administrators serving students with disabilities.

SED 605 Characteristics and Needs of Children and Youth with Mild Disabilities (3). This course surveys the etiologies, characteristics, and learning styles of children and youth with mild disabilities. State and federal definitions for each category of disabilities under the learning/behavior disability certification will be examined. This course should proceed SED 625.

SED 613 Advanced Behavior Support (3). This course is designed to provide an in-depth study of the field of educating children and youth with emotional disturbances and behavioral disorders. The course will include extensive examinations of disability etiologies, theoretical educational approaches, screening and assessment instruments and techniques, educational placement considerations, program development considerations, and ongoing evaluation based on student performance.

SED 614 Advanced Instructional Technology (3). This course includes instruction in technology that is requisite for the Individual Education Program (IEP) for student with mild disabilities. This includes, but is not limited to, assistive technology, technology as a means to meet the needs of different learner types, and students as users of technology.

SED 615 Collaboration Skills for Educators (3). Designed to develop knowledge, skills and abilities relative to collaboration and teamwork. Provides educators with information and skills necessary to collaborate and consult with other professionals, families and support agencies regarding the design and implementation of educational programs for students with and without disabilities. Field hours are required. Prerequisite: SED 603.

SED 625 Instructional Techniques for Children and Youth with Mild Disabilities (3). Course content focuses on instructional techniques requisite for the development of an individualized educational program (IEP) for children and youth with mild disabilities. Specific methods, media and materials in the areas of reading, writing, math and problem solving will be examined. Students will learn to develop a sequence of instruction from the student's present level of performance to annual goals matching instruction to the student's learning style. Prerequisites: SED 603 and 605.

SED 636 Issues and Trends in Special Education (3). Individual programs of study on current issues and trends in special education.

SED 637 Advanced Diagnostic Procedures (3). A study of the educational diagnosis of learning and emotional-behavior disorders. Includes interviewing, test administration, performance-based assessment, data interpretation and program development.

SED 640 Practicum (4-6). Makes provisions for students to participate in all activities and duties

generally expected of an interdisciplinary early childhood education teacher or an educator working with students with disabilities. Supervision by the faculty member teaching the course will be provided. The university supervisor will observe students to evaluate their performance based on the appropriate program standards. A graduate portfolio is submitted at the end of practicum. Graded pass/fail.

SED 642 Advanced Curriculum for Children and Youth with Disabilities (3). Advanced study of methods, techniques, curriculum, research and the application of technology for meeting the learning needs of children and youth with disabilities.

SED 644 Graduate Cooperative Education (3). May be repeated for a maximum of six credits. Graded pass/fail. Prerequisite: permission of chair.

SED 646 Survey of Research Applied to Special Populations (3). A review of studies from a variety of disciplines that have relevance to special education populations. Special emphasis will be given to those skills (understanding assumptions, reading and abstracting articles, interpreting data, and evaluating results) needed to understand the relationship between research strategies and problem-solving in special education.

SED 649 Special Education Leadership (3). This course provides the student with knowledge and skills regarding the roles and responsibilities of special education leadership personnel: procedures and techniques to develop effectiveness in relationships, school and community activities, public relations and consulting. Other areas discussed are: procedures for recruitment, selection, role definition, assignment, scheduling, monitoring, supervising and evaluation of personnel with emphasis placed on in-service training procedures and organizational change.

SED 650 Administration of Special Education Programs (3). This course provides an overview of the history and current status of the organization, administration and supervision of special education programs. Emphasis is on the tasks of organization, administration and supervision, focusing on program planning and development, fiscal management, cooperating agencies, specialized facilities and equipment, legislative provisions, problems of supervision, and instruction in the development, adaptation and evaluation of instruction, curricula, methods, materials and resources.

SED 651 Social Competence for Safe Environments (3). This course is designed to facilitate an understanding of the priority role that social competence should take in the school and post-school success of children and youth with severe behavior problems. Theories underlying social skills acquisition and practical approaches for implementation will be emphasized. Training strategies discussed will be applicable to a variety of educational environments, including residential, day-treatment, alternative education programs, public, and private schools. Field hours are required.

SED 652 Assessment and Program Planning for Infants, Toddlers and Preschoolers with Disabilities and Their Families (3). This course is designed to acquaint students with the field of special education for children with developmental delay. Students will learn to observe children and to educationally evaluate them using developmental evaluations. From the results of the evaluation, students will learn to plan individual prescriptive programs and to monitor progress made by exceptional children who are chronologically birth to six years old. Students will also be introduced to the concepts of home-based, home-center and center-based instruction.

SED 653 Methods and Materials for Infants, Toddlers and Preschoolers (3). This course explores the importance of understanding the nature of young children (birth to five years) and how they learn. The course will emphasize adaptation of curriculum and intervention approaches. The course includes teaching strategies and materials selection and use.

SED 655 Special Education Transition (3). The focus of this course is to support successful transition from school to community life. This includes transitions from different grade levels as well as from public schools to private life.

SED 656 The Consultation/Collaboration Process in Programs for Children and Youth with Disabilities (3). A study of the consultation/collaboration process used in providing services to children and youth with disabilities. Content includes theoretical as well as research-based strategies for effecting change with individuals and services.

SED 657 School Safety and Classroom Management (3). Course provides educators with the information and skills needed to create conditions that promote and maintain positive, safe, and healthy school culture, climate, and environments. Educators will also increase their knowledge of advanced strategies and techniques for classroom, school-wide, and district level, positive behavior management procedures. Field hours are required.

SED 660 Problems in Special Education (3). This is an advanced seminar dealing with special topics. Course may be repeated as additional topics are offered.

SED 685 Positive Instructional Behavior Supports (3). To gain expertise in teaching students with emotional behavioral disorders. Attendance at Kentucky Department of Education's Behavior Institute is required.

SED 690 Exit Seminar in Special Education (1). Provides opportunity for students to conduct a self-analysis of knowledge, skills and abilities relative to the graduate program completed. This is accomplished by a review of past textbooks and notes, small group discussions, simulations, role-playing as well as finalizing of the eligibility portfolio. Prerequisite: SED 605 and be within six hours or less of completing the program.

SED 695 Independent Study (3-6). The independent study is available for selected students who

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desire to investigate an area not covered in the course work in special education. A final written paper will be submitted to the faculty member directing the study. Prerequisite: advance written proposal approved by the faculty member directing the study.

SED 698 Thesis (3).

SED 699. Thesis (3).

SOCIOLOGY (SOC)

SOC 500 Directed Studies (1-3). Selected topics in sociology as arranged by the students and a professor. Prerequisites: at least twelve hours of sociology and permission of departmental chair.

SOC 521 Issues in Social Gerontology (3). A study of theory and research on aging and policies and programs related to nutrition, retirement, health and housing of the elderly. Prerequisite: SOC/GTY 341 or consent of instructor. (Same as GTY 521.)

SOC 532 Collective Behavior and Social Movements (3). The analysis of collective behavior and movements and the consequent social change generated by this type of human behavior. Prerequisite: six hours of sociology or consent of instructor.

SOC 533 Juvenile Delinquency (3). Nature and extent of delinquency; competing explanatory theories; evaluation of programs for prevention and control; role of police, detention, juvenile courts and corrections. Prerequisites: nine hours in sociology or criminology and corrections, and consent of instructor. (Same as CRJ 533.)

SOC 535 Sociology of Work (3). This course will examine the nature of work in contemporary societies by focusing upon the impact of specialization and bureaucratization; it will examine the different types of work; workers' response to the workplace; impact of work on family, health; role of age, gender, race in the workplace; and finally, the future of work. Prerequisite: six hours of sociology or consent of instructor.

SOC 536 Sociology of Sport (3). Theories, methods and substantive issues in a sociological approach to sports. Prerequisites: six hours of sociology or consent of instructor.

SOC 538 Sociology of Deviant Behavior (3). Sociological frame of reference for studying deviant behavior, with emphasis placed upon problems of definition, social processing and evaluation of significant theory and research in deviant behavior. Prerequisite: six hours of sociology or consent of instructor.

SOC 555 Environment and Social Policy (3). Examines the effects of population and economic growth on the environment. The course will focus on factors related to population and economic growth, as well as public measures designed to mitigate the impact of this growth on the natural environment. Population and economic growth and policies as they pertain to industrial and devel-

oping countries will be emphasized. Prerequisite: SOC 334 or consent of instructor.

SOC 623 Educational Sociology (3). A review of the major sociological forces which condition education; the structure of society, major social trends and social instructions. (Same as EDU 623.)

SOC 639 Seminar in Rural Sociology (3). An analysis of rural life in contemporary American society with specific emphasis on the structure and functions of rural social institutions and on the delivery of health and social services to rural Americans.

SPANISH (SPA)

SPA 503 Golden Age Literature (3). Spanish literature of the sixteenth and seventeenth centuries. Prerequisite: SPA 302 and SPA 301 or 306.

SPA 504 Don Quixote (3). Prerequisite: SPA 302 and SPA 301 or 306.

SPA 505 Nineteenth-Century Spanish Literature (3). Romanticism through Naturalism. Prerequisite: SPA 302 and SPA 301 or 306.

SPA507 Twentieth-Century Spanish Literature (3). A survey of representative authors. Prerequisite: SPA 302 and SPA 301 or 306.

SPA 511 Spanish-American Short Story (3). The origin and development of the short story in Spanish America, with emphasis placed upon the twentieth century. Prerequisite: SPA 302 and SPA 301 or 306.

SPA512 Spanish-American Novel (3). Representative works from the major literary movements and most regional types will be studied. Prerequisite: SPA 302 and SPA 301 or 306.

SPA 521 Topics in Spanish Literature (3). Topics will vary according to the needs and interests of students. Prerequisite: SPA 302 and SPA 301 or 306.

SPA522 Topics in Spanish-American Literature (3). Topics will vary. Prerequisite: SPA 302 and SPA 301 or 306.

SPA531 Advanced Grammar (3). A specialized study contrasting Spanish and English grammatical structures and usage. Prerequisite: SPA 302 and SPA 301 or 306.

SPA 532 Phonetics (3). A study of the vocal apparatus, phonetic transcription and analysis of the contrast between Spanish and English phonology with individual work designed to improve pronunciation. Prepares prospective teachers to teach correct pronunciation effectively. Prerequisite: SPA 302 and SPA 301 or 306.

SPA 551 Directed Study I (1-3). Course work designed to meet specific needs and interests on an individual basis. Prerequisite: SPA 302 and SPA 301 or 306.

SPA 552 Directed Study II (1-3). Prerequisite: SPA 302 and SPA 301 or 306.

SPA 555 Study Abroad (3-9). Credit given to students for approved travel and study in Spain and Spanish America. Repeatable up to nine hours. Prerequisite: junior standing or above.

SOCIAL WORK (SWK)

SWK 500 Independent Study (3). Faculty supervised independent study and investigation of selected topics related to the student's academic and/or career goals. Prerequisites: social work major with advanced standing and consent of instructor. This course cannot be used as a social work elective.

SWK 520 Interdisciplinary Palliative Care (3). This course is designed to give graduate and undergraduate student in the College of Health Sciences and Human Services an understanding of both the philosophy and practice of palliative care. The course includes content on symptom assessment and management, spiritual care, psychological support, and special patient populations. This course is also suitable for students from other colleges who have an interest in evidence-based end-of-life care.

SWK 525 Case Management: Theory and Practice (3). This course will address the theory and practice of effective case management and the skills necessary to assess the client situation and to optimize client functioning. This course will focus on a diverse population of vulnerable clients across various practice settings. The settings emphasized include medical/health, educational, psychiatric and services to the elderly. Policy issues will be addressed as they relate to advocacy, service planning, and program design. Prerequisite: consent of instructor. (Same as HCA 525)

THEATRE AND DANCE (THD)

THD 590 Directed Independent Study in Theatre Arts (3). Individual projects of special interest under the direct supervision of a theatre or dance faculty member. Prerequisites: graduate or senior standing and consent of the chair of the department.

TEACHING ENGLISH TO SPEAKERS OF OTHER LANGUAGES (TSL)

TSL 510 Applied Linguistics for Second Language Teaching (3). An overview of the basic concepts, scope, and methodology of the science of language in its historical and descriptive aspects, including topics and issues in current linguistic studies. The primary systems of language, psycholinguistics and comparative phonology are treated in depth. Prerequisite: ENG 310. (Same as ENG/MLA 510.)

TSL 520 Computer Assisted Language Learning (3). An introduction to computer assisted language learning (CALL), an overview of its specialized vocabulary and a review of research regarding its effectiveness. (Same as MLA 520.)

TSL 530 Methods and Materials for Teaching ESL (3). Knowledge derived from the linguistic sciences about the nature of language and how it is learned serves as the basis for the exploration and evaluation of various methods, techniques and approaches to the teaching of English as a Second Language.

TSL 533 Language and Culture (3). A study of the relationship among language, society and the individual's concept of reality. The course examines a variety of anthropological and ethnographic concepts and findings as they relate to language and language learning in its broadest context. The course will also examine socio- and comparative linguistics, the relationship between culture and language, and the implications for second language teaching. (Same as ENG/MLA 533.)

TSM 561 Problems in TSM (3). Individual study and research pertaining to special problems in telecommunications system management. Prerequisite: Junior standing or approval of instructor.

TSL 580 Practicum (3). An intensive teaching/learning experience in which participants work in a classroom setting under the supervision of a master teacher. Prerequisite: TSL 530.

TSL 610 Applied Linguistics and Professional Practices (3). A specialized application of sub-areas of linguistics with emphasis on the impact of theories of linguistics on ESL/EFL pedagogy. Topics of focus include issues in research design and methodology, the ethics of teaching, and skills needed to participate as an active ESL/EFL professional. Prerequisite: TSL 510.

TSL 615 Course and Syllabus Design in ESL (3). Building on concepts in TSL 530, the course examines differing viewpoints of the global objectives of language programs and courses. Prerequisite: TSL 530.

TSL 623 Testing and Evaluation in Second Language Teaching (3). A review of a number of current methods for classroom/standardized language testing and evaluation. (Same as MLA 623.)

TSL 630 Developing Intercultural Competence (3). An overview of diverse world views, ethnic heritages and historical contributions of peoples from broadly defined regions of the world and the implications for an intercultural/international classroom setting. (Same as MLA 630.)

TSL 653 Integrated ESL Skills Seminar (4). An exploration of advanced methods of teaching ESL integrating all language production and reception skills and linguistic structural knowledge within a content/theme-based pedagogical framework, specifically addressing how grammar is incorporated within a multidimensional model of ESL instruction. A field experience is required. Prerequisites: TSL 510, 530, and 580.

TSL 690 Internship (3). A supervised teaching position in an educational institution or industry in the United States or abroad which allows the intern to gain experience over a period of at least

four weeks. The employer participates in formal evaluation of the intern's performance. Prerequisites: to be taken during the final semester of study in the M.A. in TESOL.

TELECOMMUNICATIONS SYSTEMS MANAGEMENT (TSM)

TSM (CIS) 530 Systems Planning (3). The primary focus of the course is to understand the development of a systematic planning cycle for implementing and maintaining an organization's Information Technology (IT)/Information Systems (IS). Specifically to understand the complex but direct relationship between "business planning" commonly called the "Corporate Strategic Plan (CSP)" and "systems planning" also called "Information System Plan (ISP)". Students will explore the theory and practice of IS planning through case study analysis. Students will understand how IT/IS projects and the planning involved in the projects implement the ISP. Prerequisite: CIS 304 or permission of instructor.

TSM 571 Problems in TSM (3). Individual study and research pertaining to special problems in telecommunications system management. Prerequisite: junior standing or approval of instructor.

TSM 601 Telecommunications Principles (3). A graduate level introduction to the underlying principles of telecommunications. This course presents the problems and solutions involved in communicating over extended distances. Topics include: fundamental physical and electronic concepts; information theory; types of media; requirements and capacity calculations; modulation and multiplexing methods; standards and architectures; modern applications and issues. Throughout the presentation of the technical fundamentals, discussion will focus on relevant management issues such as cost, infrastructure, support, and business advantage.

TSM 602 Telecommunications Systems (3). A graduate level introduction to modern telecommunication systems. This course presents systems oriented approaches for rapid and reliable communication over extended distances. Topics include: local area network topology, structure, and operating systems; backbone architectures; wide area networks; telephony; the Internet; security and privacy issues. Throughout the presentation of telecommunications hardware and software systems, discussion will focus on relevant management issues such as cost, efficiency, and business models. Prerequisite: TSM 601.

TSM 603 Telecommunications Project Management (3). Introductory course where students acquire key project management competencies. Students will learn how to apply the competencies to implement project management processes established by the Project Management Institute Body of Knowledge (PMBOK Guide). Corequisite: TSM 601 or permission of instructor.

TSM 610 Telecommunication Networks Management (3). An overview of fundamentals of daily telecommunication design, operations, management, and a survey of technologies and

applications of telecommunications systems. Prerequisite: TSM 601. Corequisite: TSM 602.

TSM 615 Information System Security (3). Graduate-level study of modern computer, network, and information systems security. This course presents systems oriented approaches to network defense, malicious software, and data encryption. Topics include network intrusion prevention and detection; incident response; computer forensics; worms; viruses; Trojan horses; public key encryption; message authentication; and privacy issues. Throughout the presentation of security issues, discussion will focus on the cost of security to business and society at large.

TSM 630 Telecommunications Legal Environment: Law, Policy, and Regulation (3). Law, policy and regulation as they affect telecommunications technologies and telecommunications business strategies. Emphasis will be placed on an examination of the FCC, the Telecommunications Act of 1996, and the telecommunications business environment, including licensing, divestiture and antitrust. Primarily a lecture, readings and discussion course.

TSM 670 Developing E-Commerce Applications (3). A study of programming languages and operating systems used in Internet applications as well as the technologies available for the implementation of customer transactions using Internet technology. Prerequisites: High-level programming language and CIS 307 (or equivalent).

TSM 680 Telecommunications Solution Development (3). A capstone course for the M.S. in TSM that requires students to use project management techniques involving the technical, financial and managerial aspects of developing an integrated communications network solution meeting voice, data and video requirements. Major emphasis in the proposed solution is on requirement analysis, solution design, solution implementation and solution management. Oral communication skills are required for presentation of proposed solution. Prerequisite: 18 hours of graduate work toward the M.S. including ACC 604, FIN 612, TSM 602, 603, and 610.

TSM 688 Telecommunications Systems Practicum (3). Application of knowledge and skills developed in core courses in an organizational environment to solve telecommunication management problems. Emphasizes practical industry experience. A report is submitted to the Graduate Committee at the end of the project period. Prerequisite: permission of program director.

TECHNOLOGY TEACHER EDUCATION (TTE)

TTE 512 Instructional Materials and Equipment (3). A study of the psychological, physiological and pedagogical justification of the uses of audiovisual aids in teaching. Through experiences in the preparation and use of various audiovisual media, the student will develop proficiency in the application and operation of current instructional technology equipment and software as well as skill in the preparation of instructional materials for use in the technology education classroom and laboratory.

Technology Teacher Education (TTE)

TTE 550 Advanced Study in Construction (3). A directed study of selected areas within the fields of residential, civil and light commercial construction. Prerequisite: approved course work and/or experience.

TTE 554 Teaching in the Modular and Systems Environment (3). This course is designed to be the capstone course for pre-service technology education teachers. Emphasis is placed on teaching technical content using both the systems and modular approaches to develop technical understanding, rudimentary technical skills and problem solving expertise in the technology education classroom/laboratory setting.

TTE 575 Managing Instruction for Learners with Special Needs (3). A study of the basic ideas, perspectives and techniques critical to the planning, management and evaluation of instruction for special needs learners. Classroom situations involving diverse populations and handicaps will be examined. A student-generated field experience is required. (Same as CTE 575.)

TTE 671 Philosophy of Technology and Vocational Education (3). A study of the social, historical and philosophical development and current philosophical beliefs of technology-based studies. Exploring the various philosophies of technology education and vocational education, the student will develop a philosophy and understanding of technology or vocational education, then apply that philosophy and understanding to technology-based education about the technological attitudes and skills to understanding new or different past-present-future technology systems. The meaning of technology-based education to the individual and society, as well as the nature and impacts of technology on the individual and society will be introduced and explored. (Same as CTE 671.)

TTE 672 Vocational Guidance (3). Problems and procedures involved in assisting individuals to choose, prepare for, enter upon and become adjusted in their vocations. Students will develop skills which enhance their ability to teach identification and clarification of values, as well as enhancement of decision-making, career planning and job acquisition skills. Technology education teachers, vocational education teachers and counselors will develop insight into the principles involved in evaluating occupational outlooks and the skills and traits required for success in selected careers. (Same as CTE 672.)

TTE 673 Supervision of Technology and Vocational Industrial Education (3). A study of the competencies needed to supervise and develop effective techniques of working with technology and vocational education teachers. Problems and methods of orientation, communication and supervision of teachers and instruction are discussed. (Same as CTE 673.)

TTE 676 Organization and Administration of Industrial Education (3). A study of the organization and administration of technology, vocational and technical education programs on the various school levels and the development and coordination of external advisory boards.

The students will experience development of a strategic plan that includes a mission statement, rationale for change, goals and objectives, action steps, as well as a program evaluation strategy. State and national legislation affecting technology and vocational education will be studied. (Same as CTE 676.)

TTE 677 Experiential Technology-Based Activities for Elementary Teachers (3). A study of techniques involved in the incorporation of technology-based experiential classroom activities into the elementary classroom. Designed to assist elementary teachers in developing the professional and technical competencies needed to enrich and strengthen existing programs of instruction through the inclusion of hands-on, technology-based classroom activities. Lecture and laboratory.

WATER SCIENCE (WSC)

WSC 690 Seminar (1). Graduate students who anticipate completing the thesis must register for Seminar and defend their research before the college faculty and fellow graduate students.

WSC 698 Thesis I (3).

WSC 699 Thesis II (3).

YOUTH AND NONPROFIT LEADERSHIP (YNL)

YNL 501 Seminar on Youth and Human Service Organizations (3). An introductory survey course on the youth and human service organizations. Program development, leadership, personnel and volunteer management, communication, decision making, and problem solving are discussed using both lecture and a service learning project approach. This class is a part of the Service Learning Scholars program. Extra assignments will be required of graduate students.

YNL 502 Workshop in Financial Resource Development (3). Overview of successful methods of financial budgeting, accounting and development are discussed using a case study and service learning approach. An overview of financial development is presented including aspects of membership and program fees, special events, grant writing and United Way allocations. Students participate in a fund raising project for a local youth or human service organization. This class is a part of the Service Learning Scholars program. Extra assignments will be required of graduate students.

YNL 580 Special Problems in Youth and Human Service Organizations (1-3). Involves developing a project to address issues and needs in a local youth or human service organization. Must demonstrate ability to plan, implement, and evaluate a project using program planning knowledge and skills developed from YNL 350 or YNL 501. Prerequisite: prior consent of instructor.

YNL 698 Thesis (3).

YNL 699 Thesis (3).