WICHITA STATE UNIVERSITY
GRADUATE SCHOOL BULLETIN 1985-87
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This bulletin is a guide for information, not a contract.
This bulletin becomes effective March 1, 1985.
The official University address is:
Wichita State University
Wichita, Kansas 67208
The Graduate School telephone number is: (316) 689-3095.
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Board of Regents, State of Kansas
  Wendell E. Lady, Chairman, Overland Park
  Norman W. Brandeberry, Russell
  Patricia W. Caruthers, Kansas City
  Archie R. Dykes, Topeka
  Lawrence M. Jones, Wichita
  Sandra L. McMullen, Hutchinson
  John G. Montgomery, Junction City
  James W. Pickert, Emporia
  George Wingert, Ottawa
  Stanley Z. Koplik, Executive Director, Topeka

Inside back cover
General Information

1984-85 Administrative Officers

WICHITA STATE UNIVERSITY

Warren B. Armstrong, President of the University
John B. Breazeale, Vice President for Academic Affairs and Dean of Faculties
Martin H. Bush, Vice President for Academic Resource Development
George M. Piat, Associate Vice President and Director for Planning and Institutional Research
Jacqueline J. Snyder, Associate Vice President for Academic Affairs
Lloyd M. Benningfield, Dean of Graduate Studies and Research
Douglas Sharp, Dean of the College of Business Administration
Leonard M. Chaffee, Dean of the College of Education
William J. Wilkinson, Dean of the College of Engineering
Gordon B. Tewilliger, Dean of the College of Fine Arts
Sidney D. Rodenberg, Dean of the College of Health Professions
Philip D. Thomas, Dean of Fairmount College of Liberal Arts and Sciences
Jasper G. Schad, Dean of Libraries and Media Resources Center
Barbara M. Mawhinney, Assistant Dean of Faculties for Personnel
William E. Wynne, Registrar
Frederick Sudermann, Director of Research and Sponsored Programs and Governmental Relations
James J. Fhatigan, Vice President for Student Affairs and Dean of Students
David L. Meabon, Dean of Student Life and Services
C. Russell Wentworth, Dean of University College and Continuing Education and Director of Summer Session
Deltha G. Colvin, Assistant Dean of Students for Special Programs
Roger D. Lowe, Vice President for Business Affairs
Armin L. Brandhorst, Director of Physical Plant
James R. Decker, Controller
Mary L. Herrin, Director of Budgets
Milton L. Myers, Chief of University Police
William H. Smith, Director of Campus Activities Center
Robert D. Warren, Director of Personnel and Administrative Services

Graduate Council

Lloyd M. Benningfield, Chairperson, Dean of Graduate Studies and Research
Michael P. Tifft, Associate Dean of the Graduate School
Donald Corbett, Fine Arts
Esmond Devun, Natural Sciences and Mathematics
Keith Graham, Personnel Services, Communicative Disorders and Sciences, and Physical Education
John Hartman, Social Sciences
Randolph Elsworth, Instructional Services and Industrial Education
Hossein Salizadeh, College of Business Administration
Robert H. Ross, Master of Business Administration
James Jackson, College of Health Professions
George Rowe, Humanities
Mark Jong, College of Engineering
Glen W. Zumwalt, Dean's Representative

Doctoral Program Subcouncil

Lloyd M. Benningfield, Chairperson, Dean of Graduate Studies and Research
William R. Carper, Chemistry
Kenneth W. Burk, Communicative Disorders and Sciences
Glen R. Dey, Educational Administration and Supervision
Glen W. Zumwalt, Engineering
Robert H. Ross, Graduate Council Representative

Profile of Wichita State University

Wichita State University, a medium-sized, state-supported university, is located in the city of Wichita. Boasting a population of nearly 280,000 persons, Wichita is the largest city in Kansas and a center for cultural and economic activity.

With a growing enrollment of more than 17,000, Wichita State takes pride in its specialized attention to each student. Non-traditional programs and classes help meet the needs of all, including those who don’t fit the mold of “typical” students—more than 84% of those enrolling at WSU are employed part or full-time; students range in age from 15 to 81 years; 1,100 are receiving veterans’ benefits.

Nearly 200 areas of academic concentration allow “Shockers” (as WSU students are known) to fit scholastic growth and progress to their individual talents and interests. Programs are offered in the Colleges of Business Administration, Education, Engineering, Fine Arts, and Health Professions, as well as Fairmount College of Liberal Arts and Sciences, University College (for entering freshmen and adult students) and the Graduate School.

About 3,500 students are working toward a variety of degrees or studying in non-degree status in the Graduate School. In addition to bachelor’s degrees, WSU offers master’s, specialist and doctoral programs. Graduates are able to leave WSU with a Doctor of Philosophy (PhD) in communicative disorders and sciences (logopedics) or in engineering. A transfer doctoral program in educational administration is also available.

The Summer Session at WSU features a flexible time format. A three-week pre-session and two four-week sessions are held concurrently with the regular eight-week session.

Wichita State strives to attain four basic objectives:

1. The University provides general education through the General Education Program and University College.
2. The University offers advanced and special education through varying major studies in liberal arts and sciences and in the degree programs of the professional schools or colleges.
3. The University provides continuing educational opportunities for adults through special seminars, workshops, classes, and related programs.
4. The University promotes graduate studies and stimulates research through a variety of graduate programs authorized by the Kansas Board of Regents, as well as through ongoing programs of University research and research sponsored by outside organizations.

Implicit in all the University’s objectives are student welfare and continuing public service.

History

Wichita State University began as Fairmount College in 1895 with 16 students and three instructors. Founded by the Congregational Church, the college was governed by the church until 1926, when the citizens of Wichita voted to make Fairmount College the Municipal University of Wichita. The University was then placed under the direction of what would later be known as the Board of Trustees.

After 38 years as a municipal institution, the University again changed its status on July 1, 1964, and officially entered the state system of higher education. In its present status, Wichita State is
one of six state institutions of higher education governed by the Kansas Board of Regents.

Accreditation and Associations
Wichita State is accredited by the North Central Association of Colleges and Schools. Specific programs are also accredited by the following professional organizations: Accreditation Board for Engineering and Technology, American Assembly of Collegiate Schools of Business, American Chemical Society, American Medical Association Council on Medical Education, American Speech-Language and Hearing Association, Association of University Programs in Health Administration, Council of Social Work Education, Engineers' Council for Professional Development (Aeronautical, Electrical, Industrial and Mechanical), Kansas State Department of Education, National Association of Schools of Music, National Council for the Accreditation of Teacher Education, and National League for Nursing.

Women graduating from Wichita State with bachelor's degrees or higher are eligible for membership in the American Association of University Women.

Policies
Human Relations
It is the policy of Wichita State University not to discriminate on the basis of race, color, religion, national origin, sex, age, disability or political affiliation in its education programs, activities or employment policies as required by the Civil Rights Act of 1964 and subsequent amendments (including Title IX of the Education Amendments of 1972), federal executive orders, federal regulations and guidelines, and the State's Executive Order No. 75-9. The University is further committed to taking affirmative action to assure that equal opportunity shall exist.

Student Responsibility
Students at Wichita State University have the following responsibilities:
1. To consult their advisers on all matters pertaining to their academic careers, including changes in their programs
2. To observe all regulations of their college and select courses according to the requirements of that college
3. To attend all meetings of each class in which they are enrolled (instructors will announce at the beginning of the semester if they consider attendance in computing final grades)
4. To fulfill all requirements for graduation
5. To be personally responsible for fulfilling all requirements and observing all regulations at Wichita State
6. To answer promptly to all written notices from advisers, faculty, deans, and other University officers
7. To file an Application for Degree card in the dean's office of the appropriate college at least one semester before the expected date of graduation
8. To enroll in only those courses for which the stated prerequisite(s) (if there are any) have been satisfactorily completed. Failure to comply with this procedure may result in administrative withdrawal.

Students should also comply with the principles in the following statement, which was adopted by the Student Senate, the Faculty Senate, and the Administrative Council of the University.

Wichita State University affirms the principle of intellectual freedom in scholarly activity for University students, and it recognizes the full citizenship rights of students in inquiry, discussion, and such actions as they may choose to take on public issues.

The rights and freedoms of students involve responsibilities. Incumbent on all students, as on all citizens, is the responsibility to observe the University's rules of orderly procedures and the laws of the larger community of which the University is a part. In the matter of actions on public issues, to speak one's opinion, to petition, to distribute literature, to peacefully assemble, and hold meetings, to use the persuasion of ideas and other actions within the bounds of oratorly and lawful procedures are sanctioned by the University. But infringement on the rights of others, acts or threats of violence to persons, destruction of property, disruption or other interference from improper disclosure of the University and its personnel, and other disorderly and unlawful acts will not be countenanced.

Within its sphere of responsibilities the University will afford students proper procedural safeguards to resolve matters in dispute. Those who willfully violate these University standards must expect to face disciplinary action on the part of the institution, which may include reprimand, probation, or suspension, consistent with campus provisions for due process.

Academic Honesty
Opportunities for learning at Wichita State University involve the students' rights to express their views and to take reasoned exception to the views of faculty; to examine all questions felt to be appropriate to a course of study; to be protected from improper disclosure of their views and beliefs, to be examined in a fair and impartial manner, and to be treated with dignity and respect. Students are responsible, however, for learning the content of any course of study outlined by their instructors, regardless of any views or judgments privately held, and for demonstrating their attainment in an honest manner.

Students who compromise the integrity of the classroom are subject to disciplinary action on the part of the University. Violations of classroom standards include:
1. Cheating in any form, whether in final examinations or elsewhere
2. Plagiarism—using the work of others as one's own without assigning proper credit to the source
3. Misrepresentation of any work done in the classroom or in preparation for class
4. Forgery, fabrication, forgery or alteration of any documents pertaining to academic records
5. Disruptive behavior in a course of study or abrasiveness toward faculty or fellow students

A standard of honesty, fairly applied to all students, is essential to a learning environment. Students violating such standards must accept the consequences, and penalties are assessed by appropriate classroom instructors or other designated persons. Serious cases may result in discipline at the college or university level and may result in suspension or dismissal. Students accused of abridging a standard of honesty may protect themselves through established academic appeal procedures and are assured of due process and the right of appeal from accusations or penalties felt to be unjust.

Open Records
Students may inspect and review their educational records maintained by Wichita State. According to law, the University is allowed 45 days to respond to their requests, but typically less time is required.

Students wishing to challenge the accuracy of their records are entitled to a hearing upon written request to the dean of the college in which they are enrolled. The hearing is arranged by the dean.

Students may also receive the names of persons from outside the University who request access to their records and the reason for such requests. Similarly, students may also be informed of requests for records from individuals within the University who normally do not review students' educational records. Information in students' records will not be released without their permission unless they have waived their right in writing.
Student Affairs

Structure

The vice president for student affairs and dean of students is responsible for the coordination and supervision of the Division of Student Affairs. Issues involving student life, development, programs, problems, and activities on the Wichita State University campus are addressed by the staff of the division.

The dean of Student Life and Services is responsible for the residence halls, off-campus housing concerns, handicapped services, fraternities and sororities, student organizations, preschool, veterans, women's activities, financial aids, placement and career services, student health, student activities, counseling students with problems or concerns, and encouraging scholastic achievement.

The dean of University College is responsible for the programs and policies of University College. (See the University College section of the Catalog.)

An assistant dean of students is responsible for Operation Success, Project Discovery, and Upward Bound, which are the federal TRIO programs for educationally disadvantaged students. (See the Special Programs section of the Catalog for a more complete description of these programs.)

Orientation

Special orientation programs are presented in the summer through small-group interaction and discussions. For more details about the orientation program, see the University College section of the Catalog.

Counseling

The Counseling Center provides psychological services and counseling for personal and career/life planning issues. Professional counseling is available on a cost-shared basis to all members of the university community—students, their families, faculty, and staff. Individual, couple, family, and group counseling are aspects of the professional counseling services.

Testing services are part of the Counseling Center's function. The credit by exam program and the National Testing Program are administered directly by the Counseling Center. The National Testing Program includes certification tests for community professionals, CLEP tests, and entrance exams for colleges and graduate schools.

The International Program

The International Program, located in 303 Grace Wilkie Hall, serves the special needs of approximately 1,100 international students from over 70 countries enrolled at Wichita State. (For international student admission requirements, see the Admission to Wichita State section of the Catalog.) An orientation program specially designed for newly arriving foreign students prepares them for entrance into the American academic system and way of life.

The International Program also sponsors the Host Family Program, the International Conversation Partners Program, the Global Classroom Program, and various other activities that promote interaction between American and foreign students.

In addition, the International Program houses a Study Abroad Center which provides information to American students on study, work, and travel opportunities abroad. Information concerning Fulbright-Hays grants may be obtained from this Center.

Placement and Career Services

The Placement and Career Services office provides services to students and alumni seeking career advice or employment-related assistance.

Individual career counseling is available to assist students and alumni with planning and decision making. Assessment instruments, including SitG (a computer guidance system) are offered for self-assessment. Workshops, presentations, and classroom instruction are offered to enable persons to learn about the responsibilities of various career fields, to prepare job resumes and letters of application, to conduct effective employment interviews, and to make informed decisions.

Occupational and career information, employer directories, information on employment trends, employer recruiting literature, annual salary survey reports, and information on graduate and professional school opportunities are available in the Career Resource Center.

Degree candidate and alumni placement services include direct referral to career employment vacancies, on-campus interviews with employer representatives; and matching of jobs and candidates through a Computerized Employment Matching System.

Placement services also include direct referral to part-time jobs, as well as summer employment opportunities.

Housing

The Wichita State housing policy for 1984-86 classifies housing units as follows:

1. University-approved housing which includes University-owned residence halls, and fraternity and sorority houses
2. University-registered housing which includes apartments, single rooms, and houses that are nondiscriminatory on the basis of race, creed, or color

All single freshmen under 21 years of age enrolled for 9 or more credit hours who are not living with relatives or guardians are required to live in University-approved housing, with priority given to University-owned housing.

All other students can select their own accommodations; however, University-approved housing is highly recommended. Listings of registered housing facilities are available in the office of the Division of Student Affairs.

Special exceptions to these regulations will be reviewed by the housing officials in the Division of Student Affairs.

Admission to Wichita State does not mean automatic room reservation. Each student admitted will receive information concerning housing from the Office of Admissions, and the proper forms must be filled in and returned to the housing office to reserve a room. Students are encouraged to apply early since space is limited.

Requests for information should be sent to:
Director of Housing
Wichita State University
Wichita, KS 67208.

Wichita State University reserves the right to make policy adjustments where the situation demands and to change the residence of any student or deny or cancel residence accommodations of any student in cases where such action is deemed desirable.

University Preschool

The University Cooperative Preschool is a licensed school for children of WSU students. Four certified preschool
Handicapped Services
The Handicapped Services office provides supportive services for students with impaired sensory, motor, and/or speaking skills.

- Student aid assistance during the 1984-85 school year has included note-takers, readers, library assistants, wheelchair pushers, test proctors, escorts, cafeteria aides, transfer assistants, transcribers and clerical services. Those interested in these services should contact the handicapped services office for updated information on such assistance. Auxiliary aids and materials available for student use include the Perkins Braillewriter, IBM Braille typewriters, slates and stylus, raised line drawing kits, the Speech Plus Calculator, Braille measuring instruments, mobility canes, print magnifiers, 4 track cassette tape recorder players with earphones, standard tape recorder players, phonographs, digital Braille clocks, lap boards, transcribing papers, and blank tapes. Textbooks are ordered through this office for students requesting books on tape, in Braille, or in large print, Tactile campus guides, Braille campus maps, and manual wheelchairs for emergency use can be provided.

The Association for Handicapped Students, a campus affiliated group of both handicapped and nonhandicapped individuals, promotes fellowship while exploring issues which affect the postsecondary education of individuals with physical disabilities.

Student Health and Hospitalization
The Student Health Services, located in 209 Ahlberg Hall, provides ambulatory health care for students with health concerns, medical problems, illnesses, and injuries. Clinic services and health education are provided by a staff of professional nurses and community physicians. The services of registered nurses and nurse practitioners are available during office hours, and physicians may be seen by appointment during their scheduled clinic hours. Physicians specializing in ear, nose, and throat, dermatology, gynecology, internal medicine, surgery, and family practice are available.

Special services of immunizations, tuberculin skin testing, family planning information, physical examinations required by academic programs, and health screening are offered.

International students are required to submit to the Student Health Services a physical examination form and chest x-ray report completed by a physician. The student body has chosen to participate in the Rhulen group plan for accident and sickness insurance coverage. Opportunities to enroll in the program are offered at the beginning of each regular semester. Information is available at the Student Health Services and the Office of Student Life and Services.

Special Programs
Center for Business and Economic Research
The Center for Business and Economic Research, a service of the College of Business Administration, engages in business-economic research for a wide variety of clients in both the private and public sectors. The center gathers, analyzes, and publishes data describing economic conditions in Wichita and Kansas and is the sole source of comprehensive monthly economic data for the state. The center's staff of faculty, graduate and undergraduate students works together on policy-oriented research and publications, publishing Business & Economic Reports, a quarterly, alternately with the monthly Kansas Economic Indicators.

Center for Continuing Engineering Education
The Center for Continuing Engineering Education has as its objectives:
1. Providing noncredit engineering education for professional development or occupationally/professionally related purposes
2. Cooperating with the engineering professions and related professional associations to provide specialized courses and certificate programs
3. Sponsoring, developing, and cooperating in programs and activities that extend the resources and knowledge of the University to industry, special audiences, and the general public.

Center for Continuing Health Education
The Center for Continuing Health Education, a unit of the College of Health Professions, provides continuing educational opportunities for members of the nursing and allied health professions in Kansas. Through workshops, seminars and conferences, many offered in conjunction with local or state health and social agencies, the center and the college's educational programs provide current information on philosophy, practice and new developments in the health professions.

Center for Entrepreneurship and Small Business Management
The Center for Entrepreneurship and Small Business Management is housed within the College of Business Administration. The purpose of the center is to enhance understanding in the areas of entrepreneurship (new venture creation), small business management, and "American enterprise system." The center provides a comprehensive library and computer data bank for the small business subject area. Additionally, it conducts seminars and workshops, sponsors a visiting lecture series, and conducts primary and secondary research. Future objectives include the creation of films for public education.

Center for Human Appraisal
The Center for Human Appraisal operates as a service of the College of Business Administration to extend research attitudes and interests in the behavioral sciences and apply that knowledge to governmental agencies and the business community. Projects undertaken by the center include management surveys, assessment programs, supervisory selection, selection for promotions, morale research, supervisory training, and general research on people systems.

Center for Management Development
Wichita State University, through the College of Business Administration, makes available to the business and professional community the Center for Management Development.

The WSU management seminars and workshops have been acclaimed for their usefulness to practicing business people and other professionals in a wide variety of organizations. The Center offers a broad range of management education and development opportunities to the growth-oriented supervisor, manager, or professional specialist in business, industry, government, and other public or private organizations.

Center for Productivity Enhancement
The WSU Center for Productivity Enhancement was established by the Kansas legislature in May, 1983, to assist in
developing the appropriate atmosphere in Kansas for attracting new high technology industry. The Center is focused on CAD/CAM (computer-aided design and manufacturing), robotics, artificial intelligence, and composite materials. It promotes education, research, and transfer of technology to industry in these areas.

**Center for Women's Studies**

The Center for Women's Studies serves to promote research and other activities related to women and their concerns, to foster closer ties between academic and community efforts with respect to women's needs, to act as an informational referral agent, and to enhance the overall awareness of campus and community to the current needs of women in the areas of education, jobs, and life choices. To help achieve these aims, the center maintains a small resource library of books and periodicals open to students, faculty, and others; sponsors seminars, workshops, and lectures; and provides community and campus speakers. The center is responsible for administering the BA in women's studies and supervises the work of students pursuing a concentration in women's studies in various graduate areas.

**Cooperative Education Program**

The Cooperative Education program is a university-wide, centrally administered academic program providing students the opportunity to integrate formal course work with periods of relevant off-campus employment. More information is available in the Special Academic Areas section of the Catalog.

**French Student Exchange Program**

WSU is among the 100 colleges and universities in the United States that participate in the annual student exchange organized by the French Ministry of Education. One individual from WSU spends the academic year in France as a salaried assistant in English, and a student from France is attached to the WSU Department of Modern and Classical Languages and Literatures as a salaried assistant in French. Majors and minors in French who have graduated within one year prior to departure date are eligible to apply.

**Hugo Wall Center for Urban Studies**

Wichita State University's role as a comprehensive urban institution was outlined by the Kansas Board of Regents in 1972: "As the Regents' urban institution, Wichita State University's ... mission includes development of programs utilizing the unique resources of the urban area. . . ."

The Center for Urban Studies was formed in 1955 and has become a leading contributor to the urban mission articulated by the Board of Regents. The Center conducts instruction, research, and service programs, integrating these three essential University functions in responding to the needs of students and the urban environment. The Master of Public Administration degree is administered through the Center and its faculty in public administration and urban affairs. Service programs of the Center include public affairs seminars, workshops for governmental personnel, professional development seminars for governmental managers, and a variety of other programs designed to link the resources of the University to urban governments. The faculty and staff of the Center are engaged in a wide range of research on state and local government in Kansas, including research and analysis of Wichita and Sedgwick County governmental bodies and tax structures; and the origins of the city manager plan of government in Kansas; an assessment of industrial revenue bonds in Wichita; and a national study of women mayors.

The Hugo Wall Center for Urban Studies coordinates the University's State Census Data Center as part of a five-member statewide consortium. The Data Center is the repository of 1970 and 1980 census data and responds to requests for census data.

**Marcus Center for Continuing Education**

Many educational services are offered through the Marcus Center for Continuing Education, an adult education facility located at 4201 East 21st Street. Specialized courses for business and industry, governmental agencies, and the professions; special conferences for the general public; and a wide variety of personal enrichment programs are offered in the center. In addition to renting meeting areas, the Marcus Center for Continuing Education staff provides program development, brochure preparation, mailings, fee collection, material preparation and reproduction, registration, and program evaluation.

**Operation Success, Project Discovery, Upward Bound**

Operation Success, Project Discovery and Upward Bound are special programs designed to help students prepare for university life, and to successfully complete courses of study. Operation Success is a federally funded program providing comprehensive, intensive, flexible, one-on-one tutorial help; personal counseling; career guidance; and assistance in the development of study skills for disadvantaged students who are first generation university students and meet specific income guidelines. The program serves about 250 students each year, and has been in operation at WSU since 1970.

Project Discovery, a federally funded talent search program, was established at Wichita State University in July of 1977. The project assists approximately 1,500 low-income people in gaining admission to postsecondary institutions throughout the nation. Specific help is provided with admission forms, financial forms, and registration for ACT/SAT assessment examinations. Limited tutorial help is available for high school students. The project's two offices at Wichita State and Coffeyville Community College serve high schools and community agencies in Wichita and 12 counties in southeast Kansas.

The Upward Bound program is a federally-funded program that has been at WSU since 1966. The program, titled Wichita Prep, assists high school students from low-income backgrounds who have academic potential but inadequate secondary school preparation. The high school sophomores, juniors and seniors participate in an intensive six- to eight-week summer and academic year schedule to improve academic and social skills. Assistance includes tutorial assistance, academic, career, and personal counseling, post-secondary admission, and classes and workshops.

**Research and Sponsored Programs**

The Office of Research and Sponsored Programs serves as the University liaison with local, state, and federal governmental units and organizations that support research, training, and other service programs. The office collects, maintains, and provides information regarding agency programs and interests in support of research and other activities; coordinates the preparation and submission of project proposals; and is responsible for the general administration and reporting of sponsored grants and contracts.

**Small Business Institute**

The Small Business Institute is housed within the College of Business Administration. Its purpose is to bring together the student's knowledge and the small business experience on a consultation basis. Such interaction rounds out the senior student's education with practical experience while offering assistance to small businesses in the community.
University Gerontology Center

The University Gerontology Center is responsible for development and coordination of gerontology-related activities and programming at Wichita State, including instruction, research, service, and continuing education. The center develops and manages community research in the area of aging and serves as a resource center and information clearinghouse to assist community agencies and organizations in planning and developing services for older persons.

University Press of Kansas

The University Press is operated jointly by six state Kansas universities: the University of Kansas, Kansas State University, Wichita State University, Emporia State University, Fort Hays State University, and Pittsburg State University. Founded July 1, 1967, it was the first university press in the United States to function on a statewide level under specific sponsorship of all of the state’s universities. Offices are located on the campus of the University of Kansas in Room 303, Carruth-O’Leary Hall.

WSU Energy Studies Laboratory

The WSU Energy Studies Laboratory conducts energy research with particular emphasis to Kansas applications. Current areas of specialization are wind energy, electric utility, and conservation research. Research in the engineering and technical use of microcomputers is also conducted, especially in the area of computer-aided design. The laboratory is directed by the College of Engineering.

Special Facilities

Instructional facilities on the 320-acre Wichita State University campus are in use for educational purposes more hours per day than at any other Kansas college or university. Among notable campus buildings is the Corbin Education Center, which houses the College of Education. It is one of the last structures designed by the late Frank Lloyd Wright. An 18-hole golf course, tennis courts, and playfields are also a part of the campus.

During the past few years more than 300,000 square feet of space has been added to the campus in new buildings. Included are the McKnight Art Center with its Edwin A. Ulrich Museum of Art, Wallace Hall with laboratories for the College of Engineering, a new classroom-office building for Fairmount College of Liberal Arts and Sciences, and a new complex for the College of Health Professions. A $10 million structure for recreation and physical education was completed in 1983. The building is named for H. D. Haskett, a 1935 alumus and benefactor of the University. It provides office and laboratory space; a 200-meter six-lane track; swimming and diving pools; two dance studios; gymnasiump for basketball, tennis, and volleyball; and eight racquetball courts.

During 1984 construction began on a recital hall to house a Marcussen organ (the first for the Americas), and an $11 million addition to Ablah Library. Other special facilities meeting the needs of Wichita State are described on the following pages.

Wichita State University/ Special Facilities

Wichita State University operates Channel 13, its cable television system, to inform the Wichita community by providing contemporary computing services for instruction, research and sponsored programs, administrative, data processing, and public service. These services include consultation, systems analysis and design, programming, data preparation and data entry, interactive time-sharing, batch and remote batch computer operations, on-line administrative data base, and assistance to computer users in their preparation of requests for competitive bids for the acquisition and selection of computer-related equipment.

The central processing unit is an IBM 3081-D with 16 million characters of main storage and more than 12 billion characters of on-line disk storage. Magnetic tape drives, line printers, disc readers, a card punch, and an off-line digital plotter are available for general use. A network of more than 275 terminals provides interactive computing for campus classrooms, laboratories, and offices. These terminals may be used with the academic time-sharing system (CMS), interactive computer graphics, computer-assisted instruction, and the administrative terminal system (CICS). Interactive terminal facilities for students and faculty are located in Ablah Library, the College of Business Administration, the College of Engineering, the departments of chemistry, mathematics, physics, geology, and anthropology, and in the Social Science Laboratory, where a remote batch card reader and line printer are located. Over 250 microcomputers are integrated into the instructional and research areas on campus. Facilities are available to permit transfer of information between the central computer and microcomputers equipped for communications.
The Digital Computing Center terminal facility is located in Neff Hall. Color graphics terminals, a color graphics printer, and several other CRT terminals are available in Room 114. CRT terminal facilities and hard copy terminals are located in Room 113. Both rooms are open and available 24 hours a day, seven days a week. Scientific programming and consulting services for faculty and staff instructional and research projects are located in Room 119. Student programming assistance and academic user services are located in Room 115. Batch and remote batch jobs may be submitted 24 hours a day. Printer and plotter output may be picked up from the dispatch window at Room 108 during scheduled hours.

Harvey D. Grace Memorial Chapel
Harvey D. Grace Memorial Chapel, located in the heart of the campus near Morrison Hall and the Campus Activities Center, was built in 1963 and dedicated to serve all creeds and races. The chapel is available to all students for group or individual worship and meditation.

Helpern International Center
The Milton Helpern International Center for the Forensic Sciences serves as a vital resource of the Department of Administration of Justice and as an important depository of information relating to major forensic cases in the United States and abroad. Under the direction of Dr. William Eckert, the center serves as an important information source for forensic scientists and law enforcement agencies working to solve major criminal cases. The center also serves the needs of students majoring in the department. Its resources include extensive library materials, tapes, and other documents pertaining to forensic cases. The center is located in the Liberal Arts and Sciences building.

Heskett Center
The $10 million multipurpose physical education complex opened in the spring of 1983. It is named after H.D. Heskett, a 1935 alumnus and benefactor of WSU. The 166,000 square foot complex contains instructional, research and recreational areas as well as the equipment necessary to support activities. Activity areas consist of a weight room, combatives room, 25-meter indoor swimming pool with separate diving wells, a 200-meter indoor track which surrounds five courts and eight handball-racquetball courts. The outdoor area contains a six-court tennis complex and four large play fields.

These activity areas are designed to facilitate an extensive campus recreation program.

Institute of Logopedics
The Institute of Logopedics is a private, nonprofit, residential and outpatient rehabilitation center located on 40 acres near the Wichita State campus. The institute is the largest residential facility in the United States specializing in habilitation and rehabilitation of adults and children with speech, language, and hearing disorders. The institute is University-related through its affiliation with the College of Education's Department of Communication Disorders and Sciences, which offers academic preparation for Wichita State students desiring to work with communicatively handicapped children and adults. Observation and practicum opportunities are provided at the institute as part of the professional preparation of students in speech and language pathology and audiology.

KMUW—FM Radio Station
KMUW—FM radio broadcasts at 89.1 megahertz FM. The 10,000-watt stereo station is one of more than 300 public radio stations that make up the National Public Radio network. In addition to a full-time staff, about 50 students are involved in the total operation of the radio station. KMUW—FM programming includes coverage of major speeches, concerts, and other special events held at Wichita State.

Library/Media Resources Center
Through a wide range of materials, services, and facilities, the Library/Media Resources Center supports WSU courses and research. Its growing collection of over 2 million items includes not only books and periodicals, but microforms, corporate records, college catalogs, videotapes, films, slides, phonograph records, filmstrips and audiotapes. The Library also serves as a depository for selected official publications of the United States. Media and telecommunication services support instruction and campus activities. The Library has open stacks and reference librarians are ready to help students and faculty locate information and use the card catalog and reference collection. They also perform literature searches in the numerous computerized data bases to which the Library has access. Materials not owned by the Library may be borrowed from other institutions through interlibrary loan. The Library also makes available study carrels, electronic carrels containing listening and viewing equipment, group-study rooms, microform reading equipment, copy machines, and typewriters.

The Department of Special Collections houses a rapidly growing manuscript collection of more than 500,000 pieces, including papers of the abolitionist William Lloyd Garrison and many U.S. congressional. Other collections include original editorial cartoons by Pulitzer prize-winning cartoonists, publications of U.S. radical organizations, and maps and books on regional and local history.

The Media Resources Center houses films, video tapes, and the University's cable television station. Its facilities include a television studio, graphic and photographic production areas, satellite television reception terminals, audio studios, stage scenery shops, and class rooms with multimedia equipment. Qualified students have access to MRC's audio and video-editing facilities and may check out multimedia equipment for class-related activities. Besides offering courses for university credit, WSU Cable 13 and University television services provide job experiences for students who assist in television operations.

Reading/Study Skills Center
Wichita State offers a variety of services to students through the programs of the Reading/Study Skills Center. Credit and noncredit courses are offered to help students improve their reading and listening skills. Complete descriptions of the credit and noncredit courses offered at the center are included in the University College section of the Catalog.

In addition to formal course work, a math lab and other study skills workshops are made available to students enrolled at Wichita State.

Rehabilitation Engineering Center
The Kansas Board of Regents formally established the Rehabilitation Engineering Center in the WSU College of Engineering during 1978. The objective of the Center is to use technology to improve the vocational prospects of the severely disabled.

A qualified engineering staff, along with a rehabilitation laboratory, technicians and a well-equipped shop facility, provides the means to accomplish the center's goals. A federally sponsored rehabilitation grant allows faculty and staff to participate actively in this research.

Satellite Television Reception
Two satellite television antennas are used to receive video and audio signals from communications satellites serving North America. Satellite television re-
sources provide students studying foreign languages with television programs produced for French and Spanish speaking audiences, furnish programming for WSU's cable television station; and enable the University to participate in national video teleconferences. Receiving antennas are located to the southeast of the Library/Media Resources Center.

Satellite Tracking Station

Tracking station facilities are available at Wichita State for faculty and students to use in electrical propagation studies. The station consists of an antenna system of crossed Yagi arrays, together with receiving and recording equipment for decoding video and infra-red information.

Social Science Research Laboratory

The Social Science Research Laboratory supports both instruction in research methods and student and faculty research in the social sciences. In addition, with the use of an optical scanner, examinations for classes across campus are graded and item analyzed. The LASTIC measure of students' perceptions of teaching and the English Placement Examinations are scored and managed by the laboratory.

The laboratory is located in the Liberal Arts and Sciences building. Equipment includes several CRTs, Decwriters, and a high-speed printer, all connected to the WSU mainframe. The laboratory is open for use to students, faculty, and social science classes.

Sports and Recreation

Sports and recreation facilities available to students at Wichita State include a regulation 18-hole golf course and an outdoor swimming pool. The 10,666-seat Henry Levitt Arena is used for intercollegiate basketball games and major entertainment events. Cessna Stadium, a 30,000-seat stadium, is used for football games and track meets. Under the west side of the stadium is the 114 foot slope of Shocker Mountain Ski School, the first synthetic ski slope ever built on a university campus. The slope has its own rope tow and a chair-lift is under construction; ski equipment is also available. The Shocker Baseball Field has its own artificial surface infield and grass outfield.

Wichita State is a member of the Missouri Valley and Gateway Athletic Conferences, and consistently ranks nationally in basketball, baseball, tennis and bowling.

The campus recreation program, featuring the new multipurpose complex, the Heskett Center, has been designed to provide activities for all students, faculty and staff. In addition to intramurals and open recreation time, offerings include special events; children's excursions for children of WSU students, faculty and staff; family programs, mini-classes and workshops; outdoor recreation, and aquatics.

Ulrich Museum of Art and University Art Collection

The Edwin A. Ulrich Museum of Art, which opened to the public in December, 1974, is now recognized nationally for the outstanding quality of its programs. One-person exhibitions of work by Joan Miró, David Hockney, Milton Avery, Kenneth Noland, Morris Louis, Isabel Bishop, Frederic Church, Childie Hassam, Alice Neel, Robert Motherwell, Alberto Giacometti, Gaston Lachaise, and the work of other famous artists have been shown in the museum. Although the emphasis has been on contemporary art, there have also been exhibitions as diverse as prehistoric American Indian pottery; treasures from Spanish galleons sunk in 1724; art from 16th and 17th century Antwerp; artifacts from the Civil War Ironclad, USS Monitor; holography; electronic art; and the art of New Guinea. In addition, there have been numerous photographic, print, and ceramic exhibitions, as well as visits by 50 well-known artists.

The 8,000-object Wichita State University Endowment Association Art Collection is especially strong in 20th century American art. Its most visible works are the 37 major outdoor sculptures that are scattered throughout the University campus. These sculptures were created by Barbara Hepworth, George Rickey, Lynn Chadwick, Louise Nevelson, Auguste Rodin, Joan Miró, Henry Moore, Theodore Roszak, Ernest Trova, and many others. The largest and perhaps the most significant outdoor work is a 28' x 52' marble and glass mosaic mural entitled Personnages Oiseaux. It was created especially for the facade of the museum by Joan Miró and dedicated in October, 1978. The mosaic, the largest in the world by Miró, is constructed of one million pieces of colored Venetian glass and was interpreted from Miró's maquette by Jacques Lore of Chartres, France.

Walter H. Beech and Supersonic Wind Tunnels

A variety of wind tunnels are available at Wichita State for faculty and student use in aerodynamic studies. The Walter H. Beech Wind Tunnel is a 200 mph closed-return tunnel with a 7 x 10-foot test section. A digital data logging system and an on-line microprocessor with plotting capability are employed as part of the readout system. Two supersonic wind tunnels, capable of producing wind velocities from two to four times the speed of sound, are available.

A new 1 x 1.3 meter subsonic wind tunnel has recently been completed. This facility features a laser velocimetry system for flow measurement. Two smoke tunnels, a boundary layer tunnel, and a water table are also available for flow visualization studies.
The Graduate Council consists of the deans of the Graduate School, ten members of the graduate faculty elected by that faculty, one member appointed by the graduate dean, and one graduate student. The council determines and recommends general policies for the Graduate School. The council also advises with the dean on matters submitted by him and serves as a committee on exceptions.

In addition, a Doctoral Program Subcouncil exists for the general advocacy of doctoral programs throughout the University community and to review, determine and recommend policies for doctoral programs. Membership consists of the graduate dean, one representative from each doctoral program and one member elected from the Graduate Council.

The primary goals of the Graduate School are to encourage independent scholarship and to develop competence in research or other creative activity. Students are expected to master special fields as well as to develop appropriate methods of inquiry for future professional growth.

Graduate School Policies

General Information

In order to receive graduate credit at Wichita State University, students must be admitted to some category of study in the Graduate School. A number of admission categories are available in the Graduate School to accommodate qualified students simply desiring to earn graduate credit for personal and professional reasons as well as those desiring to pursue graduate degrees. Courses numbered 500 and above carry graduate credit for students admitted to the Graduate School and enrolling with a Graduate School major code. Classes numbered 500 and above are restricted to graduate students only. Certain Graduate School admission categories restrict students in these categories to below 800-level classes as described in later sections.

The Graduate School does not deal with teacher certification matters as these are handled by the College of Education Teacher Certification Service Office, 151 Corbin Education Center.

Graduation Requirements

Several steps are required before a student receives a graduate degree from WSU. Although they are explained in more detail in other sections of the Bulletin, the following list summarizes the requirements:

1. Formal admission to the appropriate degree program.
2. An approved Plan of Study on file in the Graduate School office.
3. Satisfactory completion of prerequisites indicated when admitted.
4. Satisfactory completion of oral or language requirements.
5. An Application for Degree submitted before the set deadline.
6. Removal of all incomplete grades by the deadline specified.
7. Completion of terminal program requirements such as thesis, comprehensive examination, etc.
8. Submission of the bound thesis (when required) or a bindery receipt by the deadline specified.
9. A cumulative grade point average of at least 3.00 for all courses on the Plan of Study and for all graduate work taken at Wichita State University.

Graduate Degree Program Admission

Admission

Admission to a graduate degree program is based primarily upon an applicant's previous academic record; therefore, two official transcripts of all previous academic work must be submitted along with the Application for Admission. Some departments/programs require higher grade point averages than the minimum Graduate School requirements listed below, and other admission credentials (reference letters, Graduate Record Examination(s), etc.) are particularly true for the PhD programs. Individual departments should be consulted about such requirements.

Full Standing

Minimum Graduate School admission requirements for full standing are:

1. A baccalaureate degree from a regionally accredited institution.
2. A grade point average of at least 2.75 based upon the last 60 hours of course work (or nearest semester or term break to this), including any post-baccalaureate graduate work.
3. No more than nine hours of background deficiencies in the major field of graduate study desired.

Conditional Status

Students who do not meet the minimum academic requirements for full standing in degree program admission may be admitted on a conditional basis. Students are allowed one semester to submit the remaining credentials, and one year to remove background deficiencies. Transfer to a nondegree category or to the Division of Continuing Education will result if the necessary conditions are not satisfactorily met.

Probationary Status

Students who do not meet the minimum academic requirements for full-standing degree program admission may be admitted on probation when reasonable evidence exists to indicate their ability to do satisfactory degree program work.

Graduate Nondegree Admission

Students originally admitted to a nondegree category may later reapply for admission...
mission to degree program status. A maximum of 12 hours of graduate credit taken while in a nondegree category may be counted in a degree program, provided students have obtained the approval of their major departments and the graduate dean.

Category A
Students who already possess a graduate degree or who do not want to seek a graduate degree at Wichita State University should apply for admission in this category, if they meet the following requirements:

1. A baccalaureate degree from a regionally accredited institution.*
2. A grade point average of at least 2.75 based upon the last 60 hours of course work (or nearest semester or term break to this), including any post-baccalaureate graduate work.

Some departments require higher grade point averages and other admission credentials. Individual departments or the Graduate School should be consulted about such requirements.

Applicants for category A must submit to the Graduate School a completed Application for Admission and two official transcripts of the work for either a previous graduate degree or for a baccalaureate degree.

Admission to this category provides students the opportunity to take courses at Wichita State for which they have the prerequisites. Upon satisfactory completion of a course, credit is placed on a Wichita State graduate transcript. How­ever, only credit earned in courses numbered 500 and above is counted as grad­uate credit under the Senior Rule. This credit under the Senior Rule must apply to the Graduate School for regular graduate admission, and also complete a Senior Rule application form. Approval of the Senior Rule course work is needed from the student’s major adviser, the department chairperson or graduate coordinator for the department in which the work is to be taken, the graduate dean of the student’s college, and the Dean of the Graduate School before any courses can be taken for graduate credit. In addition, students from neighboring institutions must be admitted as undergraduates (possibly as guest students) through the University admissions office.

International Students
A $25 non-refundable application fee is required of international students, ex­cept those entering the Graduate School directly after attending Wichita State as undergraduates.

In addition to Graduate School and departmental admission requirements, international students must present a completed official Wichita State University Graduate School Statement of Financial Support before necessary visa forms can be issued. International student must also attain a minimum score of 550 on the Test of English as a Foreign Language (TOEFL), unless they have attended another U.S. university for a minimum of one year.

International students who qualify for admission to the Graduate School may apply to their department chairperson or the dean of their college for information on graduate fellowships and assistant­ships. Enrollment in 9 hours at the graduate level each semester is mandatory.

International students presently in the United States on a student visa obtained by admission to another U.S. university will not be considered for admission to Wichita State until they have attended the institution issuing their original I-20 for at least one year. Exceptions to this policy require the concurrence, in writing, of the institution issuing the original I-20.

International students requiring student visas are not eligible for nondegree admission categories.

Former WSU Graduate Students
Students who have completed graduate course work at Wichita State University but who do not enroll for more than twelve months are placed in an inactive status on the registrar’s computer data base. To enroll again, such students need to write or call the Graduate School office and ask to have their records

Students admitted to this category are restricted to enrollment in courses numbered below 750 for which they have the prerequisites. Credit earned in this category will be placed on a Wichita State graduate transcript, with graduate credit being awarded for courses numbered 500 and above.

Workshops Only
Persons with a baccalaureate degree who are interested in taking only workshops (courses numbered 750) and want a simplified admission process should apply for workshops-only status. An Application for Special Workshop Status form and one of four possible admission credentials listed on the application form must be submitted. Enrollment is limited to courses numbered 750.

At the option of the department the performance of all students in a workshop is evaluated on either a regular letter grade or S (satisfactory) — U (unsatisfactory) basis. This option is decided before the Graduate School gives approval to the workshop.

Students submitting official transcripts of their baccalaureate degree as the credential for admission to workshop-only status should apply for nondegree, category A or B, admission instead in order to broaden the range of possible courses they may take without reapplication.

Guest Students
Graduate students in good standing at another accredited graduate school may be admitted to Wichita State as guest students, if they have their school’s permission to take up to one semester’s work at WSU for transfer back to their home institutions. Admission requires the submission of a completed Application for Admission and a signed letter from the graduate dean or the dean’s representative at the home institution certifying the student’s status there. Such admission is valid for only one semester.

Graduate Credit for Seniors (Senior Rule)

Seniors at Wichita State or neighboring baccalaureate-degree-granting institutions may qualify to take work for graduate credit under the Senior Rule. This opportunity applies to students who have an overall grade point average of 3.00 or above in their major field and in upper-division courses, and who are within 10 hours of completing the bachelor’s degree. Work must go beyond the requirements for the bachelor’s degree, and the degree must be completed within the semester in which a student takes the graduate courses.

Students who wish to earn graduate credit under the Senior Rule must apply to the Graduate School for regular graduate admission, and also complete a Senior Rule application form. Approval of the Senior Rule course work is needed from the student’s major adviser, the department chairperson or graduate coordinator for the department in which the work is to be taken, the graduate dean of the student’s college, and the Dean of the Graduate School before any courses can be taken for graduate credit. In addition, students from neighboring institutions must be admitted as undergraduates (possibly as guest students) through the University admissions office.

THE GRADUATE SCHOOL 13
Courses

Other courses may be taken as credit in a student's graduate program and are not field, and students should become aware of such restrictions before enrolling.

Courses numbered 500 through 799 may be taken by both undergraduate and graduate students. In such mixed classes a discernibly higher level of performance by graduate students is expected with the nature of this differential performance set by the professor. Graduate students enrolling in such classes automatically earn graduate credit unless the professor and adviser request the Graduate School to have the given enrollment designated on the transcript as "Undergraduate Credit Only."

In special cases, courses in areas where advanced degree programs are not currently available may carry graduate credit and apply toward an advanced degree in a related field or simply count as graduate credit for some nondegree purpose. Any of these courses applied toward an advanced degree program must have the approval of the student's adviser and the chairperson of the department involved in advance of enrollment.

Independent/Directed Study Courses

A primary goal of the Graduate School is to encourage independent scholarship. Thus, graduate students have many opportunities to engage in self-initiated independent study under the supervision of an individual member of the graduate faculty. In addition to traditional titles, such as thesis, research project, internship and practicum, various departments use independent study, special problems, directed readings, individual projects, directed study, etc., to identify opportunities for individual study. The following requirements govern enrollment in independent study offerings.

1. Consent of the instructor must be obtained before enrollment.
2. The content of the study should not be the same as that covered in a regular course (exceptions to this requirement must have the approval of the graduate dean before enrollment).
3. Although scheduled on an arranged basis, there must be a sufficient number of contact hours between the student and supervising instructor during the duration of the independent study to ensure consistency with the amount of graduate credit earned in regular course offerings.
4. No more than 6 hours of independent study course work (excluding thesis and other independent study activities that are terminal requirements for a degree) can be used in a degree program.
5. Each student enrolled in an independent study offering is required to submit an abstract of the project to the supervising instructor at the time the product of the independent study is submitted for evaluation (excluding thesis, research projects and other terminal projects required for a degree). Some departments have specific requirements that must be met before enrolling in independent study courses.

Cooperative Education Program

Cooperative Education is an academic program for undergraduate and graduate students who wish to combine classroom studies with academically related employment by being placed in paid internships closely related to their academic majors. Cooperative Education places students both locally and nationally.

By utilizing off-campus resources and expertise, cooperative education places students in business, government, industry, health, and social agencies. Programs are individually designed enabling students to work directly with professionals in their field while expanding upon knowledge learned in the classroom. Opportunities may occur for students to refine research methods, apply theories in actual field settings, work with advanced technology, and design original projects and research.

Students placed in cooperative programs must enroll in specially-designated co-op courses and work with a faculty adviser from within their appropriate departments. Each placement is supervised by the faculty adviser for its potential to provide learning experience relevant to the student's professional and educational goals.

Academic credit may be earned through co-op placements as determined by the student's faculty adviser. During the internship, students are expected to meet project requirements assigned by their adviser. Academic credit generally counts toward University degree requirements.

Cooperative Education offers both full-time and part-time placements. Students who select the full-time internship option must alternate a semester of full-time internship with one of study. Full-time interns also carry the status of full-time students and enjoy the accompanying privileges.

Students selecting the part-time option are required to carry a minimum of 6 hours of course work in addition to their co-op course. Students may enroll in part-time co-op positions during consecutive semesters so long as faculty sponsors determine that meaningful learning experiences exist.

Requirements for co-op participation vary within the different colleges and departments. Requirements for admission to the co-op program generally include completion of 24 credit hours and satisfactory academic standing. Interested students should contact the Cooperative Education Office in 107 Morrill Hall or the (316) 689-3688. Students are required to complete an application for admission and schedule an interview with the appropriate co-op coordinator.

Advisers

Graduate students admitted in a degree program category are assigned faculty advisers when admitted to the Graduate School. Course work taken without the adviser's expressed approval is not automatically applicable toward a degree. Students in nondegree status in des
In designated departments are also assigned faculty advisers for consultation purposes. Students should consult their adviser for information on course prerequisites, content and similar matters.

Students admitted to nondegree undesignated status are not assigned faculty advisers and should be aware of this limitation when enrolling.

**Enrollment, Drops and Adds**

Procedures and times for enrollment are established by the registrar. Graduate students must enroll according to the times (determined alphabetically) published in the *Schedule of Courses* for any given term. Adherence to the enrollment schedules will minimize problems of unavailable records and other delays.

Students who have not enrolled for two or more semesters prior to a planned new enrollment should call the Graduate School to request preparation of enrollment materials and to clear any problems relating to their planned enrollment.

Once a student has enrolled, classes can be changed only by filing a Drop and/or Add Form with the necessary signatures. Changes of sections also require such action. If these forms are not submitted, an F grade could be recorded for failure to attend the class shown on the original enrollment records.

*Fees are charged for late enrollments and drops.* Only partial refunds are made after certain cutoff dates. Enrollments or adds normally will not be approved after the twelfth class day. Drops of classes with a W grade are also subject to a time limit established by the registrar.

The Graduate School, (316) 689-3095, has more information about deadlines of these items.

**A/Pass/Fail; S-U; and Audit Enrollments**

Graduate students taking courses numbered below 500 may do so on an A/Pass/Fail grading system by declaring their intent to do so at the time of enrollment. Courses numbered 500 through 699 that are certified as carrying undergraduate credit for a given graduate student may also be taken on the A/Pass/Fail basis if the student declares intent at the time of enrollment. Credit earned in such courses may not later be changed to graduate credit.

Courses carrying graduate credit for a student may not be taken on the A/Pass/Fail basis.

Certain approved courses numbered 500 and above that carry graduate credit for a student are graded S (satisfactory) – U (unsatisfactory) for all students enrolled. Such courses are identified in the Schedule of Courses. Students enrolling in special offerings for graduate credit will be informed of S-U grading by the instructor if this system is to be used. No more than 6 hours of work graded “S” may be used toward the requirements for a graduate degree.

Students wishing to transfer graduate course work graded S-U to a degree program at another institution should inquire of that institution's willingness to accept credit graded in this manner before enrolling.

Graduate students may take any course for which they have the prerequisites and which is open to them on the basis of their admission category on an audit (no credit) basis. The tuition and fees are the same as for auditing courses with the conditions for enrollment in courses numbered 500 and above.

*Administrative Withdrawal*

Administrative withdrawal may be initiated by the graduate dean for the following reasons:

1. The student's class attendance is so irregular that in the instructor's opinion full benefit cannot be derived from the course.
2. The student fails to withdraw from one or more classes by the official procedure given in the *Wichita State University Schedule of Courses*.
3. The student does not meet the conditions for enrollment in courses numbered 500 and above.
4. The student's behavior is prejudicial to Wichita State.

**Grades, Probation and Dismissal**

Course work for graduate credit is normally graded A, B, C, D, or F (see exceptions above). Faculty have the option of assigning an I (incomplete) if they feel that sufficient justification exists for the student's failure to complete the course.

Incomplete grades for regular courses (excluding research, thesis, etc.) must be removed within one semester of actual enrollment, excluding Summer Session, or the grade of I will remain. If the preceding time limit is not met and students desire credit, they must reenroll in the course. If students reenroll in a course for which they received a grade of I, the I is changed to a W for the original enrollment when the grade earned during the repeat enrollment is assigned if the grade earned during the repeat enrollment is assigned. The grade earned during the repeat enrollment becomes the grade of record. Faculty members may define other conditions for the removal of I grades within the general framework indicated here.

Graduate credit courses in which grades of C or above are earned cannot be repeated. Grades below C may not be used to satisfy degree requirements, but such courses may be repeated. The grades of all repeated courses that are started within six years or less before the end of the semester within which the degree work is completed are averaged with the original grades to determine a student's grade point average.

The graduate grade point average includes only those courses taken at WSU for which graduate credit is earned and for which a regular letter grade (A, B, C, etc.) is assigned. Courses transferred from another institution, and graduate credit courses graded S (satisfactory) do not affect the graduate grade point average.

Students admitted to full standing in a degree program, or non-degree category A, will be placed on academic probation if their graduate grade point average falls below 3.00. Students admitted on probation or placed on probation after admission are automatically placed in full standing if they attain a cumulative grade point average of at least 3.00 within nine additional hours of graduate credit course work.

Students may be dismissed from their degree program or nondegree category A if they fail to attain a cumulative grade point average of at least 3.00 within nine graduate credits after admission on probation or placement on probation after admission. Students in any category may be dismissed from the Graduate School if they fail to maintain a grade point average of at least 2.00 in all work taken (including undergraduate courses) after admission.

Students also may be dismissed from a graduate degree program if, in the opinion of the graduate faculty offering the program, they are unable to carry on advanced work or make satisfactory progress toward the degree. Students dismissed for this reason may be transferred to a non-degree category.

**Exceptions**

Departures from the rules and regulations stated in the *Graduate School Bulletin* require the filing and approval of a Request for Exception. Such requests must have the approvals indicated on the form and must state in a logical and coherent manner a rational basis for the requested exception. Forms for such requests are available from the Graduate School.

Unusual and/or substantial deviations from stated rules and regulations require action by the Graduate Council and may involve delays of several weeks.
Load Definitions
At least 9 hours of graduate credit course work is full-time graduate enrollment during the fall or spring semester. During the Summer Session, a minimum of 6 hours is full-time graduate enrollment. For graduate assistants working 20 hours per week, 6 hours constitutes a minimum full-time enrollment.
Enrollment in undergraduate credit courses only, or a mixture of graduate and undergraduate credit courses, can affect these definitions. The dean of the Graduate School should be consulted for interpretation of specific cases.
The normal load for graduate students is 12 hours of graduate credit during the fall or spring semester. More hours may be taken with the advisor's approval, but graduate students may not enroll for more than 16 hours per semester (doctoral dissertation credit excluded), or 9 hours during an eight-week Summer Session. Students may petition the Graduate School before enrollment for exceptions to this policy.
The course loads of students with teaching or research assistantships are normally reduced in recognition of the work they perform. While the Graduate School sets no official maximum number of hours, other than the 16-hour limit, students holding assistantships should work with their advisors to arrive at a load appropriate to their situations.
Special consideration for thesis and research enrollments may be obtained by petitioning the Graduate School.

Faculty Restrictions
Members of the staff of instruction at Wichita State University who hold the rank of assistant professor or higher cannot earn graduate degrees from Wichita State except for ROTC faculty, unassigned faculty (not attached to a particular college) or faculty members granted specific approval by the Graduate Council. Full-time faculty members may not pursue more than 6 hours of graduate credit per semester.

Degree Program Regulations
To pursue a graduate degree at Wichita State, students must be admitted to the specific program for which they are seeking a degree. Students may not be admitted to more than one graduate degree program at a time.
Upon the advice and consent of the major department, a maximum of 6 semester hours of work in one earned master's degree program may be applied to a second master's degree.

Credits Required
All master's degrees require a minimum of 30 credit hours of graduate credit work, including 12 hours in courses numbered 700 and above, excluding workshops (numbered 750). Some programs require more than 30 credit hours of work and more than 12 hours of work in courses numbered 700 and above. Specific program requirements are listed in the individual department's section of the Graduate School Bulletin. Requirements for specialist and doctoral programs are also listed in the individual department's section of the Graduate School Bulletin.

Plan of Study
In order to officially define a program of study for a graduate degree, students must submit in triplicate the Plan of Study form leading to admission to candidacy for the degree no later than one month following the completion of the semester hours of graduate credit or the semester prior to the semester of graduation, whichever comes first. The process of filing an acceptable Plan of Study is not completed until the student and advisor have received copies of the plan, approved by the Graduate School. If these copies have not been received approximately three weeks following submission, students should check with the Graduate School office.

Students are candidates for a degree once the Plan of Study has been approved. A Plan of Study is developed in conjunction with the advisor, signed by the candidate, the advisor, the chairperson of the major department and the dean of the Graduate School. All academic work completed and planned for the degree must be included in the Plan of Study at the time of submission.

Students may make changes of up to three courses in the Plan of Study at any time without the consent of the advisor. Once the Plan of Study has been approved by the student and advisor, the candidate may make changes in the Plan of Study marked "revised plan." Failure to meet the deadline for filing an acceptable Plan of Study may result in a delay in graduation or loss of credit planned for use in the program.

Language or Tool Requirements
The Graduate School has no overall language or tool requirements, although such requirements have been established by some departments. Students should consult an individual department's section of the Graduate School Bulletin for information regarding such requirements.
Any tool subject (e.g., foreign language, computer programming, statistics, etc.) required by the major department must be identified in the student's Plan of Study. The completion of this tool is not required prior to submission of the Plan of Study but is required prior to graduation.

Transfer of Credit from Another University
Graduate credit work at another university is not transferred and entered on a Wichita State transcript except in degree programs and only then after completion of all work for the degree, as defined on an approved Plan of Study. Students may transfer, with departmental approval, graduate credit from an accredited graduate school under the following conditions:
1. (a) The credit offering institution is accredited by the cognizant regional accrediting association to offer graduate degree programs appropriate to the level of credit to be transferred, (b) the credit is fully acceptable to that institution in satisfaction of its advanced degree requirement and (c) the credit is applicable in terms of content to the student's program of study.
2. Master's programs requiring fewer than 40 hours may include no more than one-third of the total hours or 12 hours, whichever is greater, of graduate work completed at another accredited graduate school. Departments may require lower limits on transfer credit and therefore students should consult individual program descriptions. Doctoral, Master of Fine Arts (MFA), Master of Business Administration (MBA) and other more lengthy programs have special transfer credit allowances, as indicated in their program descriptions.
3. Students assume responsibility for initiating the request for transfer of graduate credit on a Plan of Study. An official transcript containing the requested transfer work must be on file in the Graduate School. If such work is shown on the transcripts provided in support of the original admission to the Graduate School, no new record need be provided. Approval by the major department is necessary to ensure that the course work has been accepted as an integral part of the candidate's program.
4. Courses considered for transfer must have been completed at an accredited graduate school and must carry a minimum grade of B.
5. Graduate credit earned through correspondence courses cannot be used to meet degree requirements.
6. Transfer credit that is accepted must have been in courses started six years or less before the semester in which the degree work is completed.

Extension, Workshop and Correspondence Credit and Credit by Examination

Workshops and extension graduate credit courses may be accepted for graduate credit as part of a graduate degree program under the following conditions:

1. The work is approved by the major department.
2. The work is approved by the dean of the Graduate School.
3. The work is an integral part of a program planned by the candidate and the adviser and listed on an approved Plan of Study. Graduate credit cannot be earned under a credit by examination program.

Degree Card Filing

An Application for Degree card must be filed with the Graduate School within three weeks (15 class days) after the beginning of the regular eight-week session even if they plan to enroll for the second four weeks only. In the latter case the degree card must be filed within the first week with an indication of intent to enroll for the second four weeks only. Failure to meet these deadlines will result in a delay in graduation and in the awarding of the diploma. In these cases, if all work is completed, students need not enroll for the following semester.

Time Limits

Courses started more than six years before the semester in which the degree work is completed may not be used to meet degree requirements.

Thesis or Research Credit

Students' graduate transcripts must show thesis or research project credit when a thesis is part of the degree program. The transcript will normally carry the grade of I until the thesis is completed and students have met the thesis and research project requirements of the thesis committee and the Graduate School. A grade of B or better is required for an acceptable thesis.

Students writing a thesis or engaged in research must be enrolled in courses entitled "Thesis" or "Research" each semester in which they receive advice, counseling or research direction from their adviser. Enrollment is for the number of hours that accurately reflects demands of the students on University faculty and facilities.

Two bound copies of the thesis in approved form must be filed with the Graduate School. (See the Graduate School calendar on the inside of the back cover of the Graduate School Bulletin for the due date.)

Thesis Preparation

The thesis must be typed and submitted on 16- or 20-pound bond paper, with a minimum of 25 percent rag content. The thesis must include an abstract not more than one page in length which is to be placed directly after the title page. Theses may be photocopied if copies are made on the required paper. Title pages on all copies must contain original signatures. The Modern Language Association (MLA) Style Sheet, available at the Wichita State University Bookstore, or other style manuals approved by the major department should be followed in the thesis preparation.

Examinations

Qualifying examinations are administered by several departments to determine students' qualifications for further graduate study. Most departments also require written or oral comprehensive examinations. Committees for these examinations are recommended by the major department and approved by the dean of the Graduate School. Each committee must include at least three members chosen from the graduate faculty.

Final oral examinations are required of all students presenting theses or research projects. Thesis committees include a minimum of three and a maximum of five voting members. Voting members are full or associate graduate faculty or persons from outside the faculty.

Financial Information

Basic Fees

The current fees, listed below for 1985-86, are subject to change by the action of the Kansas Board of Regents or the state legislature.

<table>
<thead>
<tr>
<th>Tuition</th>
<th>Resident</th>
<th>Nonresident</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 through 14 hours-per-credit</td>
<td>$37.00</td>
<td>$97.15</td>
</tr>
<tr>
<td>15 hours and above-flat fee</td>
<td>552.00</td>
<td>1,457.00</td>
</tr>
<tr>
<td>Student Fee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 through 14 hours-per-credit</td>
<td>$8.20</td>
<td>$8.20</td>
</tr>
<tr>
<td>15 hours and above-flat fee</td>
<td>123.00</td>
<td>123.00</td>
</tr>
<tr>
<td>Heskett center fee-per-semester</td>
<td>5.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

The student fee is required of every student enrolled for work on the Wichita State campus during the regular semesters and Summer Session. The fee is distributed to pay revenue bonds for parking, the Campus Activities Center, the Cessna Stadium Addition, academic and service buildings, Heskett Center.
Abrah Library and for certain services and organizations, including student health services, athletic admissions, forensics, Student Government Association, University Forum Board, student publications, concerts, and drama and opera productions.

Special Fees and Refunds
Prior to each semester, the registrar establishes enrollment dates. Late registration is a special service resulting in extra costs for special staff and facilities. Students who register late are assessed late registration fees as published in the Schedule of Courses.

Students who drop courses are assessed one transaction fee for all courses dropped at the same time. This fee recognizes that in many instances students have occupied space in class which was not available to other students and for the extra cost of staff and facilities to handle the transaction. The amount of the fee is published in the Schedule of Courses.

Refunds of tuition fees will be granted for withdrawals in accordance with dates and regulations published in the Schedule of Courses for the semester.

Fee Waiver Policy
The dean of the student's college, or his or her designee, or the dean of admissions and records may authorize a waiver of special fees and/or nonrefundable tuition fees in cases where the schedule change or withdrawal is required because of University regulations, clerical errors, misadvising, class schedules change by the University or other exceptional circumstances beyond the control of the student and determined valid by the college dean or his or her designee. To petition for a waiver, request a petition form from the dean's office of your college and provide the information asked for on the form and submit the completed petition to the college dean's office for consideration. Graduate students should petition the Graduate School dean's office. The student is notified of the action taken on the petition. If approved, the student should submit the petition to the controller's office with enrollment, schedule change or withdrawal forms. If the petition is denied the student may get information from the dean of his or her college on how to file an appeal.

Graduate Assistantships, Fellowships and Scholarships, and Loans

Assistantships
Each year Wichita State awards a number of assistantships for advanced study. Grants are made in most departments offering advanced degrees. Graduate assistantships provide for cash stipends up to an approximate $6,000. A graduate teaching assistantship may qualify the recipient for up to a 60 percent waiver of tuition. The department chairperson or graduate coordinator should be contacted for further information.

Assistantships are awarded primarily on the basis of a student's academic record and demonstrated teaching, research and leadership abilities, together with any other available supporting evidence. Students on academic probation and Senior Rule students are not normally considered for assistantships.

Carl Fahrbach Memorial Graduate Assistantship. A memorial to Dr. Carl G. Fahrbach, former dean of admissions and records, this assistantship is awarded to a full-time graduate student in the area of counseling and school psychology in the Department of Personnel Services in the College of Education. It is awarded for one academic year and is renewable upon the recommendation of an advisory committee.

Public Administration Affairs Assistantships. Each year Wichita State awards, through the Public Administration Program Committee, a number of graduate assistantships for advanced study in public administration providing for cash stipends of approximately $5,000.

Fellowships and Scholarships
Wichita State awards fellowships and scholarships to graduate students, as described below.

Doctoral Fellowship Awards. Fellowships are awarded to a limited number of graduate students who are admitted to a program of graduate study leading to a doctorate degree and who are in good academic standing. Awards are made primarily on the basis of the academic achievement and potential of the student as a candidate for a doctoral degree. Credentials, such as transcripts of all previous academic work, scores on national or local examinations, experience related to the field of study and evaluations by former teachers, advisers or employers, are used in determining awards. Selections are made on a competitive basis without regard to race, creed, sex or national origin and are generally announced by April 15 for award the following fall.

James Chubb Memorial Fellowship. Established in 1971, the fellowship is awarded to a graduate student in the Department of Economics. Preference is given to members of the Chubb family.

James H. Hibbard Memorial Scholarship. Graduate students in chemistry who are interested in the study of medicine or research in some phase of medicine are eligible for this scholarship.

Kiwanis Scholarship in Public Administration. Established in 1974, a $5,000 scholarship is provided by the Downtown Kiwanis Club in Wichita for graduate study leading to a master's degree in public administration. Final date for applications is February 15. All awards are contingent upon acceptance for graduate study.

The Hugo Wall Fellowships. Established in 1973, these are awarded to outstanding students with an urban affairs or public administration background seeking the Master of Public Administration degree. The fellowships honor the contributions to public administration by the late Professor Hugo Wall. Applications must be filed with the Public Administration Program coordinator, Wichita State University, Wichita, KS 67208, by March 1 for the following academic year.

Wichita State University Chapter of Phi Delta Kappa Scholarship. This $200 scholarship is awarded annually to a graduate student enrolled in a program in the College of Education. It is made upon basis of merit and need.

WSU Endowment Association and City of Wichita Fund Fellowships and Assistantships. In addition to the regular teaching and research awards, a number of graduate fellowships and assistantships are provided by the Wichita State University Endowment Association and the City of Wichita Fund. These awards require full-time study, or a combination of research assistance and study equivalent to full-time study. The awards are made in graduate program areas judged to have a special need for graduate student support and are based primarily upon a student's academic record, experience and other available supporting evidence. All such awards are made by the graduate dean upon recommendation of the selected department's chairperson. Inquiries about these awards, which include both master's- and doctoral-level students, should be made to the Dean of Graduate Studies and Research, Wichita State University, 107 Jardine Hall, Wichita, KS 67208.

Loans
Wichita State grants loans to graduate students as described below.

Delano Maggard, Jr., Graduate Student Loan Fund. Funds have been provided through the Wichita State Endowment Association for loans to encourage
graduate student research. The loans are "forgivable" if certain criteria governing the research effort are met. Application deadlines are October 1 (fall semester) and March 1 (spring). Interested students should contact the Graduate School office for details.

Symbols and Abbreviations

Symbols

When two course numbers are joined by a hyphen (-), the first semester is prerequisite to the second; when the numbers have an ampersand (&) between them, the two semesters may be taken in either order. Unless specifically noted otherwise, the first course listed is noted otherwise, the first course listed is

The number of credit hours for each course is indicated in parentheses following the course title. The number of class meetings per week is normally the same as the number of credit hours. Two hours of laboratory work are usually required for one hour of credit. In courses involving meetings other than lectures, the following symbols are used: R, lecture; L, laboratory; C, conference; D, demonstration; and P, practicum, with the hours of practicum per week given in front of the letter (6-8P means 6 to 8 hours of practicum per week).

Abbreviations

The following abbreviations of academic departments are used in references to courses offered by those departments.

Abbreviations

DEAD

College of Business Administration

Offices: 100 Clinton Hall

Douglas Sharp, Dean

Dennis C. Duell, Associate Dean

W. Dean Vickery, Assistant Dean

Robert H. Ross, Director of MBA Program

School of Accountancy—Michael Foran, chairperson

Departments:

Economics—Gerald S. McDougall, chairperson

Finance, Real Estate and Decision Sciences—John McBride, chairperson

Management—Kae Chung, chairperson

Marketing and Small Business—Frederic Kraft, chairperson

Graduate Faculty

School of Accountancy

Professors: Ralph W. Estes, Michael Foran (chairperson), Phillip May

Associate Professors: Linda C. Mitchusson, Douglas Sharp (dean, College of Business Administration)

Assistant Professor: Sidney Brinkman, Tsa-Yen Chung, Nancy Foran, Katherine Moffett, David A. Rees

Economics

Professors: Randall B. Haydon, Martin M. Perline, Jimmy M. Skaggs, Samuel C. Webb

Associate Professors: Dong W. Cho, Dennis C. Duell (associate dean, College of Business Administration), Gerald S. McDougall (chairperson), Maurice Pfannesiel, William T. Terrell, I. N. Yoon

Assistant Professors: Steven Beckman, James E. Clark, Ed A. Fagerlund, Joshua Foreman, Philip Hersch

Finance, Real Estate, and Decision Sciences

Professors: Donald R. Levi, James M. Murphy, Curtis Terflinger

Associate Professors: Anita M. Bateman, John D. McBride (chairperson), Dwight D. Murphy, Carl C. Nielsen, Hossen Salizada

Assistant Professors: Carlos Alcarraca-Joquin, William Hascase, Jinoos Hassani, Fred Haafat, Pochara Theerarat

Management

Professors: Kae Chung (chairperson), Gerald H. Grahan, Arthur B. Sweney

Associate Professors: John A. Belt, Dharma deSilva, Kamal Fatehi-Sedeh

Assistant Professors: Nancy Mason, W. Dean Vickery

Marketing and Small Business

Endowed Professor: Billy M. Jones

Associate Professors: James M. Bailey, Donald Hackett, Frederic K. Kratt (chairperson), Robert H. Rorr (director, MBA program), Douglas W. Schell

The mission of the Wichita State University College of Business Administration is to offer learning opportunities which
contribute to the development of professionally competent and socially responsible men and women for careers in business, government, and other organizations requiring the organizational, managerial, and analytical skills necessary in today's rapidly changing environment.

This mission is influenced by the location of the college in the largest economic and cultural center in the state of Kansas. As an integral part of the state's designated urban university, the faculty of the College of Business Administration is committed to programs and activities that will help sustain the contribution that this urban center makes to the economic, professional, and cultural health of the state and nation.

Graduate degree programs in the college lead to the Master of Business Administration (MBA), Master of Professional Accountancy (MPA), Master of Science (MS) in administration, and the Master of Arts (MA) in economics. In previous years the MS was also offered in accounting, but this program is being phased out and replaced by the MPA. No further admissions to the MS degree program in accounting are being accepted. Students currently pursuing such a degree have the option of transferring to the MPA program or completing the MS degree in accounting by December 31, 1986.

Master of Professional Accountancy

The Master of Professional Accountancy program at Wichita State University is designed to prepare qualified candidates for careers as professional accountants in public practice, industry, government, and not-for-profit organizations. The program is based on strong preparation in general education courses with special emphasis on communication skills, mathematics and economics, and includes a broad exposure to the different aspects of business and management. It normally requires five years of full-time study.

The overall MPA curriculum is divided into two components—the preprofessional curriculum, requiring approximately three years (96 semester hours of work), and the professional curriculum, requiring two years (55 semester hours). Candidates in the professional curriculum are accorded graduate student status even though they have not received baccalaureate degrees.

Admission Requirements

There are no special requirements for admission to the preprofessional curriculum. Candidates should simply go through regular procedures for admission to the University, declaring their major as "Accounting—MPA." Admission to the professional curriculum requires:

1. Completion of the preprofessional curriculum. The normal Graduate School requirement that candidates for full graduate standing hold a baccalaureate degree does not apply to candidates for admission to the School of Accountancy and the MPA professional curriculum.

2. A minimum grade point average of 3.0 on the 12 hours of accounting courses required beyond the introductory level (Acct. 310, 320, 410 and 430).

3. A minimum score of 400 on the Graduate Management Admission Test (GMAT).

4. A total of 1,000 points based on the formula of 200 times the overall grade point average on the last 60 hours plus the GMAT score.

Candidates who are in the last term of the preprofessional curriculum and who meet requirements two through five will be granted "tentative" admission; their status will be changed to full standing when they complete the remaining courses while maintaining the required grade point average.

Students who have completed 96 semester hours and lack more than 9 hours of specific preprofessional courses may be admitted in conditional status. Those who do not meet the minimum GMAT and grade point requirements may be admitted to probationary status. (For a full definition of conditional and probationary status, see the Graduate Degree Admission section of the Bulletin.)

WSU students pursuing the BBA in accounting who have completed more than 96 hours of work and wish to transfer to the MPA program may do so upon meeting the admission requirements. A student who has been admitted to the School of Accountancy and the MPA Professional curriculum may also transfer to the BBA in accounting program.

Candidates who hold a baccalaureate degree from an accredited institution of higher learning may be admitted to the School of Accountancy if they satisfy minimum scholastic requirements. They will be required to make up any specific preprofessional curriculum course deficiencies as soon as course scheduling permits, and to complete all professional curriculum requirements for which they have not had the equivalency. Such candidates must complete a minimum of 30 semester hours of work beyond their baccalaureate.

Degree Requirements

Preprofessional Curriculum

Course requirements in the MPA preprofessional curriculum total 96 hours. (For full undergraduate course descriptions see the Wichita State University Catalog.) Numbers in parentheses indicate total credit hours.

General Education requirements, 56 hours: Eng. 101, 102, 210 and 685 (12); Speech 111 or 112 (3); Phil. 144 (3); Math. 111 and 114 (4); CS 200 and 205 (4); Econ. 201 and 202 (6); electives other than accounting and business, sufficient to satisfy General Education distribution requirements and including 8 hours of General Studies courses (22).

College of Business Administration core requirements, 25 hours: Acc. 210 and 220 (6); Econ. 231 and 340 (7); Fin. 340 (3); DS 350 (3); Mgmt. 360 (3).

Other College of Business Administration courses, 15 hours: Acc. 310, 320, 410 and 430 (12); B. Law 435 (3)

Professional Curriculum

Candidates in the professional curriculum must complete 55 credit hours in the following courses while maintaining an overall grade point average of 3.0 or better based on all courses taken while in professional status.

Courses Hrs.

Acct. 710 and 715, Financial Accounting IV and V .................. 6

Acct. 720, Managerial Accounting III ............................... 3

Acct. 730, Taxation II ............................................. 3

Acct. 760 and 860, Accounting Information Systems I and II ....... 6

Acct. 740, Auditing I ............................................. 3

Acct. 850, Professional Seminar ................................... 1

B. Law 435, Law of Associations .................................... 3

Mgmt. 830, Business and Society ..................................... 3

Mgmt. 862, Organizational Behavior ................................... 3

Mgmt. 885, Administrative Policy (to be taken during the last semester of the program) ........................................... 3

Fin. 841, Financial Management ........................................ 3

DS 871, Multivariate Statistical Methods, or Econ. 631, Intermediate Business Statistics ........................................... 3

Accounting electives (courses numbered 800 or above) ............ 9

Other College of Business Administration courses, excluding accounting (courses numbered 500 or above) .................. 6

* Must be repeated for four full semesters. 1 credit hour will be awarded in total.
Policies
Probation and Dismissal
The School of Accountancy MPA program follows the guidelines on probation and dismissal outlined in the Graduate School section of the Bulletin. Candidates may also be dismissed from the School of Accountancy and the MPA program if, in the judgment of the School of Accountancy faculty, they are unable to make satisfactory progress toward the degree.

Baccalaureate Degree Holders and Transfer Students
Previous academic work will be evaluated individually for holders of baccalaureate degrees and for transfer students. A program of study will be developed that will ensure coverage of the content of the professional and professional curriculums. Any candidates who are allowed MPA credit for more than six semester hours of the required 700-level course work for work done in undergraduate status at WSU or another institution will be required to complete Acct. 895, Research Seminar in Accounting, as an additional MPA professional curriculum requirement, thus increasing their requirements by 3 credit hours. Completion of Acct. 895 will not be counted as one of the required accounting electives for such candidates.

Master of Business Administration
The College of Business Administration offers the Master of Business Administration (MBA) through faculty in the accounting, economics, finance, real estate, and decision sciences, management, and marketing and small business departments, as well as in other colleges of the University. The MBA program is designed to prepare men and women for responsible positions of professional leadership in business, government, health-related organizations, and other institutions. The program concentrates on general management, with particular attention given to developing within the student an understanding of the organizational as an integrated system. Areas of emphasis may be developed in a variety of subjects as explained later.

The total hours required of students and the level at which they begin participation in the MBA program depends on their academic preparation. Generally, the program extends for two years for full-time students with a nonspecialized background, and one year for full-time students with a business administration background. The total number of hours required for completion of an MBA ranges from 30 to 58, excluding any courses required to correct deficiencies in prerequisites that students have at the time of admission.

Most of the courses that can be taken for graduate credit and almost all of those on the 800 level are offered in the evening.

Admission Requirements
Admission to the MBA program is granted to students who show high promise of success in postgraduate business study, and who hold baccalaureate degrees from regionally accredited institutions.

Previous academic training in business is not required for admission to the MBA program. Students may have backgrounds in such diverse fields as engineering, liberal arts, education, and health-related areas. The specific content of a student's previous education is less important than the evidence that the student has sound scholarship, strong personal motivation and the ability to develop skills necessary to assume positions of leadership.

Although various criteria are considered in granting admission, special attention is given to the applicants' grade point averages on academic work completed, and to their scores on the Graduate Management Admission Test (GMAT). To be admitted, applicants must have 1,050 points based on the formula: 200 times a student's overall grade point average, plus the GMAT score; or 1,100 points based on 200 times the grade point average on the last 60 hours of graduate and undergraduate work completed, plus the GMAT score. The minimum acceptable GMAT score is 450.

Degree Requirements
Advanced Standing: Students with strong backgrounds in mathematics and business administration may be granted advanced standing in the MBA program. Students not receiving advanced standing may be granted equivalent credit for all of the background fundamental courses for which a minimum grade of C was received in an undergraduate program. Most students entitled to such credit hold baccalaureate degrees in business administration from accredited institutions. Students may be granted equivalent credit for any or all of the background fundamental courses, depending on the depth of their undergraduate or previous graduate preparation. The MBA program may consist of as few as 30 hours for students who have no deficiencies in prerequisites, and who receive equivalent credit for all of the background fundamentals.

Students Not Receiving Advanced Standing: Students with baccalaureate degrees in non-business fields will usually not have backgrounds warranting the granting of advanced standing through equivalency credit. There are, of course, some exceptions. Some students, for example, may have had enough work in economics or statistics to be granted credit for these courses. Determination regarding equivalency credit will be made by the Program Director following admission to the program.

Students must include no more than 15 hours of course work in any one field of business administration or economics in their graduate program.

MBA Course Requirements

* Prerequisites
  - Math. 109, 111, or 122 College Algebra 3
  - Math. 144 3

** Background Fundamental Courses
  - Acctg. 800, Financial Accounting 3
  - Mkt. 800, Marketing Systems 3
  - Mgmt. 830, Business and Society 3
  - Fin. 840, Financial Systems 3
  - DS 850, Production and Operations Management 3
  - Mgmt. 860, Management of Organizations 3
  - DS 874, Management Information Systems for Business 4
  - Econ. 830, Statistical Methods for Business 3
  - Econ. 800, Analysis of Economic Theory 3
  - Mgmt. 862, Organizational Behavior 3
  - Econ. 885, Analysis of Business Conditions 3
  - Econ. 804, Managerial Economics 3
  - Directed Electives 6
  - Free Electives 9

These courses are to be taken only if a specific void exists.

** With approval of the program director, equivalent credit may be granted for courses of equal content taken in an undergraduate program. See Advanced Standing section above.

*Of the 15 elective hours, 6 hours must be taken in two of the following three functional areas: marketing, finance and production/quantitative. The remaining 9 hours are free electives of which three may be taken at the 800 level.

Policies
1. A candidate's individual Plan of Study must be approved by the Director or Associate Director. For candidates granted advanced standing, this Plan must be filed within a month of completion of 12 hours of graduate work. For
non-advanced standing students, the plan must be filed within a month of when the student needs only 18 hours for completion of the MBA degree.

2. All candidates must complete 27 hours of 800 level courses including: Acctg. 801; Econ. 803; Econ. 804; Mgmt. 862; Mgmt. 865; 6 hours of directed electives; and 6 hours of free electives. The additional 3 hours of free electives may be at either the 800 level or the 600 level.

3. General topic interest areas offered in the College of Business Administration are accounting, business environment (including international management, business law, labor relations, environmental protection, urban economics and economic development), finance, managerial economics, marketing, operations analysis and production management, organizational behavior and personnel administration.

**Master of Science in Administration**

The Master of Science in Administration is oriented toward developing students' specializations in an area of Business Administration, as well as refining their research capabilities. Students must plan their programs, with the approval of their advisors, to include specialization in one of six areas: finance and bank management, marketing, organizational behavior and personnel administration, operations analysis and production management, statistics and research methods, and business environment. Two options are available under the MS program in administration: option A requires the presentation of a thesis, option B does not.

**Admission Requirements**

Admission is determined on the basis of a number of factors, including the applicant's grade point average at the undergraduate level and score on the Graduate Management Admission Test. General minimum requirements for admission are:

1. A baccalaureate degree in business administration, or the equivalent, from an accredited institution.
2. A total of 1,050 points based on the formula: 200 times the student's overall grade point average plus the GMAT score; or 1,100 points based on 200 times the grade point average on the last 60 hours of graduate and undergraduate work completed, plus the GMAT score.

The minimum acceptable GMAT is 450. Foreign students are also required to have a minimum score of 550 on the Test of English as a Foreign Language.

**Degree Requirements**

All course work taken for the degree must be approved by a student's advisor. Courses identified under background fundamentals of the MBA program, completed earlier, may not be included in the hours required for the degree.

Students obtaining the MS in administration (under either option) are required to complete the following courses:

- **DS 871, Multivariate Statistical Analysis**
- **Mgmt. 860, Analysis of Behavioral Systems**
- **Mgmt. 866, Seminar in Research Methodology**

Additional requirements under each option area are as follows:

**Option A (Thesis):** Option A requires the completion of a minimum of 30 credit hours of work, including at least 17 hours in 800-level courses. In addition to the three required courses specified earlier, candidates must present a thesis, in their area of specialization, for a total of 4 semester credit hours. They must also take at least 9 hours in this area of specialization.

A preliminary oral examination over the thesis proposal is required. Candidates must also present an oral defense of their thesis conducted according to the requirements of the Wichita State University Graduate School.

**Option B (Nonthesis):** Option B requires the completion of a minimum of 33 credit hours of work, including at least 17 hours in 800-level courses. In addition, at least 15 hours must be in the area of specialization.

Two alternatives are available in the area of specialization:

1. The entire 15 hours may be taken in regular graduate-level courses, with a written comprehensive examination given over the area of specialization. The examination is administered and evaluated by a faculty committee from the area of specialization and is usually taken at the end of a student's last semester of work.
2. Of the 15 hours of specialization, up to 4 credit hours may be taken as a Special Project in the student's area of specialization. The special project may involve original case research, internships or field research. This project must be approved by the MS committee and ordinarily is directed by a group of graduate faculty members.

For both of the alternatives under Option B, a final oral examination, conducted according to requirements of the MS Committee, is held over a student's entire degree program.

**Master of Arts in Economics**

The Department of Economics offers courses of study leading to the Master of Arts (MA). Students admitted to the MA program in economics are required to select a thesis or nonthesis option. The thesis option is recommended for students planning graduate work beyond the master's level. The nonthesis option permits students to specialize in a chosen area of study.

Admission Requirements

Admission to the MA program in economics requires an undergraduate major in economics, or the equivalent, from an accredited university or the completion of this requirement during the graduate course of study. If students have not taken calculus in an undergraduate program, they must take a course in calculus, or equivalent mathematics, during the first semester of graduate work.

Admission to the program is based on large part—but not exclusively—on the student's grade point average and score on the Graduate Record Examination. For admission to full standing students must have a grade point average of at least 2.75 for the last half of their undergraduate work and for courses in economics.

The Graduate Record Examination (aptitude test only) is required, but under exceptional circumstances and on written petition to the graduate coordinator, students may take the examination prior to the second semester of their residence to retain their standing in the program.

**Degree Requirements**

Three courses are required of all students:

- **Econ. 631, Intermediate Business Statistics**
- **Econ. 801, Macroeconomic Analysis**
- **Econ. 802, Microeconomic Analysis**

The candidate's program of courses must be approved by the graduate coordinator and the chairperson of the Department of Economics. Courses identified as background fundamentals of the MBA program and other courses designated by the Department of Economics may not be included in the hours required for this degree. The thesis, if the student elects to write it, must complete 30 semester hours (including thesis hours) of economics and related courses, 18 of which must
be in courses numbered 800 or above. They must also present and successfully defend their thesis before their thesis committee. Candidates for the MA who write a thesis are required to pass an oral examination held primarily on the defense of the thesis. Nonthesis. If students elect not to write a thesis, they must complete 34 semester hours, 18 of which must be in courses numbered 800 or above. Candidates who do not write a thesis must pass a written comprehensive examination of their course of study.

Accounting

School of Accountancy

Courses for Graduate/Undergraduate Credit

Dual course numbers are used for courses that will be taken simultaneously by baccalaureate candidates and candidates in the School of Accountancy. Additional work will be required of the latter.

510/710. Financial Accounting IV. (3). A continuation of Acctg. 410. Includes an examination of accounting concepts and techniques related to partnerships, consolidated statements, foreign exchange, and fund accounting. Prerequisites: Acctg. 410. Acctg. 710 requires admission to the MPA program or School of Accountancy consent. Prerequisite: Acctg. 410. B 11 510 0 0502; B 11 710 0 0502

560/760. Accounting Information Systems. (3). A study of the concept, design, and control of accounting systems, with emphasis on the use of computers for processing financial data. Prerequisites: Acctg. 300. B 11 560 0 0502; B 11 760 0 0502

615/715. Financial Accounting V. (3). An examination of accounting concepts and techniques related to consolidated statements subsequent to date of acquisition. A systematic treatment of the basic concepts and methodology of accounting theory. Prerequisites: Acctg. 510/710. B 11 615 0 0502; B 11 715 0 0502

620/720. Managerial Accounting III. (3). Advanced study of the use of accounting information in financial policy decisions, profit planning and control, quantitative analysis of financial data, and capital budgeting. The application of selected quantitative methods of accounting is included. Prerequisites: Acctg. 320 and 300. Econ. 231. Acctg. 720 requires admission to the MPA program or School of Accountancy consent. B 11 620 0 0502; B 11 720 0 0502

630/730. Taxation II. (3). A study of the federal tax law as it applies to corporations, partnerships, estates, trusts, and gifts. Prerequisites: Acctg. 430. Acctg. 730 requires admission to the MPA program or School of Accountancy consent. B 11 630 0 0502; B 11 730 0 0502

640/740. Auditing II. (3). A study of the auditor's attest function, with emphasis on auditing standards and procedures, independence, legal responsibilities, selection of ethical conduct, and evaluation of accounting systems and internal control. Prerequisites: Acctg. 510/710 and 560/760. B 11 640 0 0502; B 11 740 0 0502

650/790. Seminar in Selected Topics. (1-3). Repeatable for credit with School of Accountancy consent. B 11 650 0 0502; B 11 790 0 0502

Courses for Graduate Students Only

800. Financial Accounting. (3). A study of the basic structure of accounting, income determination, asset valuation, liability recognition and accounting for ownership equity. The interpretation and analysis of financial statements are included. May not be taken for credit in the School of Accountancy. Prerequisite: no previous credit in accounting or departmental consent. B 11 800 0 0502

801. Managerial Accounting. (3). An examination of the use of accounting data to analyze management problems. Concepts of cost analysis, return on investment analysis, and operations and capital budgeting are covered. May not be taken for credit in the School of Accountancy. Prerequisite: Acctg. 800 or equivalent. B 11 801 0 0502

803. Federal Taxes and Management Decisions. (3). An examination of how substantially different tax liabilities sometimes attach to nearly identical economic events. Emphasizes practical results, giving little or no consideration to political considerations inherent in those results. Designed for the manager or businessman who has little accounting background. This course is not open to accounting majors or those who have had previous income tax courses. May not be taken for credit in the School of Accountancy. Prerequisite: Acctg. 800 or equivalent. B 11 803 0 0502

810. Accounting Evolution and Social Environment. (3). Study and discussion of accounting concepts and methodology of accounting theory including a course in the nature of business costs, establishing a concept of accounting, income determination and asset/liability valuation. Prerequisite: undergraduate emphasis in accounting or admission to the MPA program, or instructor's consent. B 11 810 0 0502

812. Theoretical Foundations of Accounting. (3). A systematic treatment of the basic concepts and methodology of accounting theory and their application to problems of income determination and asset/liability valuation. Prerequisite: undergraduate emphasis in accounting or admission to the MPA program. B 11 812 9 0502

820. Managerial Accounting IV. (3). An advanced study of theoretical concepts underlying cost accounting, with emphasis on the nature of business costs, establishing a conceptual framework for cost and managerial accounting, and selected problem areas in cost determination and analysis. Prerequisite: undergraduate emphasis in accounting or admission to the MPA program. B 11 820 9 0502

825. Analytical Methods in Accounting. (3). An examination of applied mathematical models in accounting. Emphasis is placed on the mathematical representation of cost and management accounting models. Prerequisites: Math. 340 and either an undergraduate emphasis in accounting, admission to the MPA program, or instructor’s consent. B 11 825 0 0502

830. Taxation III. (3). A research course emphasizing the utilization of various income tax research materials in the preparation of written reports on tax problems. A review and discussion of current problems in taxation and tax practice are included. Prerequisite: Acctg. 630/730. B 11 830 0 0502


860. Accounting Information Systems II. (3). A study of the concepts of information systems, their design and operation, and the relationship of these concepts to the economic information requirements, information flows, decision criteria and control mechanisms in the business organization. Prerequisite: Accctg. 560/760. B 11 860 0 0502

880. Contemporary Issues in Accounting. (3). An examination of current issues in accounting, with emphasis on the releases of the American Institute of Certified Public Accountants and other professional organizations and governmental agencies. Prerequisite: Acctg. 510/710. B 11 880 0 0502

890. Professional Seminar. (1). An orientation to the accounting profession. Continuous enrollment, and satisfaction of completion of designated segments required of all students in the School of Accountancy. B 11 890 9 0502

891. Directed Study in Accounting. (1-3). Prerequisite: School of Accountancy consent. B 11 891 3 0502

895. Research Seminar in Accounting. (3). An advanced seminar offering an opportunity for oral discussion and written reports on matters of current interest in diverse areas of accounting. A major course objective is to develop the student's ability for independent research and the presentation and defense of findings. Prerequisite: undergraduate emphasis in accounting including a course in statistics, admission to the MPA program, or instructor's consent. B 11 895 9 0502

899. Thesis Research. (1-3). B 11 899 4 0502

Aviation Management

Department of Marketing and Small Business

Course for Graduate/Undergraduate Credit

690. Seminar in Selected Topics. (1-5). Repeatable with departmental consent. Prerequisite: junior standing. B 17 690 9 0501

750. Workshop in Aviation Management. (1-4). Prerequisite: junior standing. B 17 750 9 0501

Business Education

Department of Business Education

Course for Graduate/Undergraduate Credit

750. Workshops in Business Education. (1-4). The selection of one major area of
business education for study in terms of methods, materials, research and curricular problems. The instructor is assisted by guest lecturers. Repeatable for credit. Prerequisite: teacher certification or departmental consent, and junior standing. B 14 750 9 0514

Business Law
Department of Finance, Real Estate, and Decision Sciences

Courses for Graduate/Undergraduate Credit
690. Seminar in Selected Topics. (1-5). Repeatable with departmental consent. Prerequisite: junior standing. B 15 690 9 0506
750. Workshop in Business Law. (1-4). Prerequisite: junior standing. B 15 750 2 0501

Courses for Graduate Students Only
331. Legal Environment of Business. (3). An introduction to the legal environment within which the business system operates. The course considers the functions of law in relation to the business system, the institutions and processes involved in the interaction between business, society, and government, and the major frameworks of private and public law. Emphasis is placed on the realm of public law from a managerial perspective, including the ethical and social responsibility aspects of business behavior. B 15 831 0 0501

890. Seminar in Special Topics. (1-3). Repeatable with departmental consent. B 15 890 9 0501
891. Directed Studies. (1-5). Prerequisite: departmental consent. B 15 891 3 0501

Decision Sciences
Department of Finance, Real Estate, and Decision Sciences

Courses for Graduate/Undergraduate Credit
575. Decision Making Techniques. (3). An introduction to the quantitative techniques commonly used for managerial decision making and their application to problems in such areas as production, distribution, and finance. Topics include linear, integer, goal, and dynamic programming, transportation models, network models, queuing theory, and simulation. Prerequisite: DS 350. B 15 575 0 0507

651. Design of Operations Systems. (3). A course structured to give an in-depth view of the long-term design aspects of operations systems. Topics include process analysis and design, production control information systems, facilities planning, materials handling system, job design, personnel planning and scheduling, and current issues. Prerequisite: DS 450. B 15 651 0 0506

652. Operations Planning Systems. (3). A course structured to give an in-depth analysis of the short-term or operational aspects of goods- or service-producing systems. Topics include forecasting methods, inventory control models, material requirements plans, aggregate planning and scheduling, and current issues. Prerequisite: DS 350. B 15 652 0 0506

690. Seminar in Selected Topics. (1-5). Repeatable with departmental consent. Prerequisite: junior standing. B 15 690 9 0501
750. Workshop in Decision Sciences. (1-4). Prerequisite: junior standing. B 15 750 2 0507

Courses for Graduate Students Only
850. Production and Operations Management. (3). Concepts for planning and controlling the production of either goods or services. Topics include: linear programming, scheduling, quality control, inventory models, and waiting line models. Not open to students with credit in DS 350. Prerequisites: calculus and statistics. B 15 851 0 0506

851. Intermediate Production Management. (3). Theory of production systems, decision making under uncertainty and advanced technological forecasting methods for business and industry. Application of forecasting methods and some operations research models to real-world productive systems. Prerequisite: DS 350 or 850. B 15 851 0 0506

871. Multivariate Statistical Methods. (3). A study of selected multivariate statistical methods used in support of modern decision making. Topics include: multivariate hypothesis testing, multiple regression, correlation, analysis of variance and covariance, and discriminant analysis. Prerequisite: Econ. 870 or Econ. 231. B 15 871 0 0523

872. Advanced Statistical Analysis. (3). Topics such as sample design, chi square, variance analysis, and correlation and regression analysis are examined from conceptual and decision-making points of view. Prerequisite: DS 871. B 15 872 0 0503

874. Management Information Systems for Business. (3). A study of business information systems for management decision making and control with emphasis on coverage of system components, controls, and application. Includes an introduction to a programming language. B 15 874 0 0708

875. Management Science. (3). A course providing quantitative bases from which the student may develop analytical abilities for use as a decision maker. Areas of study include mathematical programming, game theory, forecasting, queueing theory, and simulation. Not open to students with credit in DS 695. Prerequisite: calculus. B 15 875 0 0507

876. Advanced Management Science. (3). An in-depth examination of selected management science models. To be included are advanced inventory and quality control topics, goal programming and other current decision-making techniques. Prerequisite: DS 875 or departmental consent. B 15 876 0 0507

890. Seminar in Special Topics. (1-3). Repeatable with departmental consent. B 15 890 9 0501
891. Directed Studies. (1-5). Prerequisite: departmental consent. B 15 891 3 0501

903. Special Project in Decision Sciences. (1-4). A special project including original case research, supervised internships or field research. Prerequisite: approval of the MS Program Committee. Graduate only. B 15 893 3 0506

989-989. Thesis. (2-2). B 15 894 4 0501; B 15 896 4 0501

Economics
Department of Economics

Courses for Graduate/Undergraduate Credit
605. History of Economic Thought. (3). A critical analysis of economic thought, the factors that influence this thought and its impact upon the social and economic development of the modern world. Prerequisites: Econ. 2020 and junior standing. B 15 605 2 2204

614. Industrial Organization. (3). A study of both competitive and noncompetitive market structure, conduct, and performance, with special emphasis on related public policy such as antitrust. Prerequisites: Econ. 202 and junior standing. B 15 614 2 2204

515. Economics of Transportation. (3). A study of economic characteristics of transportation models, problems, and public policy. Prerequisites: Econ. 202G and junior standing. B 15 615 0 0510

616. Economics of Air Transportation. (3). A study of economic characteristics of air transportation. Prerequisites: Econ. 202G and junior standing. B 15 616 0 0510

517. Economics of Regulation. (3). A study of the theory and practice of regulation. Includes both the traditional regulation of public utilities and communications and the newer forms of regulation, such as safety and environmental regulations. Prerequisites: Econ. 202G and junior standing. B 15 617 0 0510


625. Economic History of Europe. (3). Cross-listed as Hist. 614. A study of the development of economic institutions; the rise of capitalism and its influence on overseas expansion, technology, precious metals, politics and war, changes in economic ideologies, and cultural effects of economic change. Prerequisites: Econ. 201G and junior standing. B 13 625 0 2204

626. Origins of the Industrial State. (3). Cross-listed as Hist. 516. U.S. economic development and policy, from the Civil War to the present. Emphasis is on change in both the reputations and influence of businessmen in American society. Prerequisites: Econ. 201G and junior standing. B 13 626 0 2204

627. Economic History of the United States. (3). Cross-listed as Hist. 515. An analysis of the basic factors in economic growth. Agriculture, trade and commerce, industrial development and the changing role of the government in economic activity are
640. Monetary Problems and Policy. (3) An analysis of monetary problems and policy. Debt management policies and the structure of interest rates are included. Prerequisites: Econ. 202Q and junior standing. B 13 660 0 0516

653. Public Finance. (3) An analysis of fiscal institutions and decisions in the public sector of the American economy. Budget planning and execution, taxation, cost-benefit analysis, and policy are explored. Prerequisites: Econ. 620 and junior standing. B 13 665 0 2214

660. Labor Economics. (3) An introduction to labor economics, surveying both theoretical and empirical research in this field. Topics include labor markets, wage determination, human capital theory, and other problems. Prerequisites: Econ. 2020 and junior standing. B 13 660 0 0516

661. Collective Bargaining and Wage Determination. (3) An examination of the mechanics and consequences of collective bargaining, emphasizing the techniques and procedures used, and the major issues and problems inherent in the bargaining process. The manner in which wages are determined under various institutional relationships is explored. Prerequisites: Econ. 2020 and junior standing. B 13 661 0 0516

662. Work and Pay. (3) The orientation of this course will investigate the economic aspects of work and the workplace. Its scope will deal with the demographics of the labor force, methods of rewarding those who participate in this labor force, and will emphasize such topics as the quality of life, work alienation, and the nature of work under capitalism. Prerequisites: Econ. 2020 and junior standing. B 13 662 0 0516

663. Economic Insecurity. (3) Cross-listed as Econ. 663. Personal economic insecurity, such as unemployment, old age, health care, disability and erratic economic fluctuations, and the role of government action to aid in meeting such insecurities are included. Prerequisites: Econ. 2020 or instructor's consent, and junior standing. B 13 663 0 2004

665. Health Economics. (3) Cross-listed as Hlth Sci. 665. An analysis of health care systems in the United States, including the demand for and supply of health care services; the quantity and quality of health services; the need for insurance; and the role of government in the health sector. Prerequisites: Econ. 2020 and junior standing. B 13 665 0 0516

671. Economic Growth and Development. (3) Survey of leading growth theories, with an emphasis on the processes of development and capital formation in developed and underdeveloped economies. Determinants of real income, resource allocation, investment criteria, balance of payment problems, national policies and related topics are analyzed within this framework. Prerequisite: Econ. 2020 and junior standing. B 13 671 0 2204

672. Introduction to International Economics and Business. (3) Cross-listed as Mgmt. 561. A survey of the economic foundations of international trade and investment. After a study of international trade theory and policy (the international economy), it explores the operations of the multinational firm within that environment. Prerequisites: Econ. 202Q and junior standing. B 13 672 0 0513

674. International Finance. (3) Cross-listed as Fin. 648. The study of foreign exchange, balance of payments, the international monetary system and the world's money and capital markets, and their relationships with financial operations of multinational firms. Also, relevant aspects of international financial management are explored through a series of case studies. Prerequisites: Fin. 340, Econ. 2020 and junior standing. B 13 674 0 0513

680. Economics of Energy and Natural Resources. (3) A study of the business and economic problems associated with natural resource problems. Includes energy demand and supply, the price of energy, energy industry characteristics and government regulations, conservation, environmental problems and public policies. Statistical data are extensively used to evaluate the past and present energy and natural resources situations, and the trends for the future. Simple economic concepts and theories are employed to interpret the facts and to assess the impacts of various public policies on the use of energy and natural resources. Prerequisite: Econ. 2020 or instructor's consent. B 13 680 0 2204

685. Natural Resources and Regional Planning. (3) A study of the approaches to the optimal allocation of natural resources. Criteria for policy decisions and the evaluation of the social and economic benefits and costs of the use of resources through time are examined. Prerequisites: Econ. 202Q and junior standing. B 13 685 0 2204

687. Introduction to Urban Affairs. (3) Cross-listed as Pol. Sci. 687 and Soc. 687. An introduction to the study of the urban metropolis as a social, political and economic system. Prerequisites: Econ. 202Q, a course in sociology, or political science, and junior standing, or instructor's consent. B 13 687 0 2214

688. Urban Economics. (3) A survey of the economic structure and problems of urban areas, both the microeconomic and macroeconomic levels. The application of regional economic analysis in the study of urban areas as economic regions is stressed. Prerequisites: Econ. 201Q and 202Q, or Econ. 800, and junior standing. B 13 688 0 2214

692. Group Studies in Economics. (1-3) Repeatability for credit with departmental permission. Prerequisite: junior standing. B 13 692 9 2204

750. Workshop in Economics. (1-4) Prerequisite: junior standing. B 13 750 2 2204

Courses for Graduate Students Only

800. Analysis of Economic Theory. (3) An intensive analysis of micro- and macroeconomic principles. Not for graduate credit in the MA program in economics. Prerequisite: departmental consent. B 13 800 0 2204

801. Macroeconomic Analysis. (3) An intensive analysis of contemporary literature and problems of national income analysis. Prerequisites: Econ. 301 and one course in calculus. B 13 801 0 2204

802. Microeconomic Analysis. (3) An intensive analysis of contemporary literature and problems in the areas of production, pricing and distribution. Prerequisites: Econ. 302 or 804, and one course in calculus. B 13 802 0 2204

803. Analysis of Business Conditions. (3) A study of economic forecasting and its relationship to macroeconomic analysis. Not for graduate credit in the MA program in economics. Prerequisites: Econ. 800 or equivalent and one semester of introductory statistics. B 13 803 0 2204

804. Managerial Economics. (3) A survey of theoretical and analytical tools of economics that are useful in decision making by managers. Not for graduate credit in the MA program in economics. Prerequisites: Econ. 202Q or 800 and one course in calculus. B 13 804 0 0517

810. Business and Public Policy. (3) The study of the effects of government regulation, monetary and fiscal policy on business, as well as the social responsibility of business. Not for graduate credit in the MA program in economics. Prerequisite: departmental consent. B 13 810 0 2204

814. Seminar in Industrial Organization and Public Policy. (3) A study of business and economic organization and structure, market operation and performance and public policy with special reference to the U. S. economy. Repeatable for credit with departmental consent. Prerequisite: one of Econ. 614, 302 or 804. B 13 814 9 2204

815. Seminar in the Regulated Industries. (3) An intensive analysis of the economic characteristics of the regulated industries (i.e., transportation and public utilities), with emphasis on price and rate-of-return regulation. Prerequisite: one of Econ. 302, 615, 616, 617 or 804. B 13 815 0 0510

830. Statistical Methods for Business. (3) An examination of statistical concepts and methods applicable to business decision making. Included are probability theory, point and interval estimation, hypothesis testing, regression analysis, analysis of variance, and selected nonparametric techniques. Not open to students with credit in Econ. 231 or equivalent. Not for graduate credit in the MA program in economics. Prerequisite: calculus. B 13 830 0 0503

831. Introduction to Econometrics. (3) Analysis of time series, multiple regression, multiple and partial correlation, analysis of variance and regression with econometric techniques. Prerequisites: Econ. 631 and one course in calculus. B 13 831 9 0503

836. Methodology of Economics. (3) A study of what constitutes the basis of knowledge in economics. The manner in which the principles of algebra and calculus are applied to produce knowledge in economics is explored. Prerequisites: Econ. 302 and 631. B 13 836 9 2204

840. Seminar in Monetary Theory. (3) An examination of classical and contem-
porary monetary theories. An analysis and an evaluation of current monetary problems are included. Repeatable for credit with departmental consent. Prerequisite: Econ. 2020 and 340. B 13 840 9 0504

853. Seminar in Public Finance. (3). An analysis of theoretical and applied aspects of public finance in the American and foreign economies. Selected topics of current and potential interest are explored. Repeatable for credit with departmental consent. Prerequisite: Econ. 653. B 13 853 9 2204

861. Seminar in Contemporary Labor Issues. (3). An intensive analysis of contemporary labor problems in the field of labor. The specific nature of the problems are determined by the interest of those enrolled in the course. Repeatable for credit with departmental consent. Prerequisite: Econ. 360. B 13 861 9 0516

870. Seminar in International Trade and Finance. (3). Cross-listed as Fin. 820. A seminar in theoretical concepts and contemporary selected issues of international economics and finance. Selected issues include such areas as foreign exchange markets, the Eurodollar market, Arab oil policies, the international monetary system, transference of inflation between countries, developments in the common markets, etc. Prerequisite: Econ. 674 or Fin. 648, or instructor's consent. B 13 870 9 0513

871. Seminar in Economic Growth and Development. (3). A study of theories of economic growth and development. Selected topics relating to economic growth and development, such as national planning, allocation of resources, selection and evaluation of investment projects, and other current issues, are included. Prerequisite: Econ. 671, 301 or 302. B 13 871 9 2204

885. Seminar in Environmental Quality Control. (3). Examination of actual problems, projects and/or current approaches to environmental quality control. A critical look at current happenings and trends is taken. Prerequisite: Econ. 605. B 13 885 9 2204

888. Seminar in Urban Economics. (3). An analysis of the determinants of city structure, the location of economic activity and land use. Current urban problems such as crime, pollution, zoning, housing and optimal city size are discussed with specific reference to current empirical research. Prerequisite: Econ. 302 or 688. B 13 888 9 0504

891. Directed Study. (1-3). Individual study of various aspects and problems of economics. Repeatable for credit with departmental consent. Prerequisite: graduate standing and departmental consent. B 13 891 3 2204

892. Group Studies In Economics. (1-3). Repeatable for credit. Prerequisite: departmental consent. B 13 892 9 2204


896. Thesis. (1-2). B 13 896 4 2204

The following abbreviations are used in the course descriptions: 3H = 3 hours of lecture and 1 hour of laboratory. For example, 3H, 4L means 3 hours of lecture and 4 hours of lab.

Finance

Department of Finance, Real Estate, and Decision Sciences

Courses for Graduate/Undergraduate Credit

640. Financial Management. (3). An exploration of the problems and operations for which the financial officer is responsible, emphasizing controversial aspects of financial analysis. Prerequisite: Fin. 340, 6 hours of accounting or departmental consent, and junior standing. B 15 640 9 0504

641. Investments. (3). An analysis of investment risks, financial information and industry characteristics. Corporate, government, municipal and financial institution securities and other investment types are examined. Prerequisite: Fin. 340 and junior standing. B 15 641 9 0505

643. Capital Markets and Financial Institutions. (3). An introduction to the capital markets system. The management and operations of financial institutions are studied. Each major type of financial institution is viewed in the context of its competitive environment with respect to both asset and liability management. Prerequisites: Fin. 340 and junior standing. B 15 643 9 0504

644. Commercial Bank Management. (3). A study of bank asset and liability management. The internal organization of commercial banks are reviewed. Current problems and recent innovations in commercial banking are also explored. Prerequisites: Fin. 643 and junior standing. B 15 644 9 0504

645. Security Analysis and Valuation. (3). Comprehensive study of methods of analyzing major types of securities. Market behavior analysis is also included. The formulation of investment objectives, design of portfolios for classes of institutional and individual investors, and portfolio theory are explored. Prerequisites: Fin. 641 and junior standing. B 15 645 9 0504

646. International Finance. (3). Cross-listed as Econ. 674. The study of foreign exchange, balance of payments, the international monetary system and the world's money and capital markets, and their relations with the financial operations of multinational firms. Also, relevant aspects of international financial management are explored through a series of case studies. Prerequisites: Fin. 340, Econ. 2020 and junior standing. B 15 646 9 0513

650. Seminar in Selected Topics. (1-5). Repeatable with departmental consent. Prerequisite: junior standing. B 15 650 9 0504

750. Workshop in Finance. (1-4). Prerequisite: junior standing. B 15 750 9 0504

Courses for Graduate Students Only

820. Seminar in International Trade and Finance. (3). Cross-listed as Econ. 870. A seminar in theoretical concepts and contemporary selected issues of international economics and finance. Selected issues would include such areas as foreign exchange markets, the Eurodollar market, Arab oil in the international monetary system, transference of inflation between countries, developments in the common markets, etc. Prerequisite: Fin. 340, 6 hours of accounting or instructor's consent. B 15 820 9 0513

840. Financial Systems. (3). An intensive analytical introduction to finance from the management viewpoint, including the theory of financial management, the financial institutional structure and an analysis of a variety of practical problems of business finance. Prerequisites: Accyg 500 or equivalent. B 15 840 9 0504

841. Financial Administration. (3). An integrated treatment of basic business finance, financial management, financial statement analysis and financial goals. Prerequisite: Fin. 840 or equivalent. B 15 841 9 0504

842. Structure and Policies of Financial Institutions. (3). The development, management and impact of policies of financial institutions, including planning, measuring, and achieving financial goals. Prerequisites: Fin. 840 or equivalent. B 15 842 9 0504


850. Security Analysis. (3). An analysis and valuation of investment securities issued by corporations and governmental agencies. Prerequisite: Fin. 641 or departmental consent. B 15 850 9 0505

846. Capital Budgeting. (3). A study of the organization and operation of the capital budgeting system. Problems in partial decentralization and in comparability of estimates of funds flow are explored. Contemporary methods of treating uncertainties and constraints and the application of programming techniques are included. The determination of appropriate discount rates is also explored. Prerequisite: Fin. 640 or equivalent. B 15 846 9 0504

890. Seminar in Special Topics. (1-3). Repeatable with departmental consent. B 15 890 9 0504

891. Directed Studies. (1-5). Prerequisite: departmental consent. B 15 891 3 0504

893. Special Project in Finance. (1-4). A special project culminating in original research, supervised internships or field research. Prerequisite: approval of the MS Committee. Open only to MS in administration candidates. B 15 893 9 0504


Management

Department of Management

Courses for Graduate/Undergraduate Credit

561. Introduction to International Economics and Business. (3). Cross-listed as Econ. 672. A survey of the economic founda-
663. Organizational Interactions. (3). A study of interpersonal intraorganizational and interorganizational interactions. Prerequisites: Mgmt. 360, enrollment, and junior standing. B 16 663 0 0506

665. Organizational Development. (3). Planned organizational change. Emphasis is upon team building in organizations. Individual, group and structural developments are included. Prerequisites: Mgmt. 360 or concurrent enrollment, and junior standing. B 16 665 0 0506

667. Organizational Structure and Design. (3). An introduction to the theories pertinent to the study of organizational subsystem structure and design. The interrelationships of organizational goals, decision making, environment, technology, climate, innovation and organizational structures are analyzed utilizing a systems approach. Additional topics include formal versus informal structure, differentiation, integration and matrix organizations. Prerequisite junior standing and Mgmt. 360. B 16 667 0 0506

660. Decision Making. (3). Cross-listed as UA 730. A study of the theories of decision making, with attention directed to the factors of creativity, the quest for subjective certainty, rationality, cognitive inhibitors, problem identification, evaluation of alternatives, applications of quantitative methods to decision processes and decision implementation. Prerequisites: Mgmt. 360 or concurrent enrollment, and junior standing. B 16 660 0 0506

681. Administrative Policy. (3). An integration of all aspects of administration in the analysis of and making decisions for policy development. Prerequisites: DS 350, Fin. 340, MKT 300, Mgmt. 360, or departmental consent, and junior standing. B 16 681 0 0506

683. Comparative and International Management. (3). The study of contemporary management concepts and practices applicable to private and public sector organizations in an international setting, and their impact on operational and management functions of multi-national corporations. The student is introduced to the dynamic growth of business and government interaction on a global basis. The course includes an examination of: nationalism and industrial development, labor and industrial relations, host country activities to promote or restrict international business development, potential for strategic alliances, and marketing expertise. Prerequisites: Mgmt. 360, or concurrent enrollment and junior standing. B 16 683 0 0506

Health Administration Policy. (3). An integration of all aspects of health administration in the analysis of and making decisions for policy development. Prerequisites: a basic course in economics, accounting, finance and management or administration, and junior standing. B 16 684 0 0506

690. Seminar in Selected Topics. (1-5). Repeatable with departmental consent. Prerequisite: junior standing. B 16 690 0 0506

750. Workshop in Management. (1-4). Prerequisite: junior standing. B 16 750 0 0506

Courses for Graduate Students Only

630. Socio-Legal Environment of Business. (3). An examination of the economic, political, social and legal environment in which business operates. Consideration is given to the philosophical foundations of capitalism and how business has interacted with government, consumers and labor over time. Emphasis is placed on the role of business in dealing with societal problems. Current issues, such as the social responsibility of business, affirmative action, occupational safety and health, environmental protection and the challenge to the legitimacy of the firm are dealt with from the perspective of the decision-making manager. B 16 630 0 0506

636. International Business Administration. (3). An introduction to international business administration with particular attention given to the development of multinational business strategies in light of the diverse economic-political, social and cultural dimensions of the environments that exist in both developed and developing areas of the world. B 16 636 0 0506

680. Management of Organizations. (3). An introduction to management and organizational theory. Includes such topics as: classical and contemporary management theory, human relations, group dynamics, motivation, communication, organizational structure and design, and behavioral control. B 16 680 0 0506

682. Organizational Behavior. (3). A study of individual behavior in an organizational setting. Human variables in behavior are analyzed from the standpoint of job placement, performance and individual development. Topics covered include behavioral development, motivation and learning in human relations. Prerequisite: Mgmt. 860 or departmental consent. B 16 682 0 0506

685. Communication. (3). An analysis of communication models with emphasis on their applications to communication problems in organizations. Social-psychological processes underlying interpersonal relations and through the mass media are explored. Communication systems and techniques within business are analyzed critically. Prerequisite: Mgmt. 860 or departmental consent. B 16 685 0 0506

686. Organizational Conflict and Stress. (3). Studies in flexibility and rigidity. A review is made of research and thinking in the areas of innovation, conflict, resolution, stress and anxiety as relevant to organizational structures and behaviors. Prerequisite: Mgmt. 860 or departmental consent. B 16 686 0 0506

689. Research in Behavioral Science. (3). An analysis of some of the concepts and tools used with the distribution of a firm's products and services. These areas focus on such issues as the development of a firm's marketing channels and its relationships with wholesalers and retailers, as well as the management of the firm's sales force. Prerequisites: Mkt. 300 and junior standing. B 16 689 0 0506

690. Product and Price Policies. (3). An examination of the issues involved with product development, planning of product services, branding and packaging. Price policies focus on such aspects as the establishment of a firm's basic price strategy. Price alterations, credit policies and transport and handling terms. Prerequisites: Mkt. 300 and junior standing. B 16 690 0 0506

697. Promotion Management. (3). An analysis of all issues involved with the promotion of an organization and its products or services. These promotion issues deal with the development of advertising campaigns, management of the personal sales force, development of special promotions and management of public relations. Prerequisites: Mkt. 300 and junior standing. B 16 697 0 0506

698. Selling and Sales Force Management. (3). An analysis of current behavioral concepts of personal selling and the problems and policies involved in managing a sales
force. Prerequisites: Mkt. 300 and junior standing. B 17 608 0 0509

609. Marketing Programs. (3). A study of all the aspects of the marketing mix that are integrated to make an effective and coordinated marketing program. Prerequisites: Mkt. 300, 3 additional hours of marketing and junior standing. B 17 609 0 0509

610. Seminar in Selected Topics. (1-5). Repeatable with departmental consent. Prerequisite: junior standing. B 17 690 9 0501

750. Workshop in Marketing. (1-4). Prerequisite: junior standing. B 17 750 2 0509

Courses for Graduate Students Only

800. Marketing Systems. (3). An intensive analytical introduction to the combination of institutions that comprise the overall marketing system. The marketing function as a major subsystem within the individual business firm is also presented. B 17 800 0 0509

801. Contemporary Issues in Marketing Management. (3). A broadening of the concept of marketing by examining the impact of contemporary macroenvironmental conditions upon micromarketing decisions. Analysis includes identification and study of environmental issues, issue participants, new management decisions required, and limitations to marketing decision making. Prerequisite: Mkt. 800 or equivalent. B 17 801 0 0509

802. Marketing Strategy. (3). Integration of long-range marketing and corporate policies. Budgetary control and the evaluation of the effectiveness of marketing systems are included. The organization of the marketing department and its relation to the total organization are also probed. Prerequisite: Mkt. 801 or departmental consent. B 17 802 0 0509

803. Marketing Analysis. (3). The application of the scientific method to the solution of marketing problems. Prerequisite: Mkt. 800 or equivalent. B 17 803 0 0509

805. Consumer Decision Processes. (3). An examination of different aspects of the behavior of consumers and of the factors that influence such behavior. An analysis of current concepts and models is included. Prerequisite: Mkt. 800 or departmental consent. B 17 828 0 0509

809. Marketing Theory. (3). A utilization of marketing research findings to analyze current marketing theory. Conceptual and theoretical frameworks for marketing analysis are developed. Prerequisite: 6 hours of marketing, including Mkt. 801. B 17 809 0 0509

890. Seminar in Special Topics. (1-3). Repeatable with departmental consent. B 17 890 9 0501

891. Directed Studies. (1-5). Prerequisite: departmental consent. B 17 891 3 0501

893. Special Project in Marketing. (1-4). A special project including original case research, supervised internships or field research. Prerequisite: approval of the MS Committee. Open only to MS in administration candidates. B 17 893 3 0501

895-896. Thesis. (2-2). B 17 895 4 0501; B 17 896 4 0501

Real Estate

Department of Finance, Real Estate, and Decision Sciences

Courses for Graduate/Undergraduate Credit

611. Real Estate Finance. (3). Real estate financing instruments, institutions, traditional and creative financing techniques. Risk analysis, mortgage financing and underwriting, primary and secondary mortgage markets. Prerequisite: Fin. 340. RE majors should have completed RE 310. B 15 611 0 0511

614. Real Estate Appraisal. (3). Impact of socioeconomic conditions on real estate values. Cost, sales comparison, and capitalized income approaches to market value. Demonstration appraisal. Prerequisite: RE 310. B 15 614 0 0511

618. Real Estate Investment Analysis. (3). Equity investor decision criteria, institutional and ownership entity investment constraints, financial leverage opportunities, cash flow analysis, and creative income tax strategies. Prerequisite: Fin. 340. RE majors should have completed RE 310. B 15 618 0 0511

619. Residential Marketing, Management and Development. (3). Theory and practice including demand, urban and neighborhood market analyses, location theory and land-use succession, forecasting activities, brokerage administration, closing procedures, property management, and public policy devices relative to land-use decisions. Case studies or problems. Prerequisite: RE 310. B 15 619 0 0511

885. Seminar in Special Topics. (1-3). Repeatable with departmental consent. B 15 885 9 0511

890. Seminar in Special Topics. (1-3). Repeatable with departmental consent. B 15 890 9 0511

891. Directed Studies. (1-5). Prerequisite: departmental consent. B 15 891 3 0511

893. Special Project in Real Estate. (1-4). A special project including original case research, supervised internships or field research. Prerequisite: approval of MS Committee. Open only to MS in administration candidates. B 15 893 2 0511

895-896. Thesis. (2-2). B 15 895 4 0511; B 15 896 4 0511

Small Business/Entrepreneurship

Department of Marketing and Small Business

Courses for Graduate/Undergraduate Credit

560. Small Business Practicum. (3). This is an applied course extending the material learned in the classroom into real situations that involve problem solving. One fourth of the course is an intensive review of the functional areas of a business. The student then assumes the role of a problem solver for a particular firm. The instructor
serves as director, helping to define problems and recommending solutions for the firm’s difficulties or needs. Prerequisites: Mkt. 300, Fin. 340, DS 350, Mgmt. 360. B 17 868 0 0506

668. Venture Creation. (3). The focus of this course is on identifying and developing a written analysis of the procedures for starting a new business. Topics include the substance of an actual business plan, such as the definition of the business; analysis of the market, sales forecasting, pro forma development, business organization, financial analysis, capital requirements, etc. Prerequisites: Mkt. 300, Fin. 340, DS 350, Mgmt. 360, Acctg. 220, and senior or graduate standing. B 17 868 0 0506

690. Seminar in Selected Topics. (1-5). Repeatable with departmental consent. Prerequisite: junior standing. B 17 690 9 0506

750. Workshop in Entrepreneurship. (1-4). Prerequisite: junior standing. B 17 750 2 0501

Courses for Graduate Students Only

668. New Venture Feasibility Seminar. (3). The focus of this course is on directing students in the appropriate methods of selecting financial sources and in raising seed capital through the preparation of a comprehensive feasibility study. Topics to be covered are (1) sources of capital, such as venture capitalists, investment bankers, banks, and creative forms of financing, (2) marketing opportunity analysis, (3) pro forma development, (4) feasibility decision making, and (5) actual preparation of the loan package. Prerequisites: Sm. Bus. 668, Mkt. 800, Fin. 840, DS 850, Mgmt. 860 or equivalent, and approval of the instructor. B 17 868 9 0506

890. Seminar in Special Topics. (1-3). Repeatable with departmental consent. B 17 890 9 0506

891. Directed Studies. (1-5). Prerequisite: departmental consent. B 17 891 3 0506

893. Special Project in Entrepreneurship. (1-4). A special project including original research, supervised internships or field research. Prerequisite: approval of the MS Committee. Open only to MS in administration candidates. B 17 893 3 0506

895-896. Thesis. (2-2). B 17 895 4 0501; B 17 896 4 0506

College of Education

Offices: 102 Corbin Education Center
Leonard M. Chaffee Dean
Ronald G. Davison Associate dean, graduate affairs
Robert D. Alley Associate dean, undergraduate affairs
John Miller Associate dean, Continuing Education

Departments:
Communicative Disorders and Sciences—J. Keith Graham, chairperson; Kenneth W. Burk, graduate coordinator
Industrial Education—Edgar L. Webb, chairperson
Instructional Services—Joe Payne, chairperson and acting graduate coordinator
Personnel Services—Glen R. Day, chairperson; M. Claradine Johnson, EAS graduate coordinator; Timothy S. Hartshorne, CSP graduate coordinator
Physical Education, Health and Recreation—John Hanson, chairperson and acting graduate coordinator

The College of Education offers programs leading to the Master of Arts (MA) and the Master of Education (MEd) in several fields: the Master of Science Education (MSE) for secondary teachers in biological sciences, chemistry, geology and physics; the Specialist in Education (EdS) in the fields of educational administration, school psychology, and counseling, and the Doctor of Philosophy (PhD) in communicative disorders and sciences. A transfer program in educational administration leading to the EdD or PhD is available in cooperation with the University of Kansas.

Graduate offerings include programs which help students meet requirements for state certification as elementary principals, secondary principals, supervisory personnel, district school administrators, school counselors, early childhood teachers, special education teachers, reading specialists, school psychologists, speech and language pathologists and audiologists, and other specialists. Other programs are available to help teachers function better in their present roles.

Programs in the College of Education testify to the continuity of elementary, secondary and higher education. Offerings range from workshops, which are offered only once and devoted to the examination of a relevant topic, to course sequences that lead to advanced degrees.

Master of Education and Areas of Specialization

Master of Education (MEd) programs provide for specialization in educational administration, educational psychology, elementary education, early childhood education, early childhood/handicapped, physical education, secondary education, special education, counseling and school psychology. Within the areas of elementary education, secondary education and educational psychology, students may choose to emphasize women’s studies or other options as a program focus.

Admission Requirements

Admission to some MEd programs may require candidates to qualify for a teaching certificate. Many graduate programs in the college, however, provide appropriate preparation for students functioning in a variety of nonschool settings. These students may request exemption from state certification requirements. Certain degree specializations have specific admission requirements, as described under the appropriate department’s section of the Bulletin.

Degree Requirements

The MEd requires the completion of 30 semester hours and a thesis, or 36 semester hours without a thesis. In both programs, at least one half of the required hours must be taken in courses numbered 600 or above. IS (E.P.) 601 or IS (E.P.) 704 may be required in these hours of credit, depending on the program selected.

Thesis. A thesis option in the MA or MEd programs may be elected. Appropriate topics range from basic to applied to action research, and approaches vary from historical to descriptive to experimental. The program requires 30 semester hours, approval of the thesis proposal by the student’s graduate advisor and thesis committee, and an oral examination over the thesis topic. The Committee is appointed by the graduate dean from nominees submitted by the student’s advisor.

Examinations. During the final semester of enrollment, candidates are usually required to pass a written comprehensive examination in their major area and minor areas, if any. Within the first three weeks of the semester in which students take the exam, they should file an Application for Comprehensive Examination with the Office of the Dean, College of Education. Applications will not be accepted if submitted less than two weeks
prior to the examination date. Thesis students must pass an oral examination over their research area. In all cases, non-thesis MEd candidates must sit for a written comprehensive examination. The written comprehensive examination is waived for MEd students undertaking a thesis project. Specific examination requirements are described under the appropriate department's section of the Graduate School Bulletin. The written comprehensive examination is scheduled the first Saturday in November for the fall semester, the second Saturday in April for the spring semester, and the first or second Saturday in July for Summer Session.

### Communicative Disorders and Sciences (Logopedics)

**Graduate Faculty**
- Professors: Kenneth W. Burk (graduate coordinator), J. Keith Graham (chairperson), Roger N. Kasten, Frank Klettner (adjunct), Robert L. McCroskey, George R. Randal (adjunct)
- Associate Professors: David J. Draper (adjunct), Harold T. Edwards, Wesley L. Faires, William E. Miller
- Assistant Professors: Ronald D. Chambers, William J. Guiniv (adjunct), Thomas R. Kneil, Rosalind R. Scudder

**Degrees and Areas of Specialization**

The Department of Communicative Disorders and Sciences offers courses of study leading to the Master of Arts (MA) and the Doctor of Philosophy (PhD). Academic and clinical training is provided for students at Wichita State who wish to become professionally qualified to work with communicatively handicapped children and adults. Instructional areas include communication sciences, speech and language pathology, clinical and rehabilitative audiology, and some beginning course work in deaf education. A graduate program culminating in a master's degree is required for professional certification as a speech and language clinician or audiologist in the public schools and for work in clinics, rehabilitation centers or private practice. With an undergraduate preprofessional major, students can normally complete the master's program in one calendar year and be eligible for certification by the American Speech-Language-Hearing Association.

**Admission Requirements**

Admission to the master’s degree program is granted to students who have completed an undergraduate major of at least 30 semester hours in the area of speech, language and hearing disorders and closely allied courses. Admission also requires an overall grade point average of 2.75 and at least 3.00 for the last 60 hours of the undergraduate degree program and in the undergraduate major field of study and acceptable scores on the general aptitude section of the Graduate Record Examination.

Admission to the doctoral degree program requires a master's degree and completion of at least one year of master's graduate work with a grade point average of 3.50 or better. Credentials must demonstrate that students have a background of knowledge appropriate for entry into an integrated program of advanced study and research and provide evidence of personal qualities and traits indicative of further scholarly contributions to the selected area of study. To be admitted, students also must submit results of the general aptitude portion of the Graduate Record Examination.

**Master of Arts Requirements**

The Master of Arts (MA) in communicative disorders and sciences may be earned under a thesis option or a nonthesis option. The thesis option requires the presentation and oral defense of an acceptable thesis and the successful completion of a minimum of 30 semester hours. Four hours may be earned in thesis preparation courses, CDS 895 and 899.

The nonthesis option requires the successful completion of a minimum of 36 semester hours. Written and oral comprehensive examinations must also be taken. Students may not take the examinations during any semester in which they are on academic probation.

Candidates in either option must demonstrate competence in statistics, either by completing a beginning course with a grade of C or better or by passing an examination in this subject area. CDS 800, Introduction to Graduate Study and Research, and CDS 828, Advanced Speech and Hearing Science, or their equivalents, are required of every graduate student. All students must enroll in a clinical practicum course in their major area of emphasis during each semester of full-time study. No more than 4 semester hours of credit in clinical practica—CDS 875, 834, 835 and 850—may be counted toward the minimum semester hour requirements for an MA. For all students, a minimum of 12 semester hours in courses numbered 700 or above is required. Evidence of successful clinical competence also must be demonstrated before the completion of the graduate program.

Participation in many of the department’s clinical practicum courses requires that students obtain medical clearance prior to the start of the course. This requirement is indicated in the individual course descriptions. Procedures to be followed may be obtained from the department office. Also, graduate students who participate in active clinical practice during the year must purchase professional liability insurance in an amount of not less than $200,000—$600,000. This must be done on a yearly basis, when appropriate. Each entering graduate student, new to Wichita State, is required to take a speech and hearing proficiency test during the first semester of enrollment.

**Doctor of Philosophy Requirements**

Doctoral students, in conjunction with their advisory committee, formulate an integrated program of individual study. After taking into consideration previous academic and professional experiences, the students and their committee devise a program, which normally consists of at least 90 hours, 60 hours of which must be in didactic course work, including that taken during the master's degree program. Students may petition to take qualifying examinations after they have completed a major portion of their program and satisfied the requirements of specified tool subjects. Students also enroll in CDS 835, Advanced Practicum in Communicative Disorders and Sciences, or its equivalent, each semester of full-time study through the semester in which their dissertation prospectus is approved. The independent conduct and oral defense of a program of original research is the final requirement in the PhD program.

**Financial Aid**

Some financial aid to support graduate study is available and includes federal traineeships, assistantships and Wichita State fellowships.

### Communication Sciences

**Courses for Graduate/Undergraduate Credit**

**710. The Neurology of Speech and Language.** (4). A consideration of basic neuroanatomy and neurophysiology necessary for obtaining an understanding of the representation of speech and language in the central nervous system and of the conditions resulting from neurological impairment. Prerequisites: at least second year level. D 12 710 0 1220

**735. Anatomy, Physiology, and Pathology of the Auditory System.** (3). Detailed anatomy and function of the auditory system. Normal and pathological conditions are studied, with emphasis on clinical manifestations. Prerequisite: CDS 431. D 12 735 0 1230
Courses for Graduate Students Only

828. Advanced Speech and Hearing Science (3-4). Advanced study of speech and hearing processes, primarily in their normal aspects. Attention is devoted to current understanding of speech generation, the speech signal and the normal function of hearing. Attention is also given to techniques of investigation of these processes. Prerequisite: CDS 216 or equivalent or departmental consent. D 12 828 1 1220

830. Laboratory Instrumentation. (3). 2R; 3L. An introduction to clinical and research instrumentation used in the fields of communicative disorders and sciences. Experience with instrumentation is gained through practical projects and applications within the laboratory. Prerequisite: CDS 828. D 12 830 1 1220

867. Introduction to Psychoacoustics. (3). 3R; 1L. Basic principles underlying the perceptual hearing process, with emphasis on the interdependencies between sound stimuli and subjective auditory experience as related to communication and behavior. Prerequisite: CDS 540. D 12 867 0 1220


910. Communicative Sciences: Acoustic Phonetics. (3). 3R; 2L. A critical review of research dealing with the acoustic characteristics of speech. Also included are speech perception and techniques of speech synthesis and analysis. Prerequisite: CDS 828. D 12 910 1 1220

920. Neurophysiology of Communication. (2). Special lectures, seminars, clinical demonstrations and independent study. D 12 920 0 1220

Speech and Language Pathology

Courses for Graduate/Undergraduate Credit

520. Language Disabilities in Children. (3). Psycholinguistic and cognitive approaches to language disabilities in children. Practical application of language assessment procedures, interpretation of results and methods of language intervention are covered. Prerequisite: CDS 1110 or 705, 720 or equivalent. D 12 520 0 1220

709. Cleft Palate: Evaluation and Clinical Management. (3). Methods of evaluating and modifying articulation and resonance in cleft palate individuals. The role of speech clinicians in dealing with the handicapped client is explored. Consideration is given to other organic anomalies. Prerequisite: prior or concurrent enrollment in CDS 214. D 12 700 0 1220

705. Communicative Disorders. (3). Cross-listed as Speech 665. A survey of speech, language and hearing disorders, their identification and treatment, and considerations of the roles of health and educational specialists in the total habilitative process. Background in normal communicative processes and acquisition is provided for understanding communicative disorders. Areas introduced include language disorders in children, adult aphasia, articulation disorders, voice disorders, cleft palate, laryngectomy, stuttering, cerebral palsy and hearing impairment. Not open to students majoring in CDS. Credit in both CDS 1110 and 705 is not allowed. D 12 705 0 1220

720. Stuttering: Diagnosis and Clinical Management. (3). A review of current theories on the etiology and development of the disorder. Behaviorally based diagnostic procedures for children and adults are covered, as are methods for clinical management and real-life generalization, including procedures for parent and client interviewing and counseling. Opportunities for observation and demonstration therapy are provided. D 12 720 0 1220

726. Voice Disorders: Diagnosis and Clinical Management. (3). Review of current knowledge on the symptomatology and etiology of commonly encountered voice disorders in children and adults. Presentation of procedures for differential diagnosis and clinical management, based on a working knowledge of the anatomy and physiology of normal voice production. Prerequisite: at least senior standing and CDS 214. D 12 726 0 1220

727. Teaching English as a Second Language. (2-3). Cross-listed as Eng. 727 and Ling. 727. Current methods of teaching English to non-native speakers are discussed. Students learn to analyze interlanguage patterns and to design appropriate teaching units for class and language laboratory use. D 12 727 0 1220


Courses for Graduate Students Only

805. Adult Aphasia: Evaluation and Clinical Management. (3). Review of historical and contemporary literature; standard tests for evaluation of communicative disorders in aphasia and procedures for planning rehabilitation regimens for adults. Prerequisite: prior or concurrent enrollment in CDS 710. D 12 805 0 1220

810. Cerebral Palsy: Evaluation and Clinical Management. (3). The study of cerebral palsy and related neurological disorders. An evaluation and modification of speech and speech-related functions and a study of the cerebral palsy individual in society are included. Prerequisite: prior or concurrent enrollment in CDS 710. D 12 810 0 1220

815. Interviewing and Parent Counseling. (3). Presentation of current techniques of case history taking and interviewing as they apply to speech, language, hearing, learning, and behavior disorders in handicapped children and adults. Procedures employed in ongoing parent counseling are considered. D 12 815 0 1220

820. Examination Methods in Speech and Language Pathology. (3). 3R; 3L. Appraisal and differential diagnostic techniques in speech and language pathology. A weekly diagnostic practicum in communicative disorders is held, with experiences in report writing and follow-up procedures provided. Prerequisites: previous experience and terminal semester of graduate program. D 12 820 1 1220

824. Language Intervention Strategies. (3). Discussion of current language intervention theories, strategies and procedures leading to the development of individualized programs are also examined. Prerequisites: CDS 520 or departmental consent. D 12 824 0 1220

825. Seminar in Communicative Disorders. (2-3). Review of recent developments and a study of methods of integrating research findings and newer clinical methods and concepts into a rehabilitative procedure. D 12 825 9 1220


834. Beginning Graduate Practicum in Communicative Disorders. (1). 1R; 3L. Supervised application of diagnostic and/or clinical management techniques with children and adults presenting communicative disorders. Introduction to supervised practicum at the graduate level. Clinic and practicum procedures are stressed in the lecture portion of the course. Fifty hours of practicum are required. Prerequisites: CDS 417 or equivalent, CDS 447 or equivalent, departmental consent and medical clearance. D 12 834 2 1220

835. Graduate Practicum in Communicative Disorders. (1-3). 1R; 3-9L. Supervised application of diagnostic and/or clinical management techniques with children and adults presenting communicative disorders. Fifty hours practicum for each hour of credit is required. Prerequisites: CDS 834 or equivalent, departmental consent and medical clearance. D 12 835 2 1220

Audiology

Courses for Graduate/Undergraduate Credit

747. Rehabilitative Audiology. (3). Educational and psychological impact of hearing loss. Methods of interpersonal and family environment for the benefit of the hearing impaired are covered. Procedures for maximum usage of auditory canal are discussed. Speech reading and auditory training are studied as methodologies for dealing with speech and language deficits by utilizing auditory and visual cues. Prerequisite: CDS 431. D 12 747 0 1220

785. Supervised Practicum in Rehabilitative and Diagnostic Audiology. (1-3). 1R; 3-9L. Supervised experiences in the teaching of speech, language, speech reading and listening skills to deaf or hard of hearing children and adults. Supervised experience in the testing of hearing. Fifteen hours practicum per week are required for each hour of credit. Repeatabl e. Prerequisites:
prior or concurrent enrollment in CDS 540 and 747, departmental consent one semester prior to enrollment, and medical clearance. D 12 782 2 1220

Courses for Graduate Students Only

850. Supervised Practicum in Audimetrics. (1-3). 1R; 3-9L. Application of audiometric techniques in clinical situations. Experience is gained in complete patient management, counseling and rehabilitation follow-up, when appropriate. Three to four hours of practice per week are required for each hour of credit. Repeatable. Prerequisites: medical clearance, departmental consent and CDS 441 and 540. D 12 850 2 1220

865. Auditory Evaluation of Infants and Children. (3). 3R; 1L. Demonstration and practice in assessing auditory functioning of infants and children through 48 months of age. Report writing and parent counseling, as well as a study of appropriate instruments and procedures, are included. Prerequisites: CDS 540 and medical clearance. D 12 865 1 1220

860. Hearing Aids. (3). 3R; 2L. The history and function of hearing aids. The measurement and significance of the electroacoustic characteristics and principles and procedures for the selection and recommendation of specific hearing aids for individual hearing losses, hearing conservation and counseling related to various age categories are covered. Prerequisite: CDS 540. D 12 860 1 1220

865. Advanced Clinical Audiology. (3). 3R; 2L. Diagnostic and rehabilitative procedures in the audiology clinic. Techniques and procedures for the administration and interpretation of special auditory tests, including acoustic impedance and evoked auditory response measurements, are included. Prerequisite: CDS 540. D 12 865 1 1220

870. Seminar in Audiology. (2-3). Review of recent developments and research, with attention given to industrial audiology and environmental noise problems. Prerequisite: CDS 540. D 12 870 9 1220

875. Physiologic Measures of the Auditory and Vestibular Systems. (3). 3R; 1L. Techniques and procedures for administration and interpretation of physiologic tests of the auditory and vestibular systems, including electrocochleography (ECochG), auditory brainstem response (ABR), electronystagmography (ENG), and acoustic reflex. Test administration practice is included. Prerequisites: CDS 540, 735 and 710 (may be taken concurrently). D 12 875 1 1220

Deaf Education

Courses for Graduate/Undergraduate Credit

560. Signing Exact English I. (1). 2R. Introduction to the theory and use of Signing Exact English (SEE) as a means of communication with the hearing impaired. Independent outside practice is necessary to facilitate skill building. Prerequisite: departmental consent. D 12 560 1 1220

561. Signing Exact English II. (1). 2R. An advanced class in the theory and use of Signing Exact English (SEE) as a means of communication with the hearing impaired. Vocabulary and interpreting skills will be em- phasized. Prerequisite: CDS 560. D 12 561 1 1220

760. Introduction to Deaf Education. (3). Evolution of educational programs and methods used with the deaf. Emphasis is placed on related disciplines to educational methodology and special aspects of curriculum development. In schools and classes for the deaf are surveyed. Also included is a review of common communication systems and social and vocational considerations. Prerequisite: CDS 431. D 12 760 1 1220

General Courses for Graduate/Undergraduate Credit

715. Selected Topics in Communicative Disorders and Sciences. (1-3). Individual or group study in specialized areas of communicative sciences and disorders. Repeatable. D 12 715 1 1220

750. Workshop in Communicative Disorders and Sciences. (1-4). A course offered periodically on selected aspects of speech and hearing habilitation. D 12 750 1 1220

Courses for Graduate Students Only

800. Introduction to Graduate Study and Research. (3). A general introduction to graduate study. A survey is made of research procedures utilized in the fields of communicative sciences and communication pathology. Prerequisites: CDS 800 and instructor's consent prior to enrollment. D 12 800 1 1220

880. Presentation of Research. (1-3). A directed research project culminating in a manuscript appropriate for publication. Repeatable, but total credit hours may not exceed 3. Prerequisites: CDS 800 and instructor's consent prior to enrollment. D 12 880 1 1220

890. Independent Study in Speech and Language Pathology or Audiology. (1-3). Individual directed study in specialized areas in speech and language pathology or audiology. Repeatable. Prerequisite: instructor's consent prior to enrollment. D 12 890 1 1220

895. Thesis Research. (1-2). Repeatable, but total credit hours counted toward degree requirements must not exceed 2. D 12 895 1 1220

899. Thesis. (1-2). Repeatable, but total credit hours counted toward degree requirements shall not exceed 2. D 12 899 1 1220

915. Advanced Selected Topics in Communicative Disorders and Sciences. (1-4). Advanced individual or group study in specialized areas of communicative sciences and disorders. Intended for doctoral students or advanced master's-level students. Repeatable. D 12 915 1 1220

925. Clinic and Program Administration. (2). Approaches to clinical administration and rehabilitations program planning and development. Analysis and evaluation of program effectiveness, standards for accountability and fiscal procedures. D 12 925 1 1220

930. Seminar in Clinical Research. (3). Presentation of advanced methods in research design applicable to the investigation of communicative disorders in a clinical setting. Prerequisites: CDS 800 and competency in statistics. D 12 930 1 1220

935. Advanced Practicum in Communicative Disorders and Sciences. (1-4). 1R; 3-12L. Supervised internship in one of more of the following sections: Advanced Practicum in Clinical Supervision, Advanced Practicum in Academic Instruction, Advanced Practicum in Research and Advanced Practicum in Clinical and Program Administration. This course is intended for doctoral students or advanced master's-level students. Repeatable: more than one section may be taken concurrently. D 12 935 1 1220

990. Advanced Independent Study in Speech and Language Pathology, Audiology or Speech Sciences. (1-4). Directed individual, directed study in specialized content areas in speech and language pathology, audiology or speech sciences. Repeatable. Prerequisite: advanced standing and instructor's consent. D 12 990 1 1220


Industrial Education

Graduate Faculty
Associate Professor: Sterling B. Lewallen
Assistant Professors: Alan A. Aagaard, Edgar L. Webb (chairperson)

The Master of Education (MEd) provides for specialization in secondary education, with an emphasis in the field of industrial education. Graduate courses provide the opportunity for study in selected areas of professional interest and may be used to satisfy specific requirements for certification.

Courses for Graduate/Undergraduate Credit

500. Industrial Field Studies. (1-4). An in-depth analysis of industrial concepts from the perspective of an industrial employee. A comprehensive written paper conceptualizing research and development, finance, marketing, production, and industrial relations is a course requirement. The paper involves a comparison of the theoretical to the state of the art in a local industrial firm. A one-hour group conference is held on campus each week for purposes of directors student perception. This course may be repeated by selecting specific areas from the industrial principles listed above. D 11 500 1 1220

501. Preparation of Instructional Materials. (3). The selection, development and organization of instructional materials for effective teaching of industrial education. D 11 501 1 1220

519. Shop Planning and Organization. (3). Selection, purchase and organization of shop equipment and supplies. Developing
and maintaining necessary records and reports and the planning of shop facilities are also included. D 11 519 0 0839

750. Workshop in Industrial Education. (1-4). Offered from time to time on various aspects of industrial education. D 11 750 0 0839

751. Institute in Industrial Education. (1-8). A course designed to develop knowledge and competence related to curricular and methodological innovations in industrial education. The content is designed to satisfy those competencies that are identified as essential for teaching a defined subject area. Prerequisite: departmental consent. D 11 751 0 0839

790. Special Problems in Industrial Education. (1-4). Directed reading and research under the supervision of a graduate instructor. Prerequisite: departmental consent. D 11 790 4 0839

Courses for Graduate Students Only

820. Foundations for Curriculum Development in Industrial Education. (3). A study of the theory and practice of curriculum development as determined by social, cultural, and industrial changes, including current industrial education curriculum designs, problems and trends. D 11 820 0 0839

821. Curriculum Construction in Industrial Education. (3). Selection and construction of curriculum content for general and specialized areas of study in industrial education. Prerequisite: Ind. Ed. 820. * D 11 821 0 0839

840. Instructional Technology in Industrial Education. (3). A course designed to acquaint graduate students with the emerging technology of instruction. The course includes a study of programmed instruction, systems approach to instruction, instructional television, projected media, motion films, computer-assisted instruction, learning resource centers and other pertinent topics. Students are involved in planning and preparing instructional material using systematic procedures. Prerequisite: departmental consent. D 11 840 0 0839

860. Seminar in Industrial Education. (1-3). Innovations and critical analysis of contemporary problems in industrial arts and vocational education with directed reading and research. Repeatable. D 11 860 3 0839

Instructional Services

The Department of Instructional Services offers programs with emphasis in the areas of early childhood education, early childhood handicapped, educational psychology, elementary education, foundations of education, library science, secondary education, middle level education and special education. Certification requirements in learning disabilities, library science, mental retardation, gifted, personal and social adjustment and reading may be included as part of a degree.

Master of Education

The Department of Instructional Services offers programs leading to the Master of Education (MEd). A graduate student with approval from the department may choose the master's thesis program (30 hours) or the nonthesis program (36 hours). Final evaluation on a thesis program is by oral examination on the thesis; evaluation on a nonthesis program is by written comprehensive examination. Specific degree requirements are listed on program sheets available from the student's adviser or graduate coordinator.

Master of Education in Educational Psychology

Graduate students in educational psychology may choose from the following emphases:

1. General educational psychology
   a. The student's teaching area
   b. Research and evaluation
   c. Reading
   d. Special education
   e. Early childhood

2. Special education
   a. Mental retardation
   b. Learning disabilities
   c. Gifted education
   d. Personal and social adjustment
   e. Early childhood handicapped

Students who are working toward a degree or who hold a master's degree may pursue course work leading to certification in all special education areas listed in item 2 above.

Master of Education in Elementary Education

Degree requirements in elementary education have been developed to assist graduate students to personalize a program to meet their professional goals. Students may choose from the following emphases:

1. Improvement of instruction
2. Reading—remedial or classroom
3. Early childhood education
4. Study in a curriculum and instructional area
5. Special education
6. Library science—media
7. Middle school education

Students who are working toward a degree or who hold a master's degree may pursue course work leading to certification in reading, early childhood education or library science.

Master of Education in Secondary Education

The program in secondary education offers graduate students an opportunity to increase their knowledge in their major fields as well as competencies in secondary teaching. Courses are selected with the approval of an adviser in one or more of the following:

1. Curriculum
2. Instruction
3. Communications
4. Middle school
5. Technology/program evaluation
6. Subject Areas
   a. Bilingual education
   b. Educational psychology
   c. English
   d. Foundations of education
   e. Gerontological
   f. Health care administration
   g. Library science
   h. Mathematics
   i. Psychology
   j. Reading
   k. Sciences
   l. Social sciences
   m. Special education
   n. Women's studies
   o. Others approved by secondary education faculty

Students who are working toward a degree or who hold a master's degree may pursue course work leading to certification in reading and library science.

Master of Science Education

The Master of Science Education (MSE) is available to secondary teachers who qualify for teaching assignments in biology, chemistry, geology or physics. The MSE is a 36-hour program, with 12 hours of approved courses in professional education and a minimum of 18 hours completed in science teaching fields. A minimum of 6 hours of upper division undergraduate content courses may be allowed.

Students' final evaluation is by written comprehensive examination or a videotape demonstration of science teaching ability, with a two-hour oral examination exclusive of tape replay.

Instructional Services—General

Instructional services—General courses may apply to the program areas of early childhood, educational psychology, elementary education, special education and secondary education.

Courses for Graduate/Undergraduate Credit

620. Introduction to Middle Level Education. (3). An overview of the historical, philosophical, social and psychological factors affecting the movement toward better educational opportunities for learners from ages 10 to 14. D 21 620 0 0829

621. Curriculum/Instruction Alternatives for Middle Level Education. (3). An exploration into the development of alternative curricular organizations and instructional strategies for better meeting the needs of preadolescents in grades 5 through 9. D 21 621 0 0829
703. Research and Implementation of Learning Centers. (3). The course will consider a variety of alternative approaches to the teaching of students at all grade levels and subject matter areas via learning centers.

714. Activities for Human Relations I. (3). Topics covered are values, communications and creativity. Activities in the above areas are to be used by individuals and groups in instructional settings. They are used to explain, teach and enhance human relationships. D 21 714 0 0829

715. Activities for Human Relations II. (3). Topics covered are introductory activities, cooperation and self-awareness. Activities in the above areas can be used by individuals and groups in instructional settings. They are used to explain, teach and enhance human relationships. D 21 715 0 0829

718. Group Dynamics for Educators. (3). A laboratory course in human relations and group dynamics based upon involvement in various group activities. D 21 718 0 0829

745. Utilizing the Print Media in Classrooms. (3). Explores various ways the print media may be utilized to teach critical thinking skills, propaganda analysis, communicative skills through social studies and English classes, and improved reading through speed and comprehension practice. Special stress is placed upon the utilization of the daily newspaper as a supplement to other materials in teaching the various school subjects. Preparation of teaching materials for the classroom is also emphasized. D 21 745 0 0803

746. Introduction to Career Education. (3). An introduction to the philosophical consideration of career education. Participants examine the concepts of career education and explain means whereby the concepts can be infused into the existing curriculum. Experience-based activities related to career opportunities in the local business-industrial sector and postsecondary educational programs are offered in addition to the preparation of curricular materials. D 21 746 0 0829

747. Curriculum Development in Career Education. (3). Designed to assist school personnel in the development of a curriculum that considers the principles of a career education as a unifying theme. Following the scope and sequence development, participants are assisted in the writing of curricular units for their individual teaching assignments. Prerequisite: IS 745 or instructor's consent. D 21 747 0 0821

750. Workshops in Education. (1-4). D 21 750 0 0803

752, 753 or 754. Special Studies in Education. (1-3). See WS 752. Designed for elementary and secondary school teachers. Repeatable with advisor's consent. Prerequisite: teaching certification or departmental consent. D 21 752 0 0802; D 21 753 0 0802; D 21 754 0 0802

755. Aerospace-Aviation Education. (3). A course for those who have an interest in aviation education and particularly for those who plan to teach aviation in the secondary schools. The course includes: (1) theoretical knowledge of the airplane and flight and (2) general knowledge about aviation and aerospace. Part I included the basic ground school subjects of aerodynamics, structures and propulsion, meteorology, navigation, communication and federal aviation regulations. Part II presents information on career opportunities and the influence of the workforce on modern society. D 21 755 0 0899

785. Instructional Media. (3). Selection, use and production of educational media. Includes instructional design, media planning, skills, visual literacy, slide show production, design and production of transparencies, basic photography, audio recording and mixing, video tape recording, and the operation of instructional audio-visual equipment. Assignments involve the selection and production of materials for teaching. D 21 785 0 0899

789. Values Clarification Education. (3). An introduction to an approach to values education. Students develop competence with values clarification strategies, valuing techniques and the essential skills for valuing. Dealing with value-laden issues in the school curriculum is emphasized. D 21 789 0 0829

Courses for Graduate Students Only

838. Curriculum Alternatives. (3). An examination of curriculum models that are alternatives to the traditional curriculum and the socio-economic, political and psychological factors that motivate their development. Attention is given to a comparison of traditional and alternative models for the curriculum. Prerequisite: IS 838 0 0829


862. Presentation of Research. (1-2). A project submitted in thesis manuscript form. Repeatable for a maximum total of 2 hours of credit. Prerequisite: IS 860 0 0824

875-876. Master's Thesis. (2-4). Prerequisites: IS 860. D 21 875 0 0824; D 21 876 0 0824

890. Special Problems in Education. (1-4). Directed reading and research under supervision of a graduate instructor. Prerequisite: departmental consent. D 21 890 0 0803

Instructional Services—Educational Psychology

Graduate Faculty

Associate Professors: Orpha K. Duell, Randolph A. Elliott, Theodore S. Frenon, James L. Tamill

Assistant Professor: Douglas Lynch

Courses for Graduate/Undergraduate Credit

534. Principles of Learning and Evaluation for Teachers. (3). For description of course see IS 433. The course is intended for those students not taking IS 433 in the secondary student teaching block. It may be substituted for IS 433 but is not open to students with credit in IS 433. Prerequisite: IS 333. D 21 534 0 0822

700. Understanding Statistics in Research Literature. (1). Designed to increase understanding of statistical information in journal articles and other evaluative documents. Assumes no previous knowledge of statistics. D 21 700 0 0824

704. Introduction to Educational Statistics. (2-4). An introduction to statistics, including measures of central tendency, measures of variability, correlation, chi square, median, test, correlation, test and one-way and two-way analysis of variance. D 21 704 0 0824

728. Growth and Development I: Infancy and Early Childhood. (3). The growth of the infant and young child from birth to approximately age 5 in the areas of physical, cognitive, psychosocial and moral development. Not open to students who have taken Ed Psych. 730 (no longer offered). Prerequisite: IS 233 or 333 or instructor's consent. D 21 728 0 0822

729. Growth and Development II: Later Childhood. (3). The growth of the child from about age 5 through age 11-12 in the areas of physical, cognitive, psychosocial and moral
370. Growth and Development III: Adolescence. (3). Adolescent growth and development in the areas of physical, cognitive, psychosocial, and moral development. Prerequisite: IS 233 or 333 or instructor's consent. D 21 730 0 0822

371. Growth and Development IV: Adults and Aging. (3). Cross-listed as Gerent. 731. The process of adult growth and development as well as the process of aging and death in the areas of physical, cognitive, psychosocial and moral development. Prerequisite: IS 233 or 333 or instructor's consent. D 21 731 0 0822

372. Behavior Management. (3). Presentation and utilization of psychological principles and techniques for dealing with developmental behavior and learning patterns. Emphasis is on the preschool and elementary-school-age child. Prerequisite: IS 233 or departmental consent. D 21 732 0 0816

Courses for Graduate Students Only

800. Principles and Applications of Educational Psychology. (3). A critical examination of the major topic areas traditionally defined as educational psychology. After examination of basic paradigms and strategies of the discipline, students apply them to such areas as instructional practices and design, classroom management, and discipline, etc. Prerequisite: IS 233, or 333, or 433 or instructor's consent. D 21 800 0 0822

801. Introduction to Educational Research. (3). An introduction to research in education. Included in the course content are: (1) a survey of current educational research, (2) the nature of research methodology, (3) the preparation of research reports and the criticism of current research. D 21 801 0 0824

811. Educational Measurement and Evaluation. (3). Issues and techniques for measurement and evaluation in the cognitive, affective, and psychomotor domains. D 21 811 0 0825

815. Social Psychology of Education. (3). A critical study of the individual in social interaction in a variety of educational settings. Application of theory and research to school-related issues and problems. D 21 815 0 0822

820. Learning Theory for Teachers. (3). Applications of some major learning theories and teaching principles. Prerequisite: IS 801 or departmental consent. D 21 820 0 0822

823. Experimental Design in Educational Research. (3). A consideration of sampling theory, design for testing hypotheses about population parameters, testing correlation coefficients, means and difference between means, simple factorial designs, multiple regression, and design involving repeated measure of the same group and analysis of covariance. Prerequisite: IS 704. D 21 823 0 0824

The following abbreviations are used in the course descriptions: P for lecture and L for laboratory. For example, 3R 3L means 3 hours of lecture and 3 hours of lab. For complete course descriptions, see the Wichita State University Catalog.

Instructional Services—Elementary Education

Graduate Faculty

Professor: John W. Miller (director of reading and associate dean). John H. Wilson (associate professor), Paulie C. D. Bezzii, Michael A. James, Walter A. Lucas, Joe D. Payne (chairperson, Instructional Services)

Assistant Professors: Jeri A. Carroll, Alice A. Heston, Twyla G. Sherman

Courses for Graduate/Undergraduate Credit

518. Methods for the Kindergarten Teacher. (3). To acquaint students with all aspects of the kindergarten program and introduce the wide variety of materials available and the methods of using them. Prerequisites: IS 232 and 233. D 21 518 0 0825

705. Introduction to the Reading Process. (3). Designed to acquaint students and teachers with all aspects of current reading theory and parties related reading research to point out the possibilities of applying this theory and research to the actual teaching of children. D 21 705 0 0829

734. Affective Approaches to Teaching Reading. (3). The course develops specific methods of developing a literature program with children (preschool—elementary years). Specific emphasis is on extending literature and language through the reading environment, language arts, the arts, and creative expression. Prerequisite: junior, senior or graduate standing. D 21 734 0 0829

Affective Approaches to Teaching Reading. (3). The course develops specific methods of developing a literature program with children (elementary years). Specific emphasis is on extending language arts, the arts, and creative expression. Prerequisite: junior, senior or graduate standing. D 21 734 0 0829

Courses for Graduate Students Only

802. Classroom Reading Diagnosis. (3). Designed to acquaint students with the skills involved in and use of reading surveys, group diagnostic reading tests, criterion referenced assessment programs and appropriate teacher constructed tests. Will include the selection, administration, scoring and interpretation of group reading tests. Contains a diagnostic practicum. Prerequisite: IS 705. D 21 802 0 0830

804. Research in Reading. (3). Designed to allow students to explore areas of interest and concern in reading through the examination, review and sharing of pertinent reading research. Prerequisites: IS 705 and any other graduate reading course. D 21 804 0 0830

806. Introduction to Graduate Study in Elementary Education. (3). The field of elementary education is explored in its historical and educational context. Emphasis is on the investigation of reading and writing as a concept of the school curriculum. Prerequisites: IS 705 and 846, or 802, or equivalent. D 21 806 0 0820

821. Elementary Reading Practicum. (3). Designed to provide practicum experience in delivering developmental and corrective reading instruction in the classroom setting. Prerequisites: IS 705 and 846, or 802, or equivalent. D 21 821 0 0830

824. Remedial Reading Practicum. (3). Emphasis upon individual corrective treatment of diagnosed reading difficulties. A laboratory practicum in remedial reading instruction is required. Prerequisites: IS 705 and 846, or equivalent. D 21 824 0 0830

845. Elementary School Curriculum. (3). Study of the elementary school curriculum includes all of the experiences of children for which the school will assume responsibility. The potential of the elementary school as a model of the primary school is explored as a means of developing desired elementary learning characteristics. Prerequisite: ISEE 780. D 21 845 0 0829

846. Remedial Reading Diagnosis. (3). Emphasis upon individual diagnosis. The use of standardized instruments, teacher-made test items and teaching aids in reading difficulties; a diagnostic practicum is included. Prerequisite: IS 705 or equivalent. D 21 846 0 0830

849. Seminar in Reading. (3). Designed to examine the organization and structure of reading programs. Additional time is spent investigating pertinent research in the area of reading instruction. Prerequisite: IS 705 or equivalent. D 21 849 0 0830

852. Improvement of Instruction in Language Arts. (3). Recent developments in the teaching of language arts in elementary and middle school grades: problems, concerns, methods, materials and research related to listening and to oral, written, and visual communication, including "school" writing and creative writing. Students select particular concepts and related skills for special attention. Excellent for teachers who want to review and apply developments during the past five years. Prerequisite: ISEE 319. D 21 852 0 0829

854. Improvement of Instruction in Social Studies. (3). A study of recent changes in social studies curriculum and instruction designed to investigate strengths and limitations of various approaches. Competency in teaching for concept development, dealing with value-laden issues, and teaching for inquiry are stressed. An inquiry-centered learning environment emphasizes personalization of the social studies for children. Alternative teaching strategies and supplementary evaluative techniques are reviewed and practiced in this course. Prerequisite: 406 or equivalent. D 21 854 0 0829

856. Improvement of Instruction in Mathematics. (3). For teachers in service. Consideration of recent trends in subject matter content and teaching guides to improve understanding of meanings, vocabulary and mathematical concepts. Instructional methods and materials are included. Prerequisite: IS 444 or equivalent. D 21 856 0 0833

858. Improvement of Instruction in Science. (3). For teachers in service. Designed to develop skills to explore the implications of science that teachers should recognize, understand and consider from kindergarten through grade 12. Prerequisite: IS 521 or equivalent. D 21 858 0 0834

859. Seminar in Elementary Education. (3). Prerequisite: ISEE 780. D 21 859 0 0820

883. Trends in Theories of Instruction. (3). Instructional theory is considered through models of teaching. Study of each model covers theoretical assumptions, instructional procedures and effects. Practice of models in classroom settings is required. Prerequisite: ISEE 780. D 21 883 0 0829
Instructional Services—Foundations of Education

Graduate Faculty
Assitant Professors: Louis Goldman, Betsy E. West

Courses for Graduate/Undergraduate Credit

701. Foundations of Education. (3). A survey of the various foundations areas, including philosophical, historical, social, and comparative. This course is prerequisite to subsequent foundations courses. D 21 701 0 0821

777. Selected Topics in Foundations. (3). Explorations into current problems and selected areas of foundations. Prerequisite: IS 701 or instructor's consent. D 21 777 0 0821

Courses for Graduate Students Only

807. Philosophy of Education. (3). An introduction to the analysis of concepts such as mind, experience and knowledge in their relationship to educational problems and practices and to philosophical systems. Prerequisite: IS 701 or instructor's consent. D 21 807 0 0821

808. Sociology of Education. (3). An exploration of the relationship between education and society. Prerequisite: IS 701 or instructor's consent. D 21 808 0 0821

817. Comparative Education. (3). Educational systems of selected nations in terms of their unique structures and pervasive problems. Prerequisite: IS 701 or instructor's consent. D 21 817 0 0821

818. Anthropology of Education. (3). A cross-cultural examination of the educational process utilizing some of the basic concepts and perspectives of anthropology. Prerequisite: IS 701 or instructor's consent. D 21 818 0 0821

824. History of Education in the United States. (3). A study of education's relationship to other institutions (political, religious, etc.) in promoting and inhibiting social change in American history. Prerequisite: IS 701 or instructor's consent. D 21 824 0 0821

825. History of World Education. (3). A study of the role of education in world civilizations; major educational trends and developments in history; antecedents of current educational systems. Prerequisite: IS 701 or instructor's consent. D 21 825 0 0821

895. Advanced Studies in Foundations. (3). A course designed for the predoctoral student in any foundational specialty. Prerequisite: 9 graduate hours of foundations of education. D 21 895 0 0821

Instructional Services—Library Science

Students wishing to become school librarians in Kansas must have valid teaching certificates plus specific courses in library science, which may be taken either at the upper division or graduate level. Requirements for librarians in the various types of schools are described below.

Elementary Schools. Librarians must have a valid certificate for teaching in the elementary school and a minimum of 15 semester hours of library science and audiovisual courses.

Junior and Senior High Schools. Librarians must have a valid certificate for teaching in the secondary schools and a minimum of 15 semester hours of library science and audiovisual courses.

Courses for Graduate/Undergraduate Credit

707. School Library Media Center Cataloging and Classification. (3). The principles of cataloging and classification are studied, and students will learn to apply the Dewey Decimal classification system and Sears subject headings. Descriptive cataloging, types of entry, and filing rules are also covered. D 21 707 0 1601

708. School Library Media Center Book Collection. (3). Basic resources for the development and evaluation of a school library media center collection are considered. Emphasis is placed on selection policies and procedures, the school library media specialist's responsibilities in the selection process, and the development of a selection resource file. D 21 708 0 1601

709. School Library Media Center Administration. (3). The course provides a study of national and state standards as well as an investigation of the role of the school library media center in the educational structure. Specific topics include: goal setting and budgeting, administrative styles and personnel, evaluation of the center, the design and implementation of procedures and policies. D 21 709 0 1601

710. School Library Media Center Reference Materials. (3). Resources and techniques of providing reference service in a school setting are investigated. D 21 710 0 1601

711. School Library Media Center Program. (3). The leadership role of the school library media specialist in the school program is studied. Strategies needed to design and implement an integrated center program are considered as well as special library skills teaching activities. D 21 711 0 1601

712. Current Trends in Librarianship. (3). The course covers the history and development of libraries and their functions, aspects of professional leadership, the study of library literature, and current societal and educational changes that have an impact on the school library media center. D 21 712 0 1601

778. Advanced Cataloging. (3). A continuation of ISLS 707. The course will stress the organization of non-book materials, introduce the Library of Congress classification system, and survey current cataloging services. Prerequisite: ISLS 707. D 21 778 0 1601

779. Practicum/Internship. (3). A elementary school, B. middle school, C. high school, D. K-12. Students will pursue a professional experience in a school library media center under cooperative supervision of university personnel and an experienced practitioner in the field. Prerequisite: departmental consent. D 21 779 2 1601

790. Special Problems in the School Library Media Center. (1-3). Directed reading and research. Prerequisite: departmental consent. D 21 790 0 1601

Instructional Services—Secondary Education

Graduate Faculty
Professors: Kenneth N. Nickel, Robert D. Alley (associate dean, College of Education), Nancy C. Millen

Associate Professors: Bruce D. Ingmire, Michael C. McKeena, Kay Schifford (associate dean, Graduate School)

Assitant Professors: James E. Fisher, Louis Goldman, Candace B. Wells, Betsy E. West, Catherine Yectis

Courses for Graduate/Undergraduate Credit

616. Literature for Adolescents. (3). Extensive reading of literature in all genres consistent with studies of adolescents' interests, abilities and responses to literature. Prerequisite: junior standing. D 21 616 2 0829

771. Teaching Reading in the Content Areas. (3). Emphasis is placed on the teaching of reading in the content areas. Prerequisite: secondary teaching experience or departmental consent. D 21 771 0 0830

Courses for Graduate Students Only

803. Secondary Reading Practicum. (3). Designed to offer reading practicum experience to reading teachers in a secondary school setting. Prerequisites: IS 705 or 770, and 802 or equivalent. D 21 803 0 0830

804. Research in Reading. (3). Designed to allow students to explore areas of interest and concern in reading through the examination, review, and preparation of pertinent reading research. Prerequisites: IS 705 and any other graduate reading course. D 21 804 0 0830

831. Creating an Effective Classroom. (3). Designed to create an awareness of classroom management systems which include a variety of management tools and formats. D 21 831 0 0829

832. Secondary School Curriculum. (3). Develops the student's ability to describe, analyze and evaluate curriculum models and programs. Particular attention is paid to the social, psychological and philosophical foundations of curriculum as well as to current trends in curriculum design. D 21 832 0 0829

834. The Teaching of English. (3). Recent developments in the teaching of English: problems, concerns, methods, materials and research. Excellent for teachers who want an extensive review of developments during the past five years. D 21 834 0 0829

835. The Institutional Process. (3). Focuses on the process of instruction in order to develop skill in systematic instructional planning, including instructional theory, systems approach and other recent approaches to instruction. D 21 835 0 0829
836. The Teaching of Social Studies. (3). Recent developments in the teaching of social studies: problems, concerns, methods, materials, research. Excellent for teachers who want an extensive review of developments during the past five years. D 21 836 0 0829

837. The Teaching of Science. (3). Recent developments in the teaching of science: problems, concerns, methods, materials, research. Excellent for teachers who want an extensive review of developments during the past five years. D 21 837 0 0834

850. Seminar in Secondary Education. (3). D 21 850 5 0893

Instructional Services—Special Education

Graduate Faculty

Associate Professors: Lyman W. Boomer, Theodore S. Fremont, Myriss A. Herzey

Assistant Professors: Ernest Biller, Sandra R. Lloyd

Courses for Graduate/Undergraduate Credit

601. Introduction to Exceptional Children. (3). This course is designed as a survey of the characteristics of exceptional learners including the handicapped and the gifted. Service-learning projects are included. Emphasis is on current practices and current trends. Prerequisites: IS 233 or 333. D 21 601 0 0811

602. Introduction to the Gifted. (3). Emphasis on recognition and education of the gifted child. Prerequisite: IS 233 or 333. D 21 602 0 0811

604. Understanding of the Mentally Retarded. (3). Current research and historical approaches to the education of the mentally retarded and survey of the literature in this field. Prerequisite: IS 601. D 21 604 0 0810

702. Reading for Teachers of Exceptional Children. (3). Designed to survey the development of reading skills needed, diagnostic techniques and teaching approaches pertinent to students in special education settings, particularly LD and EMR. Prerequisite: Instructor’s consent. D 21 702 0 0833

740. Introduction to Early Childhood Special Education: Infancy and Preschool. (3). A basic introduction to the early intervention for handicapped children and their families. Prerequisites: IS 729, 840 (or 601), 761, or permission of instructor. D 21 740 0 0820

742. Learning and Behavior Disorders. (3). A study of the incidence, classification, etiology, intervention, personal, social and developmental characteristics of the learning disordered child. Current research, parental concerns and historical development of the educational approaches to learning and behavioral disorders are examined. Prerequisite: Instructor’s consent. D 21 742 0 0818

744. Curriculum/Methods for the Mentally Retarded. (3). Adaptations of the standards, curriculum and innovations that have proven to be beneficial for the teaching of the mentally retarded child. D 21 744 0 0810

748. The Emotionally Disturbed. (3). A study of the incidence, classification, etiology, personal, social and developmental characteristics of the emotionally disturbed. Current research, parental concerns and development of educational approaches are examined. D 21 748 0 0810

Courses for Graduate Students Only

805. Seminar for Reading and Language Teachers. (3). Designed to provide a forum for practicing reading and LD teachers in which to explore common interests, concerns, research and teaching techniques related to reading. Prerequisite: certification in reading or LD. D 21 805 9 0830

840. Psychology of Exceptional Children. (3). A study of the conceptual and theoretical formulations, empirical evidence and research concerning behavioral characteristics of exceptional children. D 21 840 0 0808

841. Program Development in Special Education. (3). Examination of factors in classroom organization and management that affect the establishment and operation of programs for exceptional children. Prerequisite: IS 601 or 840. D 21 841 0 0810

844. Occupational Aspects In Mental Retardation. (3). Designed to study in-depth occupational information, curriculum and methods employed by teachers of the mentally retarded in secondary schools. Prerequisite: IS 604 or departmental consent. D 21 844 0 0810

847E and F. Practicum and Internship in Education: Learning Disabilities. (3-6). Prerequisite: Instructor’s consent. D 21 847E and F 2 0808

847I and J. Practicum and Internship in Education: Mental Retardation. (3-6). Prerequisite: Instructor’s consent. D 21 847I and J 2 0808

847K and L. Practicum and Internship in Education: Emotional Disturbance. (3-6). Full-time participation in a class for emotionally disturbed children/adolescents supervised by a master teacher and university professor. Emphasis is on applied teaching methods for the mildly and severely disturbed, formal-informal psycho-educational assessments, curriculum strategies, behavior management and prescriptive remediation for academic deficits. Prerequisites: instructor’s consent, IS 749, and 868. D 21 847K and L 2 0808

847M. Practicum and Internship in Education: Gifted. (3). Supervised teaching experiences with gifted learners. Applied teaching experiences will be stressed. The course will provide opportunities to apply various theoretical, structural and technological methodologies related to the education of gifted learners. Prerequisites: IS 602 or 847E or F or 604 or IS 749 or IS 847M or L. D 21 847M 2 0808

847R and S. Practicum I, II, III: Supervised Clinical Experience and Seminar in Early Childhood Special Education. (2). The practice in early childhood special education is designed to provide opportunities to the student to develop clinical competencies with handicapped infants, young children, and their parents under the supervision of trained professionals in the field. Prior to every practicum experience, each student will be asked to complete a Competency Assessment basis for developing individualized professional goals for that particular practicum experience. Students will be expected to meet all such competencies to pre-specified criteria by the conclusion of the practicum. Prerequisites: for Practicum I: IS 729, 732, 740, 761, 762, 840 (or 601), 891, or permission of the instructor. It is recommended that Practicum I be taken simultaneously with the graduate course. Prerequisites for Practicum II: IS 729, 732, 740, 761, 762, 840 (or 601), 847T, 847S, 891, or permission of instructor. Prerequisites for Practicum III: IS 729, 732, 740, 761, 762, 840, (or 601) 847R, 847S, 891, or permission of instructor. D 21 847R, S and T 2 0808

864. Practicum Seminar: Learning Disabilities. (1). A seminar designed to examine trends and issues related to the learning disabled individual, adaptation of materials for specific needs and critical examination of incidents related to the practicum experience. D 21 864 2 0808

865. Practicum Seminar: Mental Retardation. (1). A seminar designed to examine trends and issues related to the emotionally disturbed individual, adaptation of materials for specific needs and critical examination of incidents related to the practicum experience. D 21 865 2 0808

866. Practicum Seminar: Emotional Disturbance. (1). A seminar designed to examine trends and issues related to the emotionally disturbed individual, adaptation of materials for specific needs and critical examination of incidents related to the practicum experience. D 21 866 2 0808

868. Methods for Teaching the Emotionally Disturbed. (3). Emphasis is on the theoretical and practical aspects of descriptive instructional techniques, and materials for the education of the emotionally disturbed in the self-contained and resource classroom. D 21 868 0 0808

883. Methods for Teaching the Gifted. (3). A study of the incidence, classification, etiology, intervention, personal, social and developmental characteristics of the learning disordered child. Current research, parental concerns and historical development of the educational approaches to learning and behavioral disorders are examined. Prerequisite: Instructor’s consent. D 21 883 0 0811

885. Curriculum for the Learning Disabled. (3). Curriculum development specific to the disabled learner. Requirements include mastery of specified competencies (reading instruction, behavior management, etc.) at both the elementary and secondary level. Course may be taken in conjunction with LD Practicum. Prerequisites: ISSS 742 and ISSS 886. D 21 885 0 0808

887. Assessment and Analysis of the Learner. (3). The application of standardized and informal evaluation techniques including critical evaluation of standardized tests and their appropriateness for special populations, alternative methods of assessment, and intervention techniques based on diagnostic profiles. D 21 887 1 0808

888. Methods for Teaching Learning and Behavior Disorders. (3). Mastery of specific competencies in the area of student inclusion use of data-based instruction, strategies for reading assessment, techniques to improve reading, math, and written language skills, and intervention for LD students including use of other teachers to facilitate mainstreaming of special students. D 21 888 1 0818

889. Advanced Seminar in Gifted Education. (3). D 21 889 1 0808
891. Identification, Screening, and Assessment of Infants and Preschool Children: Models, Materials, Procedures and Clinical Problems. (3). Emerging and traditional models, procedures, and materials in the early identification, screening, and assessment of infants and preschoolers will be studied. Concurrent enrollment in an early childhood special education practicum is strongly recommended. D 21 891 0 0820

892. Early Intervention for Young Children with Special Needs: Models, Curricula, Procedures, and Materials. (3). Current and future models, procedures, and materials will be studied. Concurrent enrollment in an early childhood special education practicum is strongly recommended. D 21 892 0 0820

893. Advanced Seminar in Early Intervention: Policy Issues, Research Problems, and Future Directions. (3). Topics presented will include ethical issues associated with biomedical and related scientific, advance, clinical research needs, pending and needed legislation, public policy issues, cross-disciplinary and cross-cultural studies, recent developments and future directions, and the relationship of early childhood special education to the larger field of special education. D 21 893 0 0820

894. Advanced Topics in Early Childhood Special Education. (1-4). Specia! topics seminars in early intervention will be periodically offered to facilitate opportunities for the in-depth study of critical issues or topical research in this rapidly developing field. Prerequisites: 652, 732, 740, 761, 762, 840 (or 601), 647, 691, 692, or permission of instructor. Repeatable for credit. D 21 894 0 0820

Personnel Services
The Department of Personnel Services offers programs in the areas of counseling and school psychology, educational administration and supervision.

Counseling and School Psychology
Graduate Faculty
Professor: Glen R. Dey (chairperson)
Associate Professor: Brooke B. Collison
Assistant Professors: Timothy S. Hartshorne (CSP graduate coordinator), Ruth A. Hitchcock, Nancy A. McKellar, Stephan J. Rohner

The counseling and school psychology unit offers several professional preparation programs which emphasize working with individuals, groups, and work of family systems. Program offerings are designed to provide students with knowledge and counseling skills sufficient to work with children and adults in educational and noneducational settings. Specialization programs are available for persons wishing to meet requirements for educational certification as counselors at the elementary or secondary level or as school psychologists.

Persons interested in school psychology certification programs are encouraged to contact the counseling and school psychology staff for program information and career advisement. The various areas afford students from a variety of undergraduate majors the opportunity to develop a specialized program of study leading to the Master of Education (MEd) or Specialist in Education (EdS).

Master of Education
The Department of Personnel Services offers programs leading to the Master of Education (MEd) in counseling and school psychology.

Admission Requirements
Admission to the MEd program is granted when applicants meet the grade point admission requirement of the Graduate School and have a 15-hour undergraduate background in the behavioral sciences (psychology, sociology, anthropology, etc.). Entry into MEd programs in counseling and school psychology do not require the teaching certificate as an admission requirement. However, students whose career goals include Kansas school counseling certification must be eligible for a teaching certificate prior to recommendation for counselor certification.

Specialist in Education
The Specialist in Education (EdS) in counseling and school psychology is an advanced degree program with an emphasis in either counseling or school psychology. The plan of study may incorporate related specialties. The program normally involves 30 hours of post-master's degree course work for students having master's level training in counseling or its equivalent. The program content is appropriate for helping professionals in a variety of educational and community settings.

The program is oriented toward assisting candidates to incorporate counseling theory into procedures to assist clients and client systems in various aspects of communication skill development and problem solving. Emphasis is placed on consultation processes and change strategies as they relate to a candidate's career interests in school counseling, postsecondary personnel, adult and family counseling, or school psychology.

The specialist program is designed to place increased emphasis on student involvement in laboratory and field-based experiences. Students are involved in initiating, planning and conducting experiences with groups and/or organizations.

Admission Requirements
Candidates who have completed a master's degree in counseling or a related helping service degree may apply for admission to the Graduate School in nondegree status to begin coursework. Specialist application blanks may be secured from the counseling and school psychology graduate coordinator.

Upon completion of the application procedures and formal acceptance, a three-person committee is appointed to assist in the design and supervision of the candidate's Plan of Study. Applicants considered for admission must have:

1. A master's degree with appropriate course work from an accredited institution with a major in counseling or related field of education or helping services. Persons from related fields (e.g., nursing, ministry, social work) may be admitted with appropriate prerequisites.
2. A graduate grade point average of 3.25 or higher on a 4.00 scale.
3. Submitted evidence of present knowledge and skills (previous graduate work, practicums, field experience and placements).
4. Provided evidence of appropriate human services, or related field experiences (vocational experiences in the field of helping services recommendations from instructors, employers, practicum supervisors, and on-campus interviews with at least one member of the counseling and school psychology faculty).

Courses for Graduate/Undergraduate Credit

652. Student Development. (3). Training for students involved as small-group leaders. Prerequisite: DARE student leader. D 18 652 9 0826

653. Studies in Student Development. (1-2). Designed as a supervised experience for students participating as peer advisers and leaders in developing activities for students entering or assigned to University College. Peer counseling and consulting skills are emphasized. Prerequisites: CSP 652 (former 752H) and DARE student leader. D 18 653 2 0826

655. Studies in Student Services. (1-6). Provides students with training in basic helping and skills for paraprofessional counseling. The course involves training and periodic seminars. May be repeated for a maximum of 6 hours credit. Prerequisite: departmental consent. D 18 655 9 0826

732. Counseling: Child Abuse and Neglect. (2). The etiology, symptoms and indicators, treatment, and prevention issues of physical abuse, sexual abuse, emotional abuse, neglect, and sexual abuse. D 18 732 2 0826
750. Workshop in Education. (1-4). D 18 750 2 0826

752. Special Studies in Education. (1-5). The course is designed for students with personal and guidance interests. Different preselected areas may be emphasized during a semester. Repeatable with advisor's consent. Prerequisite: instructor's consent. D 18 752 2 0826

756. Guidance Services for the Preschool Child. (3). A study of the social and emotional needs of the preschool child, including an exploration of theory, techniques and materials useful to persons providing guidance services for preschool children and their significant adults. D 18 756 0 0826

Courses for Graduate Students Only

801. Principles and Philosophy of Guidance. (3). The development of a guidance philosophy, including a study of the helping relationship and the services that are part of school agency and other institutional settings. D 18 801 0 0826

802. Introduction to Interaction Process. (1). S/U grade only. A laboratory approach to an examination of the counselor's role in the counseling process. The course is designed to assist the prospective counselor in personal understanding of self as a variable in the counseling process. Prerequisites: CSP majors and instructor's consent. To be taken concurrently with CSP 801. This course may not be taken concurrently with CSP 825. D 18 802 0 0826

803. Counseling Theory. (2). A study of selected theories of counseling. Prerequisite: CSP 801 or concurrent enrollment. D 18 803 0 0826

805. Educating the Poorly Adjusted Individual. (3). Perceptual approach to the problems of emotionally disturbed or deficient children and youth in both elementary and secondary schools. D 18 805 0 0816

806. Children of Poverty. (3). A perceptual approach to children and youth whose adjustment problems appear to be related to poverty in the affluent society. D 18 806 0 0813

810. Elementary School Counseling. (3). The role of the elementary counselor in providing individual and group counseling, group guidance and consultation in the school setting. Prerequisite: CSP 824. D 18 810 0 0826

820. Occupational Information. (2). The classification, collection, evaluation and use of informational materials in a guidance program. Also studied are current occupational trends and the development of hypotheses of occupational choice. Prerequisite: CSP 801 or concurrent enrollment. D 18 820 0 0826

823. Psychometric Procedures in Counseling. (3). Survey and study of standardized tests and their application in counseling, with an emphasis on their selection, use and interpretation. Study is made of the basic concepts of psychological measurement, as well as a review of psychological tests and inventories, including basic measurement theory, and the factors involved in the selection of tests. Prerequisites: CSP 801, IS 601 or concurrent enrollment. D 18 823 0 0825

824. Techniques of Counseling. (3). Through simulated counseling situations and examination of counseling case studies, techniques of counseling are examined and practiced. Prerequisite: CSP 803. D 18 824 0 0826

825. Group Techniques in Guidance. (2). S/U grade only. Laboratory approach to the study of group formation, process and communication as a tool for guidance services. Prerequisite: CSP 801 or concurrent enrollment. D 18 825 2 0826

830. Introduction to Marriage and Family Counseling. (3). A survey course on marriage and family counseling, including theories, techniques and research in the field. Prerequisite: CSP 803 or departmental consent. D 18 830 0 0826

833. Administration of Guidance Services. (3). Administration theory, with emphasis for the CSP major on relating theory to the problem of administration of guidance services. Prerequisite: 15 hours of CSP courses. D 18 833 0 0826

852. Special Studies. (1-4). A course covering specific topics identified by the department in consultation with institutions or groups of graduate students. Course procedures vary according to topic. Prerequisites: Instructor's or departmental consent. D 18 852 2 0826

855. Individual Intelligence Assessment. (2). Use of individual tests for appraisal of intelligence, adaptive behavior and learning styles. Research and clinical theory are considered in a lecture-discussion format, which includes some case activities. Concurrent enrollment in CSP 870 is recommended. Prerequisites: CSP 823, or concurrent enrollment, and instructor's consent. D 18 855 0 0825

856. Practicum in Individual Counseling. (3). Supervised practice in individual counseling. Course requirements include at least 60 hours applied experience. Repeatable for credit. Prerequisites: CSP 824, and instructor's consent. D 18 856 2 0826

857. Seminar in Guidance. (2). Prerequisite: 15 hours in CSP sequence. D 18 857 9 0826

858. Diagnostic Testing. (3). Use of individual tests, rating procedures and behavioral techniques for the appraisal of perceptual development, linguistic development, classroom behavior and academic skills. Assessment theory and research relevant to the assessment areas are considered in a lecture-discussion format which includes some case simulation activities. Concurrent enrollment in CSP 870 is recommended. Prerequisites: CSP 823 and instructor's consent. D 18 858 2 0825

862. Presentation of Research. (1-2). A project submitted in thesis manuscript form. Repeatable for a maximum of 2 hours of credit. Prerequisite: IS 860. D 18 862 4 0826

864. Personality Assessment. (2). An introduction to projective techniques in which both clinical theory and current research are considered in relation to data from other sources such as direct behavioral observations, rating scales, case histories and personality inventories. Concurrent enrollment in CSP 5790 is recommended. Prerequisites: CSP 823 and instructor's consent. D 18 864 0 0825

866. Practicum in Guidance Services. (2-3). Supervised practice in administration, test interpretation, group counseling and other activities of the guidance department. Prerequisites: CSP 833 and instructor's consent. D 18 866 2 0826

867. Practicum in Group Guidance and Counseling Methods. (3). Supervised practice in group guidance and group counseling. Repeatable for 3 hours of additional credit. The second practicum in this area or have a different focus from that of the first. Prerequisites: CSP 825, 856 and instructor's consent. D 18 867 2 0826

870. Assessment Practiceum. (2). Supervised experience in the administration, scoring and interpretation of individual assessment techniques in a school, agency or institutional setting. Report writing and case consultation also are considered in terms of the information needs of the referral agent. Repeatable to a maximum of 6 hours credit if student has successfully completed the first. Prerequisites: CSP 825, 856, or 864, or successful completion of one or more of these courses or their equivalent and instructor's consent. D 18 870 2 0826

875-876. Master's Thesis. (2-2). D 18 875 4 0826, D 18 876 4 0826

881. Seminar in School Psychology. (1). Current trends and issues within the area of school psychology will be examined. Alternating role models for the school psychologist will be considered from the standpoint of research and program development in related areas such as special education, general education and professional psychology. Repeatable to a maximum of 4 hours. Prerequisites: CSP 801 or concurrent enrollment. D 18 881 4 0826

890. Special Problems in Guidance. (1-4). Directed reading and research under the supervision of a graduate instructor. Prerequisite: departmental consent. D 18 890 3 0826

903. Counseling Theory II. (3). In-depth critical review of research and applicability of major theories to the evaluation and design of interpersonal intervention strategy. D 18 903 0 0826

914. Consultation Techniques. (3). Intensive study of the literature in counseling, social psychology and administration that provides a basis for consultation techniques in the interpersonal context of school and work settings. D 18 914 0 0826

915. Intervention Design. (2). Designed to give the student further experience and skill in utilizing theories of interpersonal relations in creating macro- and micro-learning experiences for individuals or groups experiencing dysfunctional situations. Individual and group intervention skills are stressed. D 18 915 0 0826

926. Seminar: Selected Topics. (2). Intensive study of current issues, techniques, research and application of the selected topic. Repeatable for different topics for a maximum of 8 hours. Prerequisite: 15 hours of related graduate coursework. D 18 926 9 0826

928. Seminar: Postsecondary Student Services. (2). Intensive study of issues, theories, approaches, research in topics related to postsecondary student services. Repeatable for different topics for a maximum of 8 hours. D 18 928 9 0826
930. Marriage and Family Counseling II. (3). An advanced course on marriage and family counseling, including theory, techniques, and research in the field. Prerequisite: CSP 803, CSP 830, 30 graduate hours, or permission of instructor. D 18 939 9 0826

946. Practicum in School Psychology. (3 or 6). Supervised practice in providing school psychological services to children in school, clinical or community agency settings. Requires at least 300 hours applied experience per 3 hours of credit. Repeatable for a maximum of 6 hours. Prerequisite: departmental consent. D 18 946 2 0826

947. Internship: Internal or External. (6-8). The Internal Internship is normally a full-time placement, appropriate to career objectives, in a position within an agency, institution or school. The External Internship is normally a series of planned placement internship experiences in a variety of settings designed to develop expertise in interpersonal consulting. 24 units. D 18 947 2 0826

948. Practicum in Marriage and Family Counseling. (3). Prerequisite: CSP 830, graduate-student status, or departmental consent. D 18 948 2 0826

977. Internship in School Psychology. (2). Supervised experience as a school psychologist in a school or agency setting. Requires at least 500 hours of applied experience. Repeatable for a maximum of 4 hours. Prerequisite: CSP 945 and departmental consent. D 18 977 2 0826

990. Special Problems in Counseling and School Psychology. (1-4). Directed problems in research for specialist degree students under supervision of a graduate instructor. Prerequisites: IS 801 and instructor's consent. D 18 990 4 0826

Educational Administration and Supervision

Graduate Faculty

Professors: Robert E. Anderson, Leonard M. Chaffee (Dean, College of Education), Kenneth G. Gleason

Associate Professors: Ronald G. Davison (Associate Dean), J. Rex Douglas, M. Claradine Johnson (EAS Graduate Coordinator)

Master of Education

The Department of Personnel Services offers a program leading to the Master of Education (MEd) in educational administration and supervision.

For admission to full standing in the Master of Education program, candidates must submit scores on the National Teacher Examination, Communication Skills test.

Specialist in Education

The Specialist in Education (EdS) is awarded upon completion of an advanced program of study in educational administration or educational supervision. The program provides formal learning experiences for students of administration or supervision beyond the master's degree. Purposes of the specialist in education program are:

1. To provide learning experiences in specific intellectual and performance areas that result in superior accomplishment in leadership roles in educational administration or educational supervision.

2. To provide learning experiences that support the advanced graduate student's pursuit of specialized skill development in desired administrative or supervisory areas.

3. To provide integrated field experiences that enable the advanced graduate student to apply newly acquired intellectual and performance skills in a clinical setting, with appropriate professional and practitioner direction.

Admission Requirements

Candidates may apply for admission to Graduate School in nondegree status to begin course work. Submission of the Plan of Study leading to admission to candidacy to the Specialist in Education should be filed as soon as the admission requirements listed below are completed. The Plan of Study should be completed no later than one month following the completion of 12 semester hours of graduate credit that are a part of the Specialist in Education. Course work completed after the 12 graduate hours noted above and before the submission of the Plan of Study for the Specialist in Education degree cannot count toward the minimum of 30 hours for the degree. For admission to the Specialist in Education program, candidates must meet the following requirements:

1. A minimum of two or three years of teaching experience or experience in the schools will be required of candidates seeking Kansas school administrator certification.

2. A master's degree from an accredited institution in an area of study related to the major field of the Specialist in Education degree.

3. A graduate grade point average of 3.10 or better on a 4.00 scale.

4. Submitted scores on the following: National Teacher Examination Communication Skills test and the Graduate Record Examination general test to be utilized for counseling and advisement.

5. A conference with the advisor to develop a tentative Plan of Study.

6. A review and approval of the Plan of Study by the educational administration and supervision unit of the Department of Personnel Services and the Graduate School.

Degree Requirements

To complete the program, candidates must:

1. Fulfill requirements of the Plan of Study.

2. Maintain a grade point average of at least 3.10 or better on a 4.00 scale throughout the Specialist in Education program.

3. Complete one semester of full-time study or one Summer Session of full-time study (Summer Session of approximately eight weeks).

4. Complete a minimum of 30 semester hours of graduate credit with:
   a. At least 12 hours in a candidate's specialization of educational administration and supervision.
   b. At least 6 semester hours of 900-level courses.
   c. Completion of a research component that will include one of the following:
      (1) An acceptable thesis, or major research study in earlier programs or
      (2) EAS 860, Research Seminar in Educational Administration and Supervision (or another acceptable graduate-level research course) *

5. Completion of an experience component that will include one of the following:
   (1) An internship (EAS 946-949 plus EAS 960, internship seminar) or
   (2) A field project (EAS 955).

A maximum of one-third, or 12 hours, of the graduate work, whichever is greater, on a minimum of 30 hours required for the Specialist in Education degree may be transferred from another accredited graduate school. The specific courses must be approved by the major advisor, the department and the Graduate School.

Courses considered for transfer must have been completed at an accredited graduate school, must carry a minimum grade of B and must have been in courses started not more than six years earlier than the semester in which the degree work is completed.

Courses started more than six years before the semester in which the degree work is completed may not be used as part of a degree program. However, in some cases courses taken before this time may be validated. To have courses validated, students must petition the

* EAS 860—Research Seminar in Educational Administration and Supervision—is a set of experiences planned to meet the individual needs of advanced degree candidates in the area of educational administration and supervision. Experiences are designed to provide assistance in needs assessment, problem identification, project development and implementation, research design, research consumption, and evaluation, as those needs are reflected within each student's educational plan.
Graduate School and pass a special written examination with a grade of B or better. Transfer courses and work that originally received a grade of C may not be validated. Courses completed ten or more years before the degree is granted, even if previously validated, may not be used to meet degree requirements.

Doctor of Philosophy and Doctor of Education

A transfer program in educational administration leading to the Doctor of Philosophy or Doctor of Education is available in cooperation with the University of Kansas. Program information and career advisement are available at the Department of Personnel Services, College of Education.

Courses for Graduate/Undergraduate Credit

715. Administration of the Community College. (3). Administration and supervision in the community college coupled with improvement of educational services in the community through continued education. Control, methods of finance, facilities, focus on individual students and evaluation of the entire program. D 16 715 0 0827

750. Experienced Administrator's Workshop. (1-2). Offers a variety of administrative topics. D 16 750 2 0827

752. Special Studies in Educational Administration and Supervision. (1-3). Group study in a preselected specialized area of educational administration and supervision. Repeatable for credit with departmental consent. Prerequisite: departmental consent. D 16 752 0 0827

Courses for Graduate Students Only

801. Introduction to Administration and Supervision. (3). An overview of the major theories of administration and their application to specific problems. Emphasis is on an overview of administration of the school district; especially problems involving the community and staff. Included is data gathering for self-evaluation of supervisory potential. Open to all College of Education graduate majors. D 16 801 0 0827

804. Supervision and the Improvement of Instruction. (3). The application of curricular theories, psychology and methods of supervision to the problems of improving classroom instruction and teaching methods. D 16 804 0 0827

810. The Principalship. (3). Designed primarily for individuals who are completing a master's program in educational administration and supervision. Course content focuses on the role expectations of building principals at the elementary, middle and high school levels. Specific work is designed for each student's project work level. Prerequisite: EAS 801. D 16 810 0 0827

826. Planning, Implementation, and Evaluation of School Programs. (3). A study of curriculum philosophies, theories, and developmental processes. Included are the following topics: examination of recent programs and proposals, curriculum development at the building and school level, and techniques of program evaluation. Prerequisite: EAS 704. D 16 826 0 0828


836. School Personnel Management. (3). Advanced study of staff problems—selection and recruitment, certification, orientation, in-service training, evaluation, transfer, and dismissal, and retirement. Prerequisites: master's degree or instructor's consent. D 16 836 0 0827

842. School Law (3). General concepts of law, interpretation of statutes and court decisions affecting education, and legal responsibilities of school personnel. D 16 842 0 0827

843. Kansas School Law (3). An examination of specific Kansas legislation and court decisions affecting educational institutions and state and national state issues in school law. Prerequisite: graduate standing. D 16 843 0 0827

852. Special Studies in Educational Administration and Supervision. (1-3). Group studies in new materials, new research or innovations in educational administration and supervision areas for practicing administrators or advanced students. Repeatable for credit with departmental consent. Prerequisite: departmental consent. D 16 852 0 0827

853. School Business Management. (3). School budgeting processes, accounting, risk management, purchasing and data management procedures. Management of equipment, maintenance, food, and transportation services. Prerequisite: EAS 801 and 804 or instructor's consent. D 16 853 0 0827

860. Research Seminar in Educational Administration and Supervision. (3). Designed primarily for students in advanced study with a research orientation. Course content and emphasis are varied according to the needs of students as research proposals and studies are developed, conducted and examined. Prerequisite: completion of master's degree or advisor's consent. D 16 860 0 0824

862. Presentation of Research. (1-2). A presentation of research presented in thesis manuscript form. Repeatable for a maximum 2 hours of credit. Prerequisite: EAS 860. D 16 862 0 0827

871. Group Process for Administrators and Supervisors. (3). A laboratory-based course in small group dynamics and problem solving in the classroom and school settings. Prerequisites: EAS 801 and 804 or instructor's consent. D 16 871 0 0828

874. Conflict Management. (3). This course is designed to study the effects of language, attitudes, beliefs on interpersonal communication and relationships which lead to the types and sources of organizational role and personality conflict. Approaches to personal and organizational conflict resolution will be emphasized. D 16 874 0 0827

875-876. Master's Thesis. (2-2). D 16 875 4 0827; 16 876 4 0827

878. Strategies for School Improvement. (3). An examination of organizational instructional characteristics of schools as determinants of their effectiveness (i.e., pupil academic achievement). Various school improvement models are considered, including programs designed specifically for elementary and secondary schools. Research studies considered examine established correlates for school effectiveness, as well as related teacher effectiveness variables. Prerequisites: EAS 801 and 804. D 16 878 0 0827

884. School Plant Design and Operation. (3). Planning new educational programs based upon educational programs. The evaluation of existing schools, remodeling and operation and maintenance of present school plant is included. Prerequisite: master's degree or instructor's consent. D 16 884 0 0827

888. Data Management for School Administrators. (3). An advanced course for microcomputer literate students in extending administrative data processing skills and concepts of management information systems. Hands-on experience in machine language programming, data base management, word processing, and spreadsheet programs. Using Apple computers. D 16 888 0 0827

890. Special Problems in Administration. (1-4). Directed problems in research for master's students primarily under supervision of a graduate instructor. Prerequisite: instructor's consent. D 16 890 3 0827

946, 947, 948, 949. The Internship. (2, 3, 4, 5). Administrative assignment in educational institutions. Prerequisites: 9 semester hours of post-master's graduate courses in educational administration and supervision. D 16 946 2 0827; 16 947 2 0827; 16 948 2 0827; 16 949 2 0827

953. Financial Support of Education. (3). Concepts of the financial support of education at local, state, and national levels. Emphasis is on methods of taxation, budget preparation, and efficient expenditures. Prerequisite: EAS 801 and 804 or instructor's consent. D 16 953 0 0827

955. Field Project in Administration and Supervision. (2-6). Field projects are planned to meet a legitimate need in an educational setting in which the student, using professional guidance directly involved. The project may fulfill a community need, a departmental concern or a needed investigation or inquiry. Acceptable projects are developmental or must include an appropriate research design. A well-documented report of the project is required, with the plan, term, and project approved by the student's committee. Prerequisite: completion of master's degree. D 16 955 2 0827

960. Seminar in the Process of Administration. (1-3). Concurrent enrollment in seminar is required. Arranged on an individual basis. D 16 960 9 0827

963. Politics and Power in Education. (3). An examination of the interaction of soci-
School and Community. (3). A study of the relationships between a school and its community and the administrative responses that show promise of improving relationships between students, staff, and sponsors. Students analyze data related to a particular school community to better assess the educational needs of both students and non-students and develop more appropriate organizational responses to those needs.

965. School and Community. (3). A study of the relationships between a school and its community and the administrative responses that show promise of improving relationships between students, staff, and sponsors. Students analyze data related to a particular school community to better assess the educational needs of both students and non-students and develop more appropriate organizational responses to those needs. D 16 965 0 0827

990. Special Problems In Administration. (1-4). Directed problems in research for specialist and doctoral degree students under supervision of a graduate instructor. Prerequisite: instructor's consent. D 16 990 3 0827

991. Practicum in Educational Administration and Supervision. (1-2). This course is designed for persons who have been employed in their first administrative position and are seeking certification in Kansas. The course of study will be individually designed by an EAS faculty member with the student and his/her school district supervisor. The course will address the needs of the student and the district. The thrust will be to assist the student to extend basic skills relevant to a particular administrative assignment. The student must register for 3 hours of credit in EAS 991 to meet recertification requirements. Prerequisites: completion of master's degree and departmental consent. D 16 991 2 0827

Physical Education, Health and Recreation

Graduate Faculty
Professor: Robert Holmer
Associate Professor: John Hansen (chairperson and graduate coordinator)
Assistant Professors: Natasha Fife, Richard LaPorte, F. Yvonne Slingerland, Nancy Stubbs, Fred H. Thibault

Master of Education

The Master of Education (MEd) may be earned by selecting a 30-hour sequence with a thesis or a 36-hour sequence without a thesis. The core requirements are the same for both programs. Students selecting the 30-hour sequence must take PE 875-876, Thesis. Students electing the thesis option will not be required to complete the written comprehensive examination at the conclusion of their program. An oral examination over the written thesis will be the culminating activity. Core requirements are: PE 800, 810, 812, 860, 880, IS 704 and either 825, 840 or 890. The department strongly recommends that PE 800, 860 and IS 704 be taken early in the program. The college requirements for the MEd are summarized at the beginning of the College of Education section of the Graduate School Bulletin.

Sports Administration

The MEd may also be earned with an emphasis in sports administration. The program is designed to prepare students for career opportunities in the administration of sports programs at the public school, university or professional level.

For admission to full candidacy, students must:
1. Submit a letter of application
2. Be accepted by the Graduate School
3. Submit three letters of reference to the department
4. Complete either the Graduate Record Exam (GRE) or the Miller Analogy Test by the end of the first semester and
5. Interview with the sports administration committee

Students will have conditional candidacy until the above items have been completed. This is a nonthesis program with a total of 36 hours required (including internship). The core requirements are PE 801, 847, 544 and 570. An oral exam over all portions of the candidates' program will be the culminating activity.

Professional Courses

Professional courses for physical education, health and recreation are offered in the College of Education and, unless otherwise indicated, are open to both men and women.

Courses for Graduate/Undergraduate Credit

500. Health Education. (2-3). Health problems and organization of materials for health instruction. Prerequisites: for graduate students. D 13 500 2 0837

502. Applied Health I. (2). Introduction to public health problems and practices. Field excursions are arranged. Prerequisite: departmental consent. D 13 502 2 0837

504. Applied Health II. (2). Intensive study of selected health problems with regard to illness prevention and the present state of world health. Prerequisite: PE 502 or departmental consent. D 13 504 2 0835

515. Rhythmic Activities in the Elementary School. (2). This course is designed to teach methodology and curricular content of rhythmic activities appropriate for elementary school children. D 13 515 2 0835

530. Physiology of Exercise. (3). PR 1L. To provide the student with a working knowledge of human physiology as it relates to exercise. D 13 530 1 0835

533. Measurement and Evaluation in Physical Education. (3). A study of the modern practices utilized in the total evaluation of physical education programs. Prerequisites: introduction to mathematics and research methods. (1) basic statistical procedures, (2) a survey of measurement tools, (3) evaluation teaching and analysis of the psychology of motor learning. D 13 533 0 0835

544. Organization and Administration of Physical Education Programs. (3). The organizational and administrative problems of physical education programs and the management of the physical plant. D 13 544 2 0835

547. Field Option Internship. (8). Internship activity for students in fitness, sports business, safety or athletic training. Students will spend the equivalent of full-time employment in the appropriate agency for one full semester. Prerequisite: senior standing and departmental consent. D 13 547 2 0835

570. Psychology of Sport. (3). An in-depth analysis of the psychology of motor learning and its implications for the teacher-coach. D 13 570 0 0835

590. Independent Study. (1-3). Prerequisite: departmental consent. D 13 590 0 0835

750. Workshop in Education. (1-4). D 13 750 2 0835

752. Special Studies in Health, Physical Education, and Recreation. (1-2). Group study in a preselected area of health, physical education or recreation. Repeatable for credit with departmental consent. D 13 752 0 0835

781. Cooperative Education Field Study. (1-8). The goal of this course is to provide the graduate student with a field placement which integrates theory with a planned and supervised professional experience designed to complement and enhance the student's academic program. Individualized programs must be formulated in consultation with appropriate graduate faculty. The plan of study for a graduate degree-bound student must be filed before approval of enrollment for cooperative education graduate credit. May be repeatable for credit with a minimum of hours counting toward the graduate degree. Offered CR/NC only. D 13 781 2 0835

Courses for Graduate Students Only

800. Recent Literature in Health, Physical Education, and Recreation. (3). Survey and critical analysis of research and other pertinent materials in the field. D 13 800 0 0835

801. Seminar in Sports Administration. (3). This course is designed to provide the student with a comprehensive overview of problems relating to sports administration programs. A sample of topics covered follows: public relations, promotion, personnel management, finance, accounting, conflict management and travel. D 13 801 0 0835

810. Adapted Physical Education. (3). Philosophy, principles and methods of adapting physical education and recreation activities to the needs of the handicapped and the exceptional individual. Laboratory experience is provided. Prerequisite: PE 326 or departmental consent. D 13 810 0 0819

812. Advanced Techniques in Physical Education. (3). Comprehensive coverage of selected physical activities, with special emphasis on class procedures. Laboratory experiences are included. D 13 812 1 0835

825. Physical Education in Elementary Schools. (2). New concepts, recent trends, methodology, programming and supervision. This course is directed by the elementary teacher and physical education specialist. D 13 825 0 0835
826. Movement Education I. (3). This course is designed to introduce instructional techniques and curricular content utilized in the teaching of movement exploration (educational gymnastics and creative rhythms). The measurable aspects of weight, space, time, and flow will be studied to provide insight into the noncompetitive instruction of children when teaching movement skills. D 13 826 2 0935


847. Internship. (6-12). Internship in selected area of specialization of the sports administration program. Prerequisite: departmental consent. D 13 847 2 0835

860. Research Methods In Health, Physical Education, and Recreation. (3). An introduction to the research in health, physical education, and recreation. Included in the course are: (1) importance and meaning of research, (2) literature search, (3) laboratory and nonlaboratory studies and (4) the research report. D 13 860 0 0835

875. Thesis. (2). Prerequisite: IS 704 and PE 860. D 13 875 6 0835

876. Thesis. (2). Prerequisite: IS 704 and PE 860. D 13 876 6 0835

880. Analysis of Motor Skills. (3). Movement and sport skills in terms of mechanical principles by means of films and experimentation. D 13 880 0 0835

890. Problems In Health, Physical Education, and Recreation. (1-4). Directed reading and research under supervision of a graduate instructor. D 13 890 3 0835

College of Engineering

Offices: 100 Wallace Hall

William J. Wilhelm, Dean
Barbara Bowman, Assistant dean

Departments:
Aeronautical—Bert L. Smith, chairperson; Glen W. Zumwalt, graduate coordinator
Electrical—Roy H. Norris, chairperson; Mark T. Jong, graduate coordinator
Industrial—Yildirim "Bill" Omurtag, chairperson; Zbigniew Czajkiewicz, graduate coordinator

Mechanical—James M. Bowyer, Jr., chairperson; Le-Chung Cheng, graduate coordinator

The College of Engineering offers graduate programs leading to a Master of Science (MS) in the fields of aeronautical engineering, electrical engineering, mechanical engineering and engineering management science. The Doctor of Philosophy (PhD) in engineering is described below.

Admission to any engineering program of study at Wichita State requires a bachelor's degree in an accredited engineering or related program and the fulfillment of other requirements given elsewhere in the Graduate School Bulletin. Applicants unable to meet full requirements for admission may be accepted on conditional status at the recommendation of the chairperson of the department and the dean of the college.

Doctor of Philosophy

A PhD in engineering is offered by the four departments of engineering at WSU. This program is enhanced by the presence of the industrial complex in Wichita.

Typical fields of specialization include analytical and computational fluid mechanics, applied statistical methods, avionics, biomechanics, communications, computers, control systems, engineering management science, engineering materials, electromagnetic fields, ergonomics/rehabilitation, failure analysis, heat transfer, information systems, manufacturing, mechanical design, production processes, productivity enhancement, propulsion, signal processing, structural dynamics, structures, and thermodynamics.

These fields will be used in determining testing areas for the qualifying examinations and course breadth requirements.

Admission Requirements

Admission to the PhD in engineering program requires that the student has completed (or nearly completed) a master's degree in engineering or physical science. Some students may find it necessary to take prerequisite courses to be able to meet the course breadth requirements. The student is recommended to the graduate dean for admission by the department chairperson in consultation with the graduate coordinator of the department where the graduate student will be housed.

Qualifying Examination

Before 18 post-master's graduate hours are completed, after admission to the PhD program, the student under the direction of his/her advisory committee must take written examinations in (1) mathematics, (2) the major field of study, and (3) one other of the fields of specialization; this latter is termed the "minor field." The qualifying examinations are each two hours in length and will be offered as requested. The schedule for the exams will be established by the graduate coordinator in the department where the student is housed and the exams will be established and graded by members of the student's advisory committee or the appropriate departments of members of the student's advisory committee. On the first attempt, the student must take at least two parts of the exam. No part may be attempted more than twice. This examination tests students' breadth of knowledge and determines their ability to formulate mathematical representations of real physical situations. Upon passing, a student is known as an Aspirant for the PhD.

Plan of Study and Advisory Committee

Within the first 12 hours of PhD coursework, the department chairperson, in consultation with the graduate coordinator and the student, recommend to the Engineering Graduate Committee an Advisory Committee for each student consisting of four engineering faculty and one graduate faculty member from outside the College of Engineering. The chairman of the advisory committee should be the student's dissertation advisor. The student and advisory committee chairperson will formulate a plan of study and a tentative dissertation topic for approval by the advisory committee, the department chairperson, the engineering graduate committee and the graduate dean. The plan of study will include designation of major and minor fields and all graduate level coursework which is applicable to the degree.

Course Breadth Requirements: To ensure proper breadth of coursework, the Plan of Study must include at least 12 hours of mathematics, at least 15 hours in the student's major field, and at least one course in each two other fields of specialization. A Plan of Study normally contains about 60 semester hours of coursework, including courses from the master's degree.
Final Dissertation Examination
The student must defend the dissertation before the advisory committee. At least five months must elapse between the DAE and the final examination. The final examination will be open to the public. Invited guests or external examiners may be invited if the committee desires.

General Engineering
Course for Graduate/Undergraduate Credit
555. Computer Graphics. (3). 2R; 2L. Forms of computer graphics, input-output devices, generation of points, vectors, etc. Included are interactive versus passive graphics and the mathematics of three dimensions, projections and the hidden line problem. Animated movies, computer-aided design and instruction are included as well as applications. Prerequisites: Math. 344, EE 198 or AE 327 or equivalent. E 10 565 1 0901

Dissertation Approval Examination (DAE)
When the PhD aspirant has completed the major portion of the course work and FLORT requirement, the advisory committee can permit for permission to administer the DAE. The aspirant will submit a written dissertation proposal to the advisory committee and to the engineering graduate committee. After reading the proposal and receiving approval of the topic from the engineering graduate committee and permission of the graduate dean, the advisory committee will conduct an oral examination to determine the aspirant’s ability to carry out the proposed research, and whether or not this research qualifies as a PhD dissertation. Any essential change in the project requires committee approval and a recommendation from the engineering graduate committee.

After passing the DAE, the student is known as a Candidate for the PhD Degree. A candidate must be continuously enrolled in Engr. 976, PhD Dissertation, for a minimum of 6 hours each semester and 2 hours in the Summer Session until completion of the dissertation or 24 hours of Engr. 976 have been taken. After this, 2 hours per semester and 1 hour per summer are required. In any case, no less than 24 hours of enrollment for PhD dissertation will be required. The dissertation may be performed in absentia with the approval of the advisory committee.

Aeronautical Engineering
Graduate Faculty
Distinguished Professor: Glen W. Zumwalt
(graduate coordinator)
Gates-Learjet Professor: William H. Wentz, Jr.
Professors: Walter D. Bernhart, Andrew J. Craig, Edward J. Rodgers, Bert L. Smith (chairperson), Melvin H. Snyder
Associate Professors: Walter J. Horn, M. Gawad Nagati
Assistant Professor: T. Parnamavam

The Department of Aeronautical Engineering offers graduate programs leading to the Master of Science (MS) and participates in the Doctor of Philosophy (PhD) program. These programs are enhanced by the presence of the aviation industry in Wichita, including Beech Aircraft Corp., Boeing Military Aircraft Company, Cessna Aircraft Co. and Gates Learjet Corp. Graduate course work is scheduled so that engineers employed in local industry may pursue graduate work.

Master of Science
Courses of study leading to the MS degree are available with specializations in aerodynamics, propulsion sciences, guidance and control, and aircraft structures. Both a thesis and nonthesis option are available.

Admission Requirements
To be admitted to graduate programs in aeronautical engineering, students must have completed the equivalent of an undergraduate major in engineering or related areas. Students’ records are examined individually prior to admission so that their potential for graduate study can be evaluated. For admission, a grade point average of 2.75 is usually required for (1) the last two years of undergraduate work, (2) all engineering courses and (3) mathematics and physical sciences courses.

Degree Requirements
The Master of Science requires completion of a plan of courses that is approved by a student’s advisor and the department chairperson. The program includes required courses and technical electives; details may be obtained from the department chairperson or graduate coordinator.

Two options are available: (1) the thesis option requires a minimum of 30 total hours, including 4 hours of thesis (AE 876) and (2) the directed study option requires a minimum of 34 hours, including 2 hours of directed studies (AE 876). Degree programs in either option must include at least 15 credit hours of 700-level (or above) course work.

Examinations
Before the degree is granted, candidates must pass an oral examination, administered by an ad hoc faculty committee, over their thesis or directed study and course work.

Doctor of Philosophy
For admission and degree requirements, see the Graduate Programs in Engineering section.

Graduate Courses
All graduate courses must be approved in advance of enrollment by a student’s graduate advisor.

Courses for Graduate/Undergraduate Credit
512. Experimental Methods in Aerodynamics. (2). 4L. A study of experimental methods and test planning, error analysis and propagation, model design, instrumentation, and flow visualization. Use is made of subsonic and supersonic wind-tunnel facilities. Prerequisites: AE 424. E 11 512 1 0902


527. Numerical Methods in Engineering. (3). Error analysis, polynomial approximations and power series, iterative solutions of equations, matrices and systems of linear equations, numerical differentiation and integration, approximate solution of differential equations by divided differences are included. Prerequisites: AE 327, and Math. 550 which may be taken concurrently. E 11 527 0 0901.

532. Propulsion. (3). Theory and performance of propellors and reciprocating, turbojet, turboshaft, ramjet and rocket engines. Prerequisite: ME 400. E 11 532 0 0902.

550. Selected Topics in Aeronautical Engineering. (1-3). Prerequisite: departmental consent. E 11 550 0 0902.


633. Mechanics of Deformable Solids II. (3). The course is an extension of AE 333. Typical topics studied are transformation of stress and strain in three dimensions, noncircular torsional members, curved beams, beams with unsymmetric cross sections, energy methods and the finite element method of analysis, stress concentration, theories of failure, fracture mechanics, etc. Prerequisite: AE 333. E 11 633 0 0921.

664. Field Analysis. (3). Potential theory: applications of the equations of Poisson and Helmholtz and of the diffusion and wave equations to various field and flow phenomena. Analysis of representative problems is also made. Prerequisite: ME 400. E 11 664 0 0921.

675. Selected Topics in Aeronautical Engineering. (1-3). Prerequisite: departmental consent. E 11 675 0 0902.

676. Selected Topics in Engineering Mechanics. (1-3). Prerequisite: departmental consent. E 11 676 0 0921.

677. Vibration Analysis. (3). A study of free, forced, damped and undamped vibrations for one and two degrees of freedom, as well as classical, numerical and energy solution for multidegree freedom systems. An introduction to continuous systems is given. Prerequisites: Math. 550 and AE 373. E 11 677 0 0921.


702. Jet Propulsion. (3). Analysis of jet propulsion devices; study of cycles; effect of operating variables; presentation of problems of installation, operation and instrumentation. Prerequisite: AE 532 or equivalent. E 11 702 0 0902.


711. Aerodynamics of Nonviscous Fluids. (3). A study of equations of motion, potential flow, conformal transformations, finite wing theory and nonsteady airflow theory. Prerequisite: AE 424 or 420 or ME 621. E 11 711 0 0902.

716. Aerodynamics of Compressible Fluids I. (3). Analysis of compressible fluid flow for one and two-dimensional cases, moving shock waves, one-dimensional flow with friction and heat addition, linearized potential functions, methods of characteristics, conical shocks and supersonic similarity laws. Prerequisite: AE 424 or AE 420 or ME 621 or equivalent. E 11 716 0 0902.

731. Analysis of Elastic Solids I. (3). The equations of elasticity are developed and used to determine stresses and deformations in two dimensional (plane stress and plane strain) problems. Additional topics include: analysis of isotropic, orthotropic and composite plates; energy methods of analysis, and numerical methods of analysis such as finite elements and collocation. Credit will not be granted for both AE 730 (no longer offered) and 731. Prerequisite: instructor's consent. E 11 731 0 0921.

753. Mechanics of Fiber Composites. (3). An introduction to generalized Hooke's law for deformable solids, two-dimensional orthotropic and anisotropic stress-strain relations, multiaxial lamine of fiber composite and strength of laminates made of several lamina at different fiber orientation. Simple laminated and filament wound composite structures are analyzed. Advanced fiber composites such as graphite-epoxy, kevlar-epoxy, boron-epoxy, etc., are designed and analyzed. Prerequisites: AE 333 and Math. 311 or instructor's consent. E 11 753 0 0921.

760. Selected Topics in Engineering Mechanics. (1-3). New or special courses are presented under this listing on sufficient demand. Repeatable for credit when subject material warrants. Prerequisite: departmental consent. E 11 760 0 0921.

761. Selected Topics in Aerodynamics and Fluid Mechanics. (1-3). New or special courses are presented under this listing on sufficient demand. Repeatable for credit when subject material warrants. Prerequisite: departmental consent. E 11 761 0 0902.

762. Selected Topics in Propulsion. (1-3). New or special courses are presented under this listing on sufficient demand. Repeatable for credit when subject material warrants. Prerequisite: departmental consent. E 11 762 0 0902.

773. Engineering Mechanics: Dynamics II. (3). A study of kinematics and dynamics of particles and rigid bodies for two- and three-dimensional motion, with an introduction to vibratory motion. Lagrange's equations are included. Prerequisite: AE 373 or equivalent. E 11 773 0 0921.

Courses for Graduate Students Only

801. Structural Dynamics II. (3). A study of vibration of strings and membranes, longitudinal, torsional and lateral vibration of bars, lateral vibration of plates and shells, classical, numerical and energy solutions, and an introduction to problems of aeroelasticity. Prerequisite: AE 677. E 11 801 0 0921.

812. Aerodynamics of Viscous Fluids. (3). Viscous fluids flow theory and boundary layers. Prerequisite: AE 424 or 420 or ME 621. E 11 812 0 0902.

822. Finite Element Analysis of Structures. (3). Analysis of structures by the direct stiffness method and comparison of methods and selected topics in finite element analysis. Prerequisites: AE 333 and instructor's consent. E 11 822 0 0902.

831. Analysis of Elastic Solids II. (3). The course is a continuation of AE 731 with topics taken from elastic stability, fracture mechanics, etc. Methods of analysis include energy methods and numerical methods such as finite elements and collocation. E 11 831 0 0921.

838. Random Vibration. (3). Includes characterization, transmission and fluctuation of random mechanical systems subjected to random vibration. Analysis and measurement methods for random data are included. Prerequisite: Instructor's consent. E 11 838 0 0921.

876. MS Thesis. (1-4). E 11 876 0 0902.

878. Directed Studies. (1-2). A course involving directed study under the supervision of a graduate faculty member. Written report is required. Repeatable toward the MS directed study option up to 2 hours. Prerequisite: graduate standing. E 11 878 0 0902.

913. Aerodynamics of Aeroelasticity. (3). A study of laminated and filament composites structures in steady flow and thin airfoil oscillating in incompressible flow. Extension to compressible and three-dimensional airfoils and modern methods for low aspect ratio lifting surfaces are included. Prerequisites: AE 711 and 677 or instructor's consent. E 11 913 0 0902.

916. Aerodynamics of Compressible Fluids II. (3). An exploration of perfect gas flows past bodies of revolution. Also included are axisymmetric method of characteristics, hyperbolic and transonic similarity, Newtonian theory, high temperature gases and one-dimensional moving shock waves. An introduction is made to separated flows and jet mixing. Prerequisite: AE 716. E 11 916 0 0921.

936. Theory of Plasticity. (3). Includes criteria of yielding, including plastic stress-strain relationships, and stress and deformation in thick-walled shells, rotating disks and cylinders: bending and torsion of prismatic bars for ideally plastic and strain-hardening materials. Two-dimension and axially symmetric problems of finite deformation and variational and extremum principles are included. Prerequisite: AE 731. E 11 936 0 0921.

Doctor of Philosophy and Master of Science

The Master of Science (MS) program in electrical engineering includes a group of courses ranging from fundamentals to the current state-of-the-art in several areas. The department also participates in the Doctor of Philosophy (PhD) in engineering program.

Admission Requirements

Admission to the program in electrical engineering requires the completion of an undergraduate major, or the equivalent, in electrical engineering or related areas with a grade point average of 2.75 for (1) the last two years of undergraduate work, (2) all engineering courses and (3) mathematics and physical sciences courses.

Degree Requirements

The MS in electrical engineering requires the completion of a course plan approved by a student's advisor and the department's chairperson. Two options are available with separate requirements: (1) the thesis option requires a minimum total of 32 hours, including 4 to 6 hours of thesis through EE 876 and (2) the directed studies option requires a minimum of 34 total hours, including 2 to 4 hours of directed studies through EE 878.

Programs in either option must include at least 19 hours of 700- and 800-level work and at least 6 hours outside the department. Students must have a 3.00 grade point average in electrical engineering courses for graduation as well as in all work on the plan of study. Specific course requirement information will be supplied by a student’s graduate advisor.

Examinations

Before the degree is granted, all candidates must pass a written examination. Details of the examination can be obtained from the department. Thesis option candidates must also pass an oral defense of their thesis. For information on the Doctor of Philosophy, see the Graduate Programs in Engineering section.

Facilities

Modern electrical engineering laboratories contain facilities for experimental work in areas of instrumentation, feedback control, computers and digital systems, radio science, electronics, circuits, energy conversion, antennas and communication systems.

Courses for Graduate/Undergraduate Credit

580. Transient and Frequency Analysis. (3). 3R. A study of the transient and frequency response of linear electrical systems. Prerequisites: EE 382 and Math. 550. May not be counted for credit toward a graduate electrical major.

585. Electrical Design Project I. (3). 3L. A design project under faculty supervision chosen according to the student's interest. Prerequisite: departmental consent. May not be counted toward a graduate electrical major. E 12 585 3 0909

588. Advanced Electromechanical Energy Converters. (3). 3R. A continuation of EE 485, including solid-state control. Computer applications are stressed. Prerequisites: EE 492 and 486. E 12 588 1 0909

594. Logic Design and Switching Theory. (3). 3R. An introduction to the function and application of digital integrated circuits. Combinational and sequential design techniques are covered in detail. Prerequisite: senior standing or departmental consent. May not be counted for credit toward a graduate electrical major. E 12 594 1 0909

595. Electrical Design Project II. (1). 3L. May not be counted toward a graduate electrical major. Prerequisite: EE 585 or departmental consent. E 12 595 3 0909

598. Electric Energy Systems. (3). 3R. Concepts of electric energy systems, high-energy transmission lines, system representation, load-flow analysis, load-flow control, economic operation, symmetrical and unsymmetrical faults, and system stability. Computer applications are stressed. Prerequisite: EE 488. E 12 598 0 0909

638. Engineering Applications of Small Computers. (3). This course is designed to provide an understanding and appreciation of small computer capability and the application of these computers to engineering problems. Through hands-on operation, topics such as interfacing to special equipment, graphics, and special programs. Computer Aided Designs, Local Areas Networks, organization and programming considerations are studied and applications emphasized. Prerequisites: EE 228 or equivalent and at least one EE course at 500 level or above. E 12 638 0 0909

654. Probabilistic Methods in Systems. (3). This is a course in random processes which is designed to prepare the student for work in control systems, computer systems, information theory, and signal processing. The course covers basic concepts and useful analytical tools for engineering problems involving discrete and continuous-time random processes. Applications to system analysis and identification, analog and digital signal processing, parameter estimation and related disciplines will be discussed. Prerequisites: EE 580 and IP 384 or departmental consent. E 12 654 0 0909

663. Waves, Waveguides, and Antennas. (3). A study of radiation and transmission of electromagnetic waves. Topics include plane wave propagation in various media, normal and oblique reflections, dielectric windows, transmission through waveguides, and introduction to antennas. Prerequisite: EE 363, and EE 682. E 12 663 0 0909

777. Selected Topics in Electrical Engineering. (1-4). New or special courses are presented under this listing on sufficient demand. Prerequisite: departmental consent. E 12 677 0 0909

861. Electronic Circuits II. (4). 3R; 3L. An investigation of the theory and application of discrete and integrated circuits. Topics include op-amp, but are not limited to, linear and switched capacitor filters, non-linear circuits, analog and digital phase locked loops, switched-mode power conversion, and RF circuits. Prerequisite: EE 492 and 580 or departmental consent. May not be counted for credit toward a graduate electrical major. E 12 681 1 0909

862. Energy and Information Transmission. (2). 2R. A study of the theory and application of transmission lines. Both pulsed and steady state sinusoidal signals are treated. Topics include line parameters and equations, signal propagation, effects of terminations, and resonant lines and stubs. Prerequisite or concurrent: EE 594. May not be counted for credit toward a graduate electrical major. E 12 682 0 0909

863. Network Theory. (3). Matrix algebra, graph theory, computer-aided analysis and design. Applications of the concepts of network theory to computer-aided analysis and design. Prerequisite: EE 590. E 12 683 0 0909

864. Introductory Control System Concepts. (3). 3R; 3L. Introduction to systems modeling and simulation, dynamic response, feedback theory, stability criteria and compensation design. Prerequisite: EE 590. E 12 684 1 0909

866. Information Processing. (4). 3R; 3L. Properties of signals and noise; introduction to information theory; and AM, FM and pulse modulation and detection. Principles of sampling, coding and multiplexing and the organization of analog and digital systems for information processing are included. May not be counted toward a graduate electrical major. Prerequisite: EE 580. E 12 686 1 0909

889. Electrical Laboratory. (2). 4L. This course provides training in laboratory methods and in experimental design methods. It consists of selected experiments related to EE 882 and several of the other prerequisites, depending on the background of the students enrolled. May not be counted for credit toward a graduate electrical major. Prerequisite or concurrent: EE 882 and any two of EE 594, 588, 638, 663, and 884. E 12 689 1 0909

949. Digital Computer Design Fundamentals. (3). An introductory but reasonably detailed study of stored program digital computer
Methods of Discrete Systems Analysis. (3). A study of methods of analysis of discrete-time signals and systems. Time-domain techniques, difference equations and discrete convolution. Z-transform methods, frequency response of discrete systems, discrete Fourier transforms, and fast Fourier transform are covered. Applications in digital signal processing and sampled-data systems are surveyed. Prerequisite: EE 580 or departmental consent. E 12 782 0 0909

Digital Communication Systems. (3). A course designed to cover theoretical and practical aspects of digital information transmission. Topics to be covered include modeling and analysis of digital information sources, source coding, baseband PAM data transmission, digital modulation schemes, such as PSK and QPSK, error correction through coding and techniques for digital transmission of analog data. Prerequisites: EE 684 and 688 or equivalent. E 12 785 0 0909

Independent Study in Electrical Engineering. (1-3). Arranged individually, independent study in specialized content areas in electrical engineering under the supervision of a faculty member. Repeatable for credit. Prerequisite: departmental consent. E 12 790 0 0909

State-Variable Techniques in Systems I. (3). Review of mathematics fundamentals, state-space concepts. Formulation of state-variable models for linear and nonlinear continuous and discrete systems, and concepts of controllability and observability. Adjunct systems are studied in addition to Lapunov and Lagrange stability and computational approximation techniques. Prerequisite: EE 580 or departmental consent. E 12 792 0 0909

Advanced Digital Systems. (3). A course covering primarily two topics: (1) microprocessors and (2) multiprogramming. The operation and application of microprocessors are presented, and a survey of available devices is reviewed. The characteristics of microprocessor architecture are covered, and the techniques of multiprogramming are presented. The techniques are applied on the department's microprogrammable minicomputer. Prerequisites: EE 684 and 228 or equivalent. E 12 794 0 0909

Courses for Graduate Students Only

Stochastic Control Systems. (3). Reference to the pertinent aspects of deterministic system models, stochastic processes and linear dynamic system models with emphasis on linear systems driven by white Gaussian noise; linear estimation and optimal filtering; digital communication analysis of human filters. Prerequisites: EE 684 and 654. E 12 854 0 0909

Thesis. (1-3). Repeatable for credit toward the MS thesis option up to 6 hours. Prerequisite: permission of graduate coordinator. E 12 876 4 0909

Special Topics in Electrical Engineering. (3). New or special courses are presented under this listing on sufficient demand. Prerequisite: departmental consent. E 12 877 0 0909

Directed Studies in Electrical Engineering. (1-4). Repeatable toward the MS direction only up to 4 hours. The student must write a paper and give an oral presentation on the study made. Prerequisite: departmental consent. E 12 878 4 0909

Analog and Digital Filters. (3). A course covering the basic knowledge and use of the tools of filter design. Both analog and digital filters are treated. Topics include filter approximations, passive and active analog filter realizations, sensitivity analysis, and digital filter concepts and design methods. Prerequisite: EE 780 or departmental consent. E 12 892 0 0909

Discrete-Time Control Systems. (3). Fundamentals of input-output and state-space analysis; difference equations and discrete minimum principle; linear state regulator design; optimality-constrained control problems. Prerequisites: EE 684 and 782. E 12 884 0 0909

Communication Theory. (3). Theory of information and noise: communication in presence of noise; channel capacity; modulation and multiplexing; sampling and coding; detection theory, including effects of noise and nonlinearity; and error correlation methods. Prerequisites: EE 684 and 688 or departmental consent. E 12 886 0 0909

Selected Topics in Antennas and Propagation. (3). Determination of characteristics of practical antenna systems; radiation patterns and antenna impedance; diffraction, horns, slots, etc.; and wave propagation in the earth's environment, including tropospheric and ionospheric phenomena. Prerequisite: EE 663. E 12 888 0 0909

Advanced Electrical Laboratory. (2). Laboratory in fundamental experimental technology in some field of electrical specialization. This course consists of selected experiments in various areas of electrical engineering. Prerequisites: EE 684 and 688 or departmental consent. E 12 890 0 0909

Topics in Control Systems. (3). A study of various concepts such as multidimensional systems, multivariable systems and decoupling, nonlinear systems, and sampled-data systems. Repeatable for credit. Prerequisite: EE 684 or departmental consent. E 12 890 0 0909

State-Variable Techniques in Systems II. (3). A continuation of the study of state-space concepts in the areas of nonlinear systems and optimal control systems with wide classes of performance measures. Prerequisite: EE 782 or departmental consent. E 12 893 0 0909

Advanced Energy Systems. (3). A continuation of EE 698 with the topics treated in greater depth. Computer applications are stressed. Prerequisite: EE 698 or departmental consent. E 12 899 0 0909


Sensitivity Methods in Control Systems Design. (3). Sensitivity analysis of deterministic and stochastic systems: sources of uncertainty in control systems, e.g., plant parameter variation, time delays, small nonlinearities, noise disturbances and model re-
duction; quantitative study of the effects of uncertainties on system performance; low sensitivity design strategies; state and output feedback design; sensitivity function approximation, singular perturbation and model reduction techniques; adaptive systems and near-optimal control. Prerequisites: EE 893. E 12 993 0 0909

Industrial Engineering
Graduate Faculty
Professor: Yildirim "Bill" Omurtag (chairperson)
Associate Professors: Donald Hoomertzheim, Don Malzahn
Assistant Professor: Zbigniew Czajkiewicz (graduate coordinator), Nasser Farid, Abu Masud, Mounir Rahimi

Doctor of Philosophy and Master of Science

The Department of Industrial Engineering offers a graduate program leading to the Master of Science (MS) in engineering management science. The department also participates in the Doctor of Philosophy (PhD) in engineering program.

Admission Requirements
To be admitted to a graduate program in industrial engineering, students must have completed the equivalent of an undergraduate major in engineering or other quantitatively oriented fields. Applicants' records are examined individually prior to admission to evaluate their potential for graduate study. Normally, a grade point average of 2.75 is required for full admission for (1) the last two years of undergraduate work and (2) all mathematics, engineering and physical sciences coursework.

Degree Requirements
The MS in engineering management science requires the completion of a plan of courses that is approved by the student's adviser. The program includes required courses and electives; details may be obtained from the department chairperson. Two options are available: (1) the thesis option requires a minimum of 30 total hours, including 3 hours of thesis through IE 876 and (2) the non-thesis option requires a minimum of 34 hours, including 3 hours of seminar through IE 879. Degree programs in either option must include at least 18 credit hours of 700-level (or above) course work. The thesis option allows 6 hours maximum and the non-thesis option allows 12 hours maximum of electives in business, engineering, mathematics, computer science and psychology or any other discipline approved by the department.
Examinations
Before a degree is granted, candidates must pass an oral examination, administered by an ad hoc faculty committee, over their thesis or seminar and course work. For information on the Doctor of Philosophy see the Graduate Programs in Engineering section.

Courses for Graduate/Undergraduate Credit

549. The Human Factor in Engineering Design. (3). A systematic approach to the optimization of human-environment interaction. Topics include human information processing and limitations, work space design and environmental factors. Prerequisite: IE 354. E 13 549 0 0913


553. Production Control. (3). Techniques of production planning, scheduling and dispatching, and applications to automation and computer control. Prerequisite: IE 452. E 13 553 1 0913

554. Statistical Quality Control. (3). Measurement and control of product quality using process control and acceptance sampling techniques. Prerequisite: IE 354. E 13 554 1 0913

556. Introduction to Information Systems. (3). A study of the design, implementation and economic analysis of computer based information systems. Prerequisite: IE 355. E 13 556 0 0913


570. Manufacturing Process Control. (3). A study of control techniques and applications for employing microcomputers to monitor and control industrial processes. Included are topics such as sensor characteristics and applications; control techniques; and programming considerations. Prerequisite: EE 199. Corequisite: EE 352. E 13 570 0 0913

580. Modern Techniques in Safety Engineering. (3). An advanced study of the principles and quantitative measures of industrial safety and the Occupational Safety and Health Act. Prerequisite: IE 357. E 13 580 0 0913

590. Senior Projects in Industrial Engineering. (1-3). Selection and research of a specific industrial engineering topic. Prerequisites or corequisites: IE 452 and 550. E 13 590 1 0913


596. Engineering Probability and Statistics II. (3). A study of hypothesis testing, regression analysis, analysis of variance, correlation analysis and non-parametric statistics with emphasis on applications to engineering. Prerequisite: IE 354. E 13 596 0 0913

665. Management Systems Simulation. (3). The design of simulation methods and techniques for use in managerial decision making, engineering evaluations and other systems too complex to be solved analytically. Emphasis is on general purpose computer simulation. Prerequisites: AE 327 and IE 354. E 13 665 1 0913


720. Urban Systems. (3). Cross-listed as UA 720. This course develops the principles of systems analysis and the tools by which these principles can be applied. Example applications are taken from urban problems. Emphasis is on the formulation of realistic models and solutions. Computer techniques are developed in class as necessary. Prerequisite: instructor's consent. E 13 720 0 0913

722. Simulation of Social and Administrative Systems. (3). Designed primarily for non-quantitatively trained persons working in the social and administrative areas who desire a working knowledge of simulation. No programming experience is necessary. Case studies are used extensively, and facility in one simulation language is developed. Not for graduate credit for engineering majors. Prerequisite: departmental consent. E 13 722 1 0913

730. Advanced Linear Programming. (3). A continuation of IE 550. Included are topics are the mathematical development of the simplex method, revised simplex, decomposition, bounded variables, parametric programming and integer programming. Prerequisite: IE 550. E 13 730 0 0913

732. Queuing and Inventory Systems. (3). An analysis of the behavior of queueing and inventory systems and their interrelationships. Poisson, non-Poisson and imbedded Markov chain queuing models are discussed. Includes the development of single and multi-item constrained inventory models and periodic and continuous review policies. Prerequisite: IE 650. E 13 732 0 0913

735. Applied Forecasting Methods. (3). Analysis of prediction techniques in forecasting and scheduling by time series and probability models, smoothing techniques and error analysis. Prerequisite: IE 564 or Econ. 631. E 13 735 0 0913

740. Analysis of Decision Processes. (3). A study of time value of money, economics of equipment selection and replacement, engineering estimates, evaluation of proposals, constrained inventory models and the solution of economic problems by the analysis of certainty, risk and uncertainty. Prerequisites: IE 354 and 355. E 13 740 0 0913

745. Production Engineering. (2). The organization and control of productions and associated staff functions. The formulation of manufacturing policies and case studies in production design are included. E 13 745 0 0913

750. Industrial Engineering Workshops. (1-4). Various topics in industrial engineering. Prerequisite: departmental consent. E 13 750 2 0913

Courses for Graduate Students Only

831. Classical Optimization Techniques. (3). An extensive treatment of those optimization techniques that do not require the use of linear programming. A development of variational methods and numerical based techniques is given. Prerequisite: IE 550. E 13 831 0 0913

842. System Simulation with Digital Computers. (3). Advanced development of the techniques and methods for simulating complex systems. Emphasis is on the design of simulation experiments and on the statistical analysis of results. Prerequisite: IE 665. E 13 842 1 0913

843. Operations Research. (3). A study of the theory and application of nonlinear model-building techniques for the problems found in industry. Included are the theory, Jacobian method, Lagrangian multipliers, and separable, convex, quadratic, geometric and stochastic programming. Prerequisites: IE 550 and IE 665. E 13 843 1 0913


876. Thesis. (1-3). Prerequisite: consent of thesis adviser. E 13 876 0 0913

879. Seminar in Management Science. (3). Application of management science methods and models to real problems. A special project, including original case research, supervised internships or field research is assigned. Prerequisite: consent of graduate adviser. E 13 879 1 0913

880. Topics in Industrial Engineering. (3). New or special courses are presented under this listing on sufficient demand. Repeatable for credit when subject matter warrants. E 13 880 0 0913

Mechanical Engineering

Graduate Faculty

Professors: James M. Bowyer, Jr. (chairperson), Albert L. Gouman, A. Richard Graham, Mahesh S. Greywall
Associate Professor: Le-Chung Cheng (graduate coordinator)
Assistant Professors: James A. Harris, Mohammad R. Najj, Raj S. Sodhi, Lionel R. Whitmer

Doctor of Philosophy and Master of Science and Areas of Specialization

The Department of Mechanical Engineering offers courses of study leading to the Master of Science (MS) that allow specialization in engineering design, instrumentation, automation, thermodynamics, heat transfer, fluid mechanics and plasma dynamics. The department also participates in the Doctor of Philosophy (PhD) in engineering program.

Admission Requirements

Admission to the program requires the equivalent of an undergraduate major in mechanical engineering or related areas.
Degree Requirements
The MS in mechanical engineering requires the completion of one of two options: (1) the thesis option requires a minimum of 30 credit hours, including 4 hours of thesis through ME 876 and (2) the directed study option requires a minimum of 34 credit hours, including 2 hours of directed study through ME 878. In the directed study option, an ad hoc faculty committee gives an oral examination to students in relation to their project.

Students must have the Plan of Study in either option approved by their graduate adviser and department chairperson and must have their plan meet the department's requirements regarding required and elective courses. Information about the elective courses may be obtained from the student's graduate adviser.

Course work in either option must include (1) a minimum of 17 credit hours at the 700 level or above and (2) a minimum of 6 hours outside of the department.

Examinations
Before a degree is granted, candidates must pass an oral examination over the thesis or directed study and/or course work. For information on the Doctor of Philosophy, see the Graduate Programs in Engineering section.

Courses for Graduate/Undergraduate Credit
The courses numbered 502 through 767 are not automatically applicable toward an advanced degree in engineering. They must be approved by the student's adviser, the graduate coordinator and the chairperson of the department.

502. Thermodynamics II. (3) Continuation of ME 386, with emphasis on availability, reversibility, Maxwell's equations and thermodynamic property relations. Prerequisites: ME 398. E 14 502 0 0910

503. Mechanical Engineering Laboratory. (2) 8L. Selected experiments designed to illustrate the methodology of experimentation as applied to mechanical and thermal systems. Experiments include the measurement of performance of typical systems and evaluation of physical properties and parameters of systems. Prerequisites: ME 402, 541, 622. E 14 593 0 0910

504. Instrumentation. (3) 2R; 3L. A more complete treatment of the measurement problem with careful examination of modern instrumentation systems, including dynamic behavior and nonlinearities. Criteria for design, synthesis and selection of instrumentation systems are included. Prerequisites: ME 402. E 14 594 0 0910

541. Mechanical Engineering Design II. (3). 2R; 3L. Application of basic design principles to the creative design of mechanical equipment. Problem definition, conceptual design, feasibility studies, design calculations, design considerations, development of creative solutions of current real engineering problems. Introduction to human factors, economics and reliability theory. Group and individual design projects. Prerequisites: ME 350 and 493 with a grade of C or above in both. E 14 541 1 0910

544. Environmental Engineering. (3). Theory, analysis, design and application of contaminant and air-conditioning systems based on psychrometrics, thermodynamics and heat transfer fundamentals. Emphasis is on design procedures for space air conditioning and heating and cooling loads in buildings. Prerequisites: ME 400 and 502. E 14 544 1 0910

548. Mechanical Engineering Projects. (1) A design, analysis or research project. Prerequisites: ME 301 and senior standing. E 14 548 3 0910

621. Fluid Mechanics. (3). Continuation of fluid mechanics of ME 400. Analysis of steady and unsteady, compressible, multi-dimensional flow fields with emphasis on continuity, momentum, and energy equations. Included are potential flow, boundary layer theory, and fluid machinery. Prerequisites: ME 400. E 14 541 0 0910

622. Heat Transfer. (3). A continuation of heat transfer of ME 400, steady and transient multi-dimensional conduction, free and forced convection, radiation, and combined heat transfer. Various analytical methods, analogies, numerical methods, and approximate solutions are discussed. Prerequisites: ME 400, 542, which must be taken concurrently. E 14 622 0 0910

630. Biomechanical Engineering. (3). Study of the physiology and biophysics of the living body from the viewpoint of basic mechanical engineering principles. Various artificial organs and life support systems are introduced and discussed. Prerequisites: ME 400 and Math. 550. E 14 630 0 0910

641. Thermal Systems Design. (2). Application of the preliminary design process for thermal systems such as building environment systems, refrigeration and transp or tation power plants. Design projects include thermal, mechanical and economical aspects. Prerequisites: ME 400 and 502. E 14 641 0 0910

648. Mechanical Engineering Projects. (1) A design, analysis or research project under faculty supervision. Problems are selected according to student interest. Prerequisite: ME 548. E 14 648 3 0910

659. Mechanical Control. (3). Modeling and simulation of dynamic systems. Theory and analysis of the dynamic behavior of control systems, based upon the laws of physics and linear mathematics. Concern is with classical methods of feedback control and design. Prerequisites: ME 402 and 439. E 14 659 0 0910

662. Mechanical Engineering Practice. (2). 4L. An exercise in the practice of mechanical engineering in which students engage in a comprehensive design project requiring the integration of knowledge gained in prerequisite engineering science and design courses. Open only to engineering students in their last semester of study. Prerequisites: ME 541 and 641. E 14 662 1 0910

670. Senior Thesis I. (1) A design, analysis or research project performed under faculty direction. Enrollment is limited to mechanical engineering students who are in the last two semesters of their studies and requires recommendation by a member of the department faculty and approval of the department chairman. Prerequisites: ME 541 and 641, which may be taken concurrently, and departmental consent. E 14 670 3 0910

671. Senior Thesis II. (1). A continuation of ME 670. Prerequisite: ME 670. E 14 671 3 0910

705. Design of Engineering Experiments. (3) Study of theoretical, analytical and statistical aspects of basic engineering experiments. Theories of test planning, data checking, analysis and synthesis, and evaluation are considered. Prerequisite: departmental consent. E 14 705 1 0910

741. Nuclear Engineering. (3) Study of the fundamental aspects of nuclear physics and its application in energy production, including nuclear reactor, neutron interaction, nuclear core physics, nuclear heat transfer and nuclear reactors. Prerequisites: ME 400 and Math. 550. E 14 741 0 0910

744. Advanced Environmental Engineering. (3). A continuation of ME 544, with an emphasis on building energy systems related to the design and selection of heating, ventilating and air-conditioning equipment and distribution sub-systems. Prerequisite: ME 544 or departmental consent. E 14 744 0 0910

749. Kinematics and Dynamics of Mechanical Systems. (3) Analysis and synthesis of mechanisms, force analysis of machines. Prerequisites: ME 439. E 14 749 0 0910

751. Special Topics in Mechanical Engineering. (1-3) New or special courses are presented under this listing. This course may be repeated for credit when subject material warrants. Prerequisite: departmental consent. E 14 751 0 0910

755. Intermediate Thermodynamics. (3) Laws of thermodynamics, introduction to statistical concepts of thermodynamics, thermodynamic properties, chemical thermodynamics, Maxwell's relations. Prerequisite: ME 502 or departmental consent. E 14 755 0 0910

758. Computational Heat Transfer and Fluid Dynamics. (3). Numerical solutions of steady and transient heat conduction, convection, potential flow and viscous flow problems. Prerequisites: ME 621 and 622. E 14 758 0 0910

767. Theory of Rational Design. (3) Decision design techniques including frequency, axiomatic and Bayesian formulation, statistical inference techniques, Jaynes' maximum entropy principle and error analysis. Prerequisite: departmental consent. E 14 767 0 0910

Courses for Graduate Students Only
801. Boundary Layer Theory. (3) Development of the Navier-Stokes equation, laminar boundary layers, transition to turbulence, turbulent boundary layers and an introduction to homogeneous turbulence. Prerequisites: Math. 651 or departmental consent. E 14 801 0 0910

845. Fracture. (3) Ductile and brittle fracture: phenomena and mechanisms, linear
846. Fatigue and Wear. (3). Fatigue of metals and nonmetals: phenomena, fatigue testing procedures and design methods. Survey of wear problems in engineering. Prerequisite: departmental consent. E 14 846 0 0910

851. Heat Transfer-Conduction. (3). Theory and measurement. Fourier's equation, steady and unsteady state with and without heat sources and sinks, and numerical methods. Prerequisite: ME 622, Math 651, or departmental consent. E 14 851 0 0910

852. Heat Transfer-Convection. (3). Free and forced convection in laminar and turbulent flow. Analysis and synthesis of heat transfer equipment are included. Prerequisite: ME 622 or departmental consent. E 14 852 0 0910

853. Heat Transfer-Radiation. (2). Radiative properties of real surfaces, configuration factor analysis, radiative transfer in participating media, exchange factor analysis, Monte Carlo methods. Prerequisite: ME 622 or departmental consent. E 14 853 0 0910

856. Advanced Thermodynamics. (3). Statistical thermodynamics, Boltzmann-Gibbs-Einstein and Fermi-Dirac statistics, calculation of thermodynamics properties, elementary kinetic theory, introduction to irreversible thermodynamics. Prerequisite: ME 502 or departmental consent. E 14 856 0 0910

860. Electromechanical Control Systems. (3). Description, analysis and design of electromechanical control systems, with an emphasis on actual devices. Prerequisite: ME 509 or departmental consent. E 14 860 0 0910

861. Similarity in Engineering. (2). Critical analysis of models and analogies as aids to engineering design. Prerequisite: departmental consent. E 14 861 0 0910

865. Rational Design Methods. (3). The principles of creativity, decision theory, modeling, optimization and reliability as applied to problems of engineering design. Prerequisite: departmental consent. E 14 865 0 0910

870. Special Topics in Mechanical Engineering. (3). New or special courses are presented under this listing on sufficient demand. Repeatable for credit when subject matter warrants. Prerequisite: departmental consent. E 14 870 0 0910

876. Thesis. (1-4), E 14 876 4 0910

878. Directed Studies. (1-4). Repeatable as approved in the graduate school plan of study. The student must write a paper. Students selecting the directed study option to fulfill the degree requirement need also to take an oral examination on the study made. Prerequisite: departmental consent. E 14 878 4 0910

Transfer of Credit and Extension Work
A maximum of 6 semester hours of graduate work may be transferred from another graduate school with the approval of the major adviser and the dean of the Graduate School, preferably before the work is taken. Correspondence courses are not accepted for credit, and extension credit is accepted only if the major department and the dean of the Graduate School give their approval and if the course is taught by Wichita State University graduate faculty. Only 6 hours of such work will be accepted. Six hours of graduate level courses in one department taken on a non-degree study basis will be accepted. Courses taken outside of one department before acceptance into the art education masters program may or may not apply toward the degree.

Courses for Graduate/Undergraduate Credit
S10G. Creativity. (3). The development of theories of creativity will be examined with special emphasis given to processes for eliciting creative responses and implications for art education. Various instruments used in evaluating creativity will be examined. Instructional strategies will include role playing, informal lecture, discussion, simulations, and discovery or inquiry techniques. F 14 510G 0 0831

S12G. Metal Processes for Jewelry Construction. (3). The emphasis in this course is on fabrication techniques, design analysis and function of jewelry designed and produced by students and acknowledged craftsmen. Repeatable once for credit. Prerequisite: Art Ed. 212 or instructor's consent. F 14 512G 0 0831

S14G. Aesthetic Inquiry. (3). The course will focus on contemporary trends in aesthetics relative to the visual arts. Students will be expected to write critical observations and interpretations in response to art work. Prerequisite: upper division art major. F 14 514G 9 0831

S15G. Developing Visual Materials for Art Education. (3). A production laboratory that concentrates on the use of technological equipment for making multimedia experiences (films, slides, tapes, projector, etc.) for art education students. Students engage in constructing units of visual learning. F 14 515G 1 0831

S16G. Art Education Practicum. (3). The development of art curriculum materials for secondary levels. Students will enroll in this course only under the supervision of an advisor and student teacher. Prerequisite: concurrent enrollment in IS 433. F 14 516G 0 0831

S17G. Student Teaching Seminar in Art. (1). The objective is to analyze problems encountered in the art classroom during student teaching. Concurrent enrollment in 7 hours of student teaching courses is required. Prerequisite: Art Ed. 351 or departmental approval for student teaching. F 14 517G 9 0831

S18G. For the Exceptional Child. (3). Follows regular art education principles with appropriate adaptations and teaching methods for exceptional children in school settings. Among the exceptionalities considered will be types of mental retardation; neurological impairment; emotional, visual, auditory, and physical handicaps. F 14 518G 0 0831

S19G. Seminar in Art Education. (3). Supervised study and research. Weekly, consultation and reports are required. Repeatable once for credit. Prerequisite: instructor's consent. F 14 519G 1 0831

S20G. Development of Art Understanding in the Educational Program. (3). Readings, observation and evaluative techniques in the development of concepts and materials for art understanding. Repeatable once for credit. Prerequisite: instructor's consent. F 14 520G 7 0831

S21G. Fiber and Fabric Processes. (1-3). Fiber processes and structures in traditional and experimental processes in woven forms and other structural techniques using natural and man-made fibers. Repeatable once for credit. Prerequisite: instructor's consent. F 14 521G 7 0831

S215. Research Problems in Art Education. (3). Orientation in research methods, findings and designs related to the analysis of studies and current problems in art education. Repeatable once for credit. Prerequisite: Instructor's consent. F 14 5215 7 0831

S26G. Work Shop... (1-3). Repeatable for credit. (The area to be covered is determined at the time the course is offered.) F 14 750G 2 0831

Courses for Graduate Students Only
S15. Individual Research Problems in Art Education. (1-4). Directed independent study in art education not normally covered in other graduate course work. Repeatable for credit. Prerequisite: instructor's consent. F 14 515 815 4 0831

S16-18. Thesis—Art Education. (1-3; 1-4). F 14 516-18G 7 0831

S19-20. Terminal Project—Art Education. (1-3; 1-4). F 14 519-20G 7 0831

Art History
Graduate Faculty
Professor: Mira P. Merriman
Assistant Professor: Stockton H. Garver (chairperson)

Although there is no graduate degree in art history, the following courses are available for graduate credit.

Courses for Graduate/Undergraduate Credit
S20G. Seminar In Art History. (3). Systematic study in selected areas of art history. Course content varies but individual areas are not repeatable for credit. Prerequisite: 3 hours of art history or departmental consent. F 15 520G 9 0831

S21Q. Italian Renaissance. (3). A study of the architecture, sculpture, and painting from the 13th to the 19th century. Emphasis is given to early developments in Florence and Siena and late developments in Rome. F 15 521Q 0 0831

S22G. Italian Baroque. (3). A study of Baroque painting, sculpture and architecture in Rome, Venice, and Bologna from 1600 to 1650, with emphasis on the Carracci, Bernini and Tiepolo. F 15 522G 0 0831

S23G. 18th and 19th Century European Art. (3). A history of European art from the Rococo through post-impressionism. F 15 523G 0 1003

S24G. 18th and 19th Century American Art. (3). A history of American art from the colonial period through the 19th century. F 15 524G 0 1003


S26G. Art Since 1945. (3). A study of the history of art in the United States from 1945 to the present, stressing the relationship between contemporary trends in criticism and artistic practice. F 15 526G 0 1003

S28G. Museum Techniques I. (3). Designed primarily for the graduate student in museum work. Includes specialized research related to administrative responsibilities of a museum: collection, exhibition, recording, preservation and financial activities. F 15 528G 0 1003

S30G. The Art of Classical Greece. (3). A study of painting, sculpture and architecture of Greece during the 5th and 6th centuries B.C. F 15 530G 0 1003

S31G. The Art of Hellenistic Greece. (3). A study of the painting, sculpture, and architecture of Greece during the Hellenistic period, 4th to 1st centuries B.C. F 15 531G 0 1003

S32G. Independent Study in Art History. (1-3). Work in a specialized area of the study of art history. Directed readings and projects. Prerequisite: instructor's consent. F 15 532G 0 1003

S33G. Seminar: Topics in Modern Art. (3). Selected readings and problems in art of the modern era. Course content varies but individual areas are not repeatable for credit. Prerequisite: instructor's consent. F 15 533G 9 1003

S38G. Bibliography and Information Retrieval in Art History. (3). A course to prepare art history majors for research on the graduate school level. The student is introduced to the various research resources, such as bibliographies, indexes, collections, concordances and compilations. Practical assignments for information retrieval provide the experience necessary for mastering research techniques. Prerequisite: 9 hours in art history. F 15 562G 0 1003

Courses for Graduate Students Only
S38G. Thesis. (2). F 15 582G 4 1003

S39G. Thesis. (2). F 15 582G 4 1003
Graphic Design

Graduate Faculty
Professor: Clark V. Britton, Jr. (chairperson)

Although there is no graduate degree in graphic design, the following course is available for graduate study.

Course for Graduate/Undergraduate Credit

730. Seminar in Graphic Design. (3). Supervised study and research. Weekly consultation and reports are required. Repeatable for credit. Prerequisite: departmental consent. F 17 730 9 1009

Professional Design

Graduate Faculty
Associate Professors: Richard W. St. John (chairperson), John D. Boyd.
Assistant Professors: Ronald Christ (graduate coordinator), Donald Gauthier, Ray Olivero, David Olson, Kathleen Shanahan

Master of Fine Arts

The Master of Fine Arts (MFA) is a graduate degree offered for qualified students planning careers as professional artists, either working independently or as artist-teachers in the college or art school level. The program is designed for a major in ceramics, painting, printmaking or sculpture.

Graduate/Undergraduate Credit

832. Independent Study. (1-3). Individually supervised work in a specialized area of the study of art history. Directed readings, research and projects. Repeatable for credit. Prerequisites: suitable preparation for graduate work in art history (e.g. BA or BFA in art history) and instructor's consent. F 15 832 3 1003

Course for Graduate/Undergraduate Credit

740. Seminar in Studio Arts. (2). Supervised study and research. Weekly consultation and reports are required. Repeatable for credit. Prerequisite: departmental consent. F 17 740 9 1009

Ceramics

Graduate Faculty
Professor: H. H. M. T. L. (chairperson), J. A. M. (chairperson), E. A. M. (chairperson)

Admission Requirements

Admission without deficiencies requires a 2.75 grade point average during the last two years of undergraduate study and a 3.25 overall grade point average in the major field of study, ceramics, painting, printmaking or sculpture. Also required is a Bachelor of Fine Arts (BFA), or the equivalent, that includes a minimum of 12 hours of art history, 15 hours in the major field and 20 hours of related work. Applicants should present examples of work for evaluation. They should submit 15 color slides (2" x 2") or glossy prints in their major and minor areas, including five slides in the minor area. All work should be identified with name, title, size and media. Applicants should also include a statement of their artistic philosophy. Also list all honors, awards, scholarships, exhibitions, special recognition for work in art, or services rendered through art. Three letters of recommendation should be forwarded. No application is considered until an application to Graduate School, transcripts, and the materials listed above are received. A stamped return envelope for all materials should be included.

Students holding degrees from institutions where requirements differ from those at Wichita State may be required to take undergraduate courses to make up deficiencies as determined by the major professor and the graduate art coordinator. Applicants should address all correspondence to the graduate art coordinator.

Degree Requirements

Minimum course requirements for completion of the MFA are summarized below. In addition, 45 of the 60 hours must be taken in courses numbered 800 or above.

Studio courses in the major area .................................................. 23 hours
Studio courses in a minor option area .................................... 15 hours
Courses in related areas (art history, seminar, directed reading) .................................. 12 hours
Terminal project in the major area ............................................. 10 hours
Total .......................................................... 60 hours

The terminal project consists of an exhibition of original student art work accompanied by either (1) a written report in thesis form or (2) the MFA terminal project report, which is a photographic documentation of the candidate's studio work (submitted in duplicate). Plan of Study

In order to define a program of study for the graduate degree, students must submit in triplicate the Plan of Study form listing the major field of study, major and minor option area, courses in related areas (art history, seminar, directed reading), and terminal project in the major area. The proposed content of the MFA exhibition is discussed and evaluated. The graduate committee's findings, upon final review and the MFA terminal exhibition, are filed by the major professor with the graduate dean at least two weeks before the end of the final semester. This procedure constitutes the terminal examination for MFA candidates.

Examinations

At the beginning of and during the semester in which the degree is to be conferred, two interviews between candidates and their committees are conducted. The proposed content of the MFA exhibition is discussed and evaluated. The graduate committee's findings, upon final review and the MFA terminal exhibition, are filed by the major professor with the graduate dean at least two weeks before the end of the final semester. This procedure constitutes the terminal examination for MFA candidates.

Policy Toward Student Art

The Division of Art reserves the right to select and retain a maximum of three pieces from the graduate exhibition. MFA printmaking candidates may be required to deposit one print from any or each edition for the University Collection.

Ceramics

Course for Graduate/Undergraduate Credit

570. Advanced Ceramics Studio. (3). Lab fee included. Advanced studio problems involving forming methods, glaze formation and firing procedures. Lecture periods are held involving advanced studies of ceramic materials and glaze formulation. Repeatable for credit. Prerequisite: SA (Ceramics) 370. F 16 570 1 1009

572. Advanced Handbuilding Techniques. (3). Lab fee included. Advanced study with emphasis on the area of refractory materials and polish forming methods. Lecture periods are held involving advanced studies of ceramic materials and glaze formulation. Repeatable for credit. Prerequisite: SA (Ceramics) 272. F 16 572 1 1009

574. Advanced Study of Kiln Methods. (3). Advanced study of kiln design and construction, with research in the area of refractory materials and polish forming methods. Lecture periods are held involving advanced studies of ceramic materials and glaze formulation. Repeatable for credit. Prerequisite: SA (Ceramics) 374. F 16 574 1 1009
575. Study of Ceramic Materials II. (3). Lab fee. Lectures and research covering clays, glazes and refractory materials. Reading assignments are made concerning physical and chemical characteristics of pottery materials. F 16 576 0 1009

576. Study of Ceramic Glazes II. (3). Lab fee. The study of glaze formulation and the color and crystalline effects of oxides on base glazes. Notebook, formulation records and laboratory work required. Prerequisite: SA (Ceramics) 575. F 16 576 1 1009

578. Independent Study in Ceramics. (1-3). A professional emphasis on technical or aesthetic research in the ceramics field. Available only for the advanced ceramics student with consent of instructor. Statement of intent must be submitted for faculty approval before registration. Prerequisite: departmental consent. F 16 578 0 1009

Courses for Graduate Students Only

800. Seminar in Art Topics. (3). Designed to explore areas of common interest in the arts. Supervised study, research, and discussion. Repeatable for credit. F 16 800 9 1009

870. Special Problems in Ceramics. (1-5). Research in advanced problems in ceramics. Repeatable for credit. F 16 870 3 1009

875. Advanced Research of Ceramic Materials. (3). Lectures and advanced research covering clays, glazes and refractory materials. Reading assignments are made concerning physical and chemical characteristics of pottery materials. Notebook and outside lab work are required. F 16 875 4 1009

876. Advanced Study of Ceramic Glazes. (3). The study of glaze formulation and the color and crystalline effects of oxides on base glazes. Notebook, advanced formulation records and laboratory work required. Prerequisite: SA (Ceramics) 875. F 16 876 4 1009

878-879. Terminal Project—Ceramics. (2 or 3 or 5; 2 or 3 or 5). F 16 878-9 4 1009; F 16 879 4 1009

Drawing

Courses for Graduate/Undergraduate Credit

545. Advanced Drawing Studio. (1-3). Drawing with a variety of media. Graphic problems relative to individual technical and aesthetic development are used. Critiques are given. Repeatable for credit. Prerequisites: SA (Drawing) 340 and 345F. F 16 545 1 1003

549. Independent Study in Drawing. (3). A professional emphasis on technical or aesthetic research in the drawing area. Available only for the advanced drawing student with consent of instructor. Statement of intent must be submitted for faculty approval before registration. Prerequisite: departmental consent. F 16 549 1 1009

Courses for Graduate Students Only

800. Seminar in Art Topics. (3). Designed to explore areas of common interest in the arts. Supervised study, research, and discussion. Repeatable for credit. F 16 800 9 1009

870. Special Problems in Ceramics. (1-5). Research in advanced problems in ceramics. Repeatable for credit. F 16 870 3 1009

875. Advanced Research of Ceramic Materials. (3). Lectures and advanced research covering clays, glazes and refractory materials. Reading assignments are made concerning physical and chemical characteristics of pottery materials. Notebook and outside lab work are required. F 16 875 4 1009

876. Advanced Study of Ceramic Glazes. (3). The study of glaze formulation and the color and crystalline effects of oxides on base glazes. Notebook, advanced formulation records and laboratory work required. Prerequisite: SA (Ceramics) 875. F 16 876 4 1009

878-879. Terminal Project—Ceramics. (2 or 3 or 5; 2 or 3 or 5). F 16 878-9 4 1009; F 16 879 4 1009

Painting

Courses for Graduate/Undergraduate Credit

550. Advanced Painting Studio. (1-3-6). Focus for the proponentally supervised student. Emphasis is on independent achievement and preparation for graduate study. Repeatable for credit. Prerequisites: Two semesters of SA (Painting) 350 and interview with instructor. F 16 550 1 1002

551. Advanced Watercolor Studio. (3). Sketchbooks and/or portfolio required. Prerequisites: SA (Painting) 251 and instructor's consent. F 16 551 1 1002

553. Independent Study in Painting. (3). A professional emphasis on technical or aesthetic research in the painting area. Available only for the advanced painting student with consent of instructor. Statement of intent must be submitted for faculty approval before registration. Prerequisite: departmental consent. F 16 553 1 1009

Courses for Graduate Students Only

800. Seminar in Art Topics. (3). Designed to explore areas of common interest in the arts. Supervised study, research, and discussion. Repeatable for credit. F 16 800 9 1009

870. Special Problems in Ceramics. (1-5). Research in advanced problems in ceramics. Repeatable for credit. F 16 870 3 1009

875. Advanced Research of Ceramic Materials. (3). Lectures and advanced research covering clays, glazes and refractory materials. Reading assignments are made concerning physical and chemical characteristics of pottery materials. Notebook and outside lab work are required. F 16 875 4 1009

876. Advanced Study of Ceramic Glazes. (3). The study of glaze formulation and the color and crystalline effects of oxides on base glazes. Notebook, advanced formulation records and laboratory work required. Prerequisite: SA (Ceramics) 875. F 16 876 4 1009

878-879. Terminal Project—Ceramics. (2 or 3 or 5; 2 or 3 or 5). F 16 878-9 4 1009; F 16 879 4 1009

Printmaking

Courses for Graduate/Undergraduate Credit

560. Advanced Printmaking Studio—Intaglio. (1-3). Intaglio, collagraph and mixed techniques. For the students interested in professional printmaking. The course offers specialization in color printing or black and white. Repeatable for credit. Prerequisites: SA (Printmaking) 180, 262 and 564. F 16 560 1 1002

561. Advanced Printmaking Studio—Lithography. (1-3). Lithography, black and white or color. For the student interested in professional printmaking, the course offers specialization in color printing. Repeatable for credit. Prerequisite: SA (Printmaking) 180, 262 and 564. F 16 561 1 1002

565. Independent Study in Printmaking. (3). A professional emphasis on technical and aesthetic research in the printmaking area. Available only for the advanced printmaking student with consent of instructor. Statement of intent must be submitted for faculty approval before registration. Prerequisite: departmental consent. F 16 565 1 1009

765. The Techniques and Materials of Printmaking. (3). Lecture, assigned reading and reports on the tools, materials, methods, and origins of basic printmaking techniques, including woodcut, linocut, intaglio, lithograph, collagraph and color printing. Special research project required in addition to assigned reading and reports. Prerequisite: 6 hours of printmaking. F 16 765 0 1002

Courses for Graduate Students Only

800. Seminar in Art Topics. (3). Designed to explore areas of common interest in the arts. Supervised study, research, and discussion. Repeatable for credit. F 16 800 9 1009

860. Special Problems in Printmaking—Intaglio. (1 or 3 or 5). Advanced printmaking on an individual basis. Emphasis is given to investigation combined with a craftsman-like approach. Techniques include all intaglio, relief and combined methods, black and white or color. Repeatable for credit. F 16 860 3 1002

862 & 863. Special Problems in Printmaking—Lithography. (1 or 3 or 5 or 3 or 5). Advanced printmaking on an individual basis. Emphasis is given to investigation combined with a craftsman-like approach. Techniques include all lithography and allied techniques, black and white or color. Repeatable for credit. F 16 862-3 1002 & F 16 863 3 1002

568-869. Terminal Project—Printmaking. (3 or 5 or 5 or 5). F 16 868 4 1002; F 16 869 4 1002

Sculpture

Course for Graduate/Undergraduate Credit

580. Advanced Sculpture Studio. (1-3). Sculpture in any medium, with an emphasis on individual development and creativity. Repeatable for credit. Prerequisite: SA (Sculpture) 380. F 16 580 1 1002

585. Independent Study in Sculpture. (3). A professional emphasis on technical or aesthetic research in the sculpture area. Available only for the advanced sculpture student with consent of instructor. Statement of intent must be submitted for faculty approval before registration. Prerequisite: departmental consent. F 16 585 1 1009

The following abbreviations are used in the course descriptions: R. stands for lecture and L. for laboratory. For example, 2R, 2L means 2 hours of lecture and 2 hours of lab
Division of Dance

While a formal major in dance at the graduate level is not offered, the following courses are available for graduate credit.

Courses for Graduate/Undergraduate Credit

501. Modern Dance IV. (3). Continuation of Dance 401. Advanced level. Emphasis on professional technique and performance quality. Repeatable for credit. Prerequisite: instructor's consent or by audition. F 25 505 1 1008

505. Dance Performance and Production. (3). Students receive practical experience in the organization and presentation of a dance concert. Class content may include design and construction of costumes and properties, design and execution of stage lighting and make-up, various areas of publicity, promotion and audio techniques. Students are also required to choreograph and perform and be responsible for all technical aspects of the concert to be performed at the end of the semester. Prerequisite: Dance 405. Concurrent enrollment in appropriate-level modern dance or ballet technique class required. F 25 505 5 1008


545. Methods of Teaching Dance. (3). Course in developing teaching skills for elementary schools, high schools, recreation centers, private and professional schools and universities, through lesson planning and in-class teaching practice. Prerequisite: Dance 401 or 410. F 25 545 5 1008

605. Advanced Dance Performance and Production. (3). Further work in the preparation and production of the end-of-term concert. Students are required to choreograph and perform and be responsible for all technical aspects of the concert. Prerequisite: Dance 505. Concurrent enrollment in appropriate-level modern dance or ballet technique class required. F 25 605 5 1008

625. Repertoire. (3). Study and performance of new choreography or those in repertoire. Cultivation of performance skills in varied dance styles. Repeatable for credit. Prerequisite: Dance 505. Instructor's consent or by audition. Concurrent enrollment in appropriate-level modern dance or ballet technique class required. F 25 625 5 1008

Division of Music

Graduate degree programs in the College of Fine Arts, Division of Music, are designed to extend and broaden the professional competency of men and women desiring careers in music. Students may pursue graduate studies in the musicology-composition, music education and music performance departments. While providing for advanced training in the specific skills of music, these graduate programs help to cultivate the student's capacity to think—to consider impersonally, dispassionately and without prejudice any problem related to the art of music.

Master of Music

The Master of Music (MM) allows for specialization in history-literature, piano pedagogy, theory-composition and performance. The general requirements for the degree are outlined below, while the specific information about the requirements for each specialization is given in the section concerning the department offering courses in the area of specialization.

Admission Requirements

Admission to the MM program requires the completion of an accredited baccalaureate program that includes a minimum of 42 semester hours in music, with at least 24 hours in a major field and 15 hours in a minor field. Approval of the MM specialization must be acquired during the first semester of enrollment.

Degree Requirements

The MM requires the completion of a minimum of 30 graduate hours, including a thesis or recital as indicated for the respective specializations. Of those hours, 12 must be in courses numbered 700 and 800 or above. Each Plan of Study must include 952, Introduction to Graduate Study; 800, Seminar in Music Theory, and 6 hours elected from the area of music history and literature, including 791-792, Seminar in Music History, or any of the period courses from 893, Music of Antiquity through the Renaissance, through 897, Music of the 20th Century. A minimum of 8 semester hours in the applicant's specialization must also be selected with the adviser's approval.

Master of Music Education

The Division of Music offers the Master of Music Education (MME) through its music education department. The requirements for this degree are explained in detail under the section of the Graduate School Bulletin concerning the music education department.

Examinations

All degree candidates in the Division of Music must pass an oral comprehensive examination. The oral comprehensive examination for thesis candidates includes a defense of the thesis.

Music Education

Graduate Faculty

Professors: James Lynn Hardy (chairperson), Donald Corbett
Associate Professor: Betty T. Weisbach
Assistant Professors: Thomas Fowler, Nancy L. Scriver

Master of Music Education

The Master of Music Education (MME) program allows for specialization in elementary music, choral music, instrumental music (with recital option), music in special education, and voice. Conducting options may be elected on the choral and instrumental programs.

Admission Requirements

Admission to the degree program in music education requires the completion of a Bachelor of Music Education, or its equivalent, from an accredited institution. Students holding baccalaureate music degrees other than the Bachelor of Music Education must satisfy public school certification requirements to qualify for full admission. Applicants without such certification are admitted on a conditional basis pending their attainment of public school teaching credentials. Approval of the MME specialization must be acquired.
Degree Requirements

MME programs range from 31 to 35 hours. The required core is 13 hours, 16 field speciality hours must be decided in consultation with an adviser and the chairperson of music education; four terminal options (recital, conducting project, thesis, research seminar) and an extra hours option are available. Of these hours, 2 must be in courses numbered 700 or 800. Each Plan of Study must include 852, Introduction to Graduate Study; 851, Psychology of Music; 871, History and Philosophy of Contemporary Music Education; and 830, Seminar in Music Theory. A minimum of 3 hours is also required from the area of music history and literature, including 791-792, Seminar in Music History; or period courses from 893, Music of Antiquity through the Renaissance, through 897, Music of the 20th Century.

Qualified students may request permission to present a formal graduate recital in lieu of other options; students should obtain approval from the appropriate performance area before completing 15 hours of graduate enrollment. A recital is not a terminal requirement option for the MME in special education.

Courses for Graduate Undergraduate Credit

606. Music Methods for Early Childhood Education. (3) Methods and materials for teaching music in the preschool and kindergarten classroom. Includes the development of the child's musical growth through singing, listening, rhythmic and creative activities; a survey of available materials; and development of playing, singing, and conducting skills. F 11 610A 0 0832

610A. Music Theater in the Schools. (2) Designed to teach students how to produce a musical in the secondary school. Includes selection of music, design elements (sets, costumes, lighting) and rehearsal techniques. F 11 610A 0 0832

611. Music for Special Education. (3) Open to any upper-division or graduate students and designed for the potential practicing music teacher, classroom teacher, or special education teacher. Identification of dysfunctioning children and current theory and practices in special music education are included. This course satisfies the requirement, effective September 1, 1981, that applicants for initial certification or renewal of secondary and/or elementary certification shall present a survey course or equivalent content from other courses in the subject area of exceptional children. This provision applies to Initial certification and renewal of secondary certification only. Grades K-12 F 11 611 0 0832

684. String Teaching Seminar. (2) Historical development of string instrument teaching. Problems involving traditional and recent techniques are studied. Special emphasis given to the elementary string movement. School/classroom methods, etc., are explored. F 11 684 0 0832

686. Marching Band Techniques. (2) A systematic study of different techniques with regard to organization, show development, instrumentation, music adaptation, drill construction, and script development. F 11 686 0 0832

690. Special Topics in Music. (1-4). For individual or group instruction. Repeatable with departmental consent. F 11 690 2 0832

732. Music in the Junior High School. (3) Includes administrative structures, the curriculum, adolescent development, teaching as behavior, and competencies needed for successful teaching of general and choral music in grades six through nine. F 11 832 0 0832

737A. Advanced Woodwind Techniques. (2) Special problems and techniques in the teaching of woodwind instruments. Current materials are surveyed. Prerequisites: Mus. Ed. 237 and 238 or equivalent. F 11 737A 0 0832

738A. Advanced Brass Techniques. (2) Special problems and techniques in the teaching of brass instruments. Current materials are surveyed. Prerequisite: Mus. Ed. 239 or equivalent. F 11 738A 0 0832

740A. Advanced Percussion Techniques. (2) Special problems and techniques in the teaching of percussion instruments. Current materials are surveyed. Prerequisite: Mus. Ed. 240 or equivalent. F 11 740A 0 0832

750. Music Education Workshop. (1-4). Repeatable for credit. F 11 750 2 0832

781. Cooperative Education. (1-8) A field placement which integrates course work with a planned and supervised professional experience designed to complement and enhance the student's academic program. Individualized programs must be formulated in consultation with and approved by appropriate faculty sponsors and Cooperative Education coordinators. Students enrolled in Co-Cop 781 will complete a workshop on scheduling patterns: Parallel, enroll concurrently in a minimum of six hours of course work in addition to their Co-Cop assignment; alternating, working full-time one semester in a field study and returning to full school enrollment the following semester; such students need not be concurrently enrolled in any other course. Prerequisites: successful completion of the freshman year and satisfactory academic standing prior to the first job assignment. May be repeated for credit. Offered CR/NC only. F 11 781 2 0832

784. Instrumental Music in the Elementary and Junior High School. (2) An examination of recent developments in instrumental music education and their implications for methods of teaching. F 11 784 0 0832

785. Instrumental Music Organization and Administration. (2) Problems of developing school instrumental music programs. F 11 785 0 0832

Courses for Graduate Students Only

821. Elementary Music Supervision. (3) Trends and techniques for the evaluation of various materials and techniques; and special projects in planning and executing an elementary music supervision. Prerequisite: Mus. Ed. 831 or instructor's consent. F 11 821 0 0832

822. Advanced Techniques in Special Music Education. (3) A course for the music education special emphasis MME candidate only. Research literature and current trends in special music education are studied. An evaluation of materials and techniques and special projects exploring the development of musical understanding in the dysfunctioning child are included. This course satisfies the requirement, effective September 1, 1981, that applicants for initial certification or renewal of secondary and/or elementary certification shall present a survey course or equivalent content from other courses, in the subject area of exceptional children. This provision applies to initial certification and recertification of music teachers only. Prerequisite: Mus. Ed. 402 or 404. F 11 822 0 0832

823. Special Music Education Practicum. (3) For the music education special emphasis MME candidate only. Supervised teaching is done in special education classrooms. A complement to Music 852; this course gives the special music education emphasis MME candidate experience in teaching. Repeatable for credit. Prerequisite: Mus. Ed. 822 or concurrent enrollment. F 11 823 2 0832

831. Developing the Child's Musical Understanding (3) Development of understandings necessary for the attainment of musical awareness in the child. The exploration of classroom experiences is directed toward the successful development of understanding through the application of basic learning principles. Prerequisite: Mus. Ed. 402. F 11 831 0 0832


841. Special Project in Music. (1-3) Individually supervised study or research, with emphasis upon the personal needs of the student. Repeatable with departmental consent. F 11 841 4 0832

842. Special Project in Music. (1-3) Individually supervised study or research, with emphasis upon the personal needs of the student. Repeatable with departmental consent. F 11 842 4 0832

843. Terminal Conducting Project. (2) Individually supervised project for those electing the conducting option on the instrumental or choral emphasis under the degree Master of Music Education. Prerequisite: instructor and departmental consent. F 11 843 4 0832

854A. Seminar in Instrumental Music Education Literature. (2) Critical analysis of literature for band, orchestra, and small ensembles in elementary and secondary schools. Current bibliography is used. Repeatable for credit. F 11 854A 9 0832

851. Psychology of Music. (2) An overview of music behaviors from a psychological perspective. Relevant literature concerned with psychoacoustics, melodic, rhythmic and harmonic perception and major learning theories are related to current trends in music education. F 11 851 0 0832

852. Introduction to Graduate Study. (3) See course listing under musicology-composition department. F 13 852 0 1006

854. Research Seminar in Music Education. (3) Continued application of techniques of research. MME candidate completion of a major research project is required. Prerequisite: Mus.-Comp. 852. F 11 854 9 0832
Music Performance

Graduate Faculty

Professors: Harrison Broughton, James J. Caesar, Joseph C. Combes, Jay C. Decker, George H. Gibson, William E. Mathis (chairperson), Walter J. Myers, Gordon B. Tremain (dean, College of Fine Arts)

Associate Professors: W. James Jones, Paul E. Reed, Robert L. Town, Vernon Lee Yenne

Assistant Professors: Thomas L. Allen, David Austin, Charlene Cox, Dorothy E. Crum, Myyles A. Mazur, Robert Reux, Frances K. Shelly, Nicholas E. Smith, Russell D. Widener

Master of Music with Emphasis in Performance

Admission to the Master of Music (MM) program with emphasis in music performance requires a performance background with a Bachelor of Music in the performance area of specialization or the equivalent. Background deficiencies must be satisfied before admission to candidacy is granted. All performance degree candidates must complete a satisfactory audition in their performance area of specialization. The audition should be completed as early as possible—no later than the end of the first semester of enrollment. Final acceptance in a performance specialty is dependent on approval of the respective performance faculty.

A formal graduate recital, in lieu of a thesis, must be presented in partial fulfillment of the requirements for the MM with emphasis in performance. In order to have permission to schedule a degree recital, students must satisfy the general performance degree expectations. Permission to schedule the recital must be obtained no later than the semester before the semester in which the recital is to be performed. The student’s performance repertoire and the recital program must be in accordance with the guidelines and expectations established by the performance area concerned.

Students studying in the MM with emphasis in performance should plan to be in residence during at least one fall or spring semester, since continuous study opportunities may not exist in summer session.

Master of Music with Emphasis in Piano Pedagogy

The Master of Music (MM) with emphasis in piano pedagogy gives primary emphasis to the development of tutorial concepts specific to keyboard skills and artistry, secondary, but significant, emphasis is placed on an acceptable demonstration of keyboard performance at the master’s degree level. The pedagogy option includes extensive preparation in the area of keyboard literature and stresses the relationship of performance to selected repertoire and teaching-skills development.

Admission Requirements

Students must have completed a Bachelor of Music in piano performance or its equivalent. All candidates must complete a satisfactory audition as early in the program as possible—in no event later than the close of the first semester of enrollment. Permission to pursue the degree is tentative pending approval of the audition. Deficiencies, if noted, must be satisfied before admission to candidacy for the degree.

Degree Requirements

The MM with emphasis in piano pedagogy requires the completion (minimum) of 32 graduate hours, including a graduate degree recital. Of these hours, 12 must be in courses numbered 700-800 and 12 must be in courses numbered 700-800 through 895, Music of the 20th Century, or courses from 895, Music of Antiquity through the Renaissance, through 897, Music of the 20th Century.

4. Pedagogy and literature courses as specified in the pertinent MM (piano pedagogy) curriculum guide.

Applied Music Private Study

731. (1) Repeatable for credit. Graduate. F 12 731 9 1004

732. (2) For majors only. Repeatable for credit. Graduate. F 12 732 3 1004

734. (4) For majors or students preparing for master’s degree recitals only. Repeatable for credit. Graduate. F 12 734 3 1004

Applied Music Abbreviations

A Bassoon
B Cello
C Clarinet
D Euphonium
E Flute
F French Horn
G Guitar
K Harp
N Organ
O Oboe
P Piano
R Soprano Saxophone
S Trombone
T Trumpet
U Tuba
V Viola
W Violin
X Saxophone
Y Voice
Z Electric Bass
Master of Music

Emphasis in Music History-Literature

Completion of a Master of Music (MM) with emphasis in history-literature requires a demonstrated reading proficiency in one of three languages: German, French, or Italian. Students may demonstrate proficiency by satisfactorily completing the Graduate School Foreign Language Test designed by the Educational Testing Service. Additional equivalent language courses, such as French 406 or German 401, at Wichita State. A thesis is also required for the degree.

The general requirements for the MM are summarized at the beginning of the Division of Music section of the Graduate School Bulletin.

Emphasis in Music Theory-Composition

Admission to the MM program with emphasis in theory-composition requires a Bachelor of Music with a major in theory-composition or the demonstrated equivalent. Background deficiencies must be satisfied before students may enroll in graduate composition courses. Applicants must also submit representative compositions for examination by the composition faculty; approval for admission to candidacy is contingent upon the candidate's demonstrated ability to complete a final project in composition.

Completion of the MM in emphasis in the composition requires at least one semester of 840A-C Seminar in the Techniques of Composition. In addition, students must complete a terminal project which must consist of one of the following: (1) a composition of major proportions, (2) a body of works in various media, or (3) a written thesis in the area of music theory. Composition majors may be required by the thesis committee to have a work or works performed publicly. The composition or compositions must be submitted in a minimum of two ink copies and bound in conformity with the procedures established through the Graduate School of Wichita State University. These ink copies represent high quality of musical manuscript and must be completed in the candidate's own hand.

The general requirements for the MM are summarized at the beginning of the Division of Music section of the Graduate School Bulletin.

Courses for Graduate/Undergraduate Credit

Musicology-Composition

Graduate Faculty

Professors: Douglas A. Lee, Walter A. Mays
Associates: Professors: David T. Childs (Chairman), John W. Thomson, Arthur S. Wolff

Musicology-Composition

Graduate Faculty

Musicology-Composition

Graduate Faculty

Professors: Douglas A. Lee, Walter A. Mays
Associates: Professors: David T. Childs (Chairman), John W. Thomson, Arthur S. Wolff

523. Form and Analysis. (2). Extensive analysis of the forms and formal processes of musical literature. Prerequisite: Mus.- Comp. 227. F 13 523 0 1004

531. Introduction to Electronic Music. (2). Basic techniques of electronic music instruction is directed toward musicians who wish to use the electronic medium in teaching, performing or composing. May be taken more than once with the consent of the instructor. F 13 531 3 1004

559-560. Applied Composition. (2-2). Individual study in advanced musical composition, with emphasis on writing for small ensembles in the smaller forms. Designed for theory-composition majors. Prerequisites: Mus.-Comp. 260, with consent of theory-composition area faculty and departmental consent. F 13 559 3 1004 & F 13 560 3 1004

561. 18th Century Counterpoint. (2). Conventional devices of the 18th century as found in the works of J. S. Bach. Prerequisite: Mus.-Comp. 228. F 13 561 0 1004

563-564. Collegium Musicum. (1-1). A laboratory in the editing, rehearsal and performing of early music. Prerequisites: instructor's consent. F 13 563 2 1005 & F 13 564 2 1005

582-583. Piano Literature. (2-2). Survey of the historical areas of professional piano repertoire. F 13 582 0 1006; F 13 583 0 1006

597-598. Organ Literature and Practice. (1-1). Performance of a wide range of literature for the instrument of all periods; study of organ design and construction and practice in aspects of service playing, organ playing, modulation, accompanying and improvisation. Required of all organ majors. Prerequisite: Mus.-Comp. 228 or departmental consent. F 13 597 0 1004; F 13 598 0 1004

623. Opera Literature. (2). A comprehensive survey of Italian, French, German, Russian, English and American opera literature from the 17th century to the present. Not limited to music majors. F 13 623 0 1006

624. Oratorio and Cantata Literature. (2). A study of the solo vocal literature of the larger sacred and secular form of the 17th century to the present. Not limited to music majors. F 13 624 0 1006

628. Voice Literature. (3). A comprehensive survey of early Italian arias, French chansons, German lied, contemporary English songs and Russian and Spanish literature. F 13 628 0 1006

641. Orchestration. (2). The study of instrumental idioms stressing scoring for various instrumental combinations, with an approach to the problems of full orchestra and band scores. Prerequisite: Mus.-Comp. 227. F 13 641 0 1004

643. Band Arranging. (2). Fundamental principles of arranging and scoring musical materials for various bands and wind ensembles. Prerequisite: Mus.-Comp. 227. F 13 643 3 1004

645. Choral Arranging. (2). Scoring for women's, men's and mixed choruses. Performance and analysis of student's arrangements in class and included. Prerequisites: Mus.-Comp. 226 and 230. F 13 645 0 1004

652. Choral Literature. (2). A historical survey of choral literature from the Renaissance to the 20th century. F 13 652 0 1006

659-660. Applied Composition. (2-2). Individual study in musical composition, with emphasis on writing for both small ensembles and larger groups in the larger forms. Prerequisites: Mus.-Comp. 560 and instructor's consent. F 13 659 3 1004 & F 13 660 3 1004

661. 18th Century Counterpoint. (2). Analysis and application of the contrapuntal composi-
position techniques of the 16th century. Pre-
requisite: Mus.-Comp. 227, F 13 665 0 1004

671. Chromatic Harmony. (2). Advanced
study of harmonic techniques of all periods
with special attention to the 19th century.
Analysis and writing are emphasized.
Prerequisite: Mus.-Comp. 227, F 13 671 0 1004

672. Contemporary Techniques. (2). Ad-
vanced study of music from impressionism
to the present, with emphasis on related
literature and creative writing. Prerequisite:
Mus.-Comp. 228, F 13 672 0 1004

685. String Literature and Materials. (2). A
study of chromatic harmony materials of all
the course and creative writing. Prerequisite:
Mus.-Comp. 227, F 13 685 0 1004

690. Special Topics In Music. (1-4). For
individual or group instruction. Repeatable
with departmental consent. F 13 690 2 1006

693. American Music. (2). A survey of
music in the United States from 1620 to 1920.
F 13 693 0 1006

750. Musicology-Composition Workshop.
(1-4). Repeatable for credit. Prerequisite:
Instructor's consent. F 13 750 2 1004

755. Basic Musicianship in the Secondary
School Curriculum. (2). An examination of
approaches to musicianship training at the
secondary school level, including the study of
fundamentals through musical analysis and
composition in various styles. F 13 755 0 1004

758. Teaching of Theory in the Community
Junior College. (2). Designed to prepare the
junior college theory teacher. Attention is
given to contemporary trends in music theory
and their application to planning courses of
study, evaluation of texts and pedagogical
techniques. F 13 758 0 1004

781. Cooperative Education. (1-8). A field
placement which integrates course work with
a planned and supervised professional expe-
rience designed to complement and en-
hance the students' academic program. Indi-
vidualized programs must be formulated in
consultation with and approved by appro-
priate faculty sponsors and Cooperative Ed-
ucation coordinators. Students enrolled in
Co-op 781 may follow one of two scheduling
patterns: parallel, enroll concurrently in a
minimum of six hours of course work in addi-
tion to their Co-op assignment; alternative,
working full-time one semester in a field study
and returning to full school enrolment the
following semester, such students need not
be concurrently enrolled in any other course.
Prerequisites: successful completion of the
freshman year and satisfactory academic
standing prior to the first job assignment. May
be repeated for credit. Offered Cr/NCr only. F
13 781 2 1006

791-792. Seminar in Music History. (3-
3). Areas of interest in music history are de-
veloped as time permits. No effort at a chron-
ological survey is made. Ideas evoking the
most interest and considered by the instructor
of the be a of the greatest professional benefit are
included when interest warrants. F 13 791 9 1006;
F 13 792 9 1006

Courses for Graduate
Students Only

830. Seminar in Music Theory. (3). An
analytical study of the materials used in musical
composition from antiquity to the present,
employing analytical approaches such as
Schenker, Hindemith and serial techniques.
The course is designed to develop analytical
perspective rather than compositional skills. F
13 830 0 1004

840A-C. Seminar in the Techniques of
Composition. (2). The nature of composi-
tional techniques is examined through se-
lected works in different media: (A) large en-
sembles, (B) small ensembles, and (C) solo
literature. Prerequisites: Mus.-Comp. 671,
672 and 641, or departmental consent. F 13
840A 9 1004; F 13 840B 9 1004; F 13 840C 9
1004

841-842. Special Project in Music. (1-3,
1-
3). Individually supervised study or research,
with emphasis on the professional needs of
the student. Repeatable for credit. Prereq-
usite: instructor's consent. F 13 841 4 1006;
F 13 842 4 1006

852. Introduction to Graduate Study.
(3). Techniques of research and development
of bibliography in music and music edu-
cation. The course must be elected the first
available semester of enrollment. F 13 852 0
1006

859-860. Advanced Composition. (2-
2). Original work in the large forms and a
continuation and expansion of Mus.-Comp.
659-660. Prerequisite: Mus.-Comp. 660 or
equivalent. F 13 859 3 1004; F 13 860 3 1004

875. Thesis Research. (2). F 13 875 4 1006

876. Thesis. (2). F 13 876 4 1006

893. Music of Antiquity Through the Ren-
aisance. (3). F 13 893 4 1006

894. Music of the Baroque Era. (3). F 13
894 0 1006

895. Music of the 18th Century. (3). F 13
895 0 1006

896. Music of the 19th Century. (3). F 13
896 0 1006

897. Music of the 20th Century. (3). F 13
897 0 1006

College of Health Professions

Offices: 400 Ahlberg Hall
Sidney D. Rodenberg, Dean
M. Diane Roberts, Associate Dean
William Harmon, Assistant Dean

Departments:
Dental Hygiene—Mary Martha Stevens, chairperson
Health Administration and Education—Walter Wentz, chairperson
Health Science—Stephen C. Gladhart, chairperson
Medical Technology and Cyto-
technology—James Jackson, chairperson
Nursing—Martha M. Shawver, chairperson
Physical Therapy—Mary Jo Mays, chairperson
Physician Assistant—J. Dennis Blessing, chairperson
Respiratory Therapy—Don Felker, chairperson

The College of Health Professions offers
graduate programs leading to a Master of
Health Science (MHS) with options for
emphasis in administration, education or
advanced clinical studies, and a Master of
Nursing (MN) with opportunities for
students to develop competency as admin-
istrators, teachers or in areas of clinical
concentration.

Admission to either of these programs of
study requires a bachelor's degree and the
fulfillment of requirements listed for
each program and elsewhere in the
Graduate School Bulletin

Master of Health Sciences

Graduate Faculty
Professor: Sidney Rodenberg (Dean, College
of Health Professions), Maurice Tinterow
Associate Professors: Kay Chen, Joan Cuthbertson,
Susan Gaston, Donna Hawley, Alicia Huckstadt,
James Jackson (Chairperson, Medical Technology
Department), Lawrence Miller (Chairperson, Respiratory
Therapy Assistant Program), Francine Nichols, Diane Roberts
(associate dean, College of Health Professions), Walter
Wentz (chairperson, Health Administration and
Education Department)
Assistant Professors: Arlo K. Barnes, Michael
Burke, JoLynne Campbell, Joe Carruthers, Ann Copeland, Marc Dicker,
Barbara Elliott, Don Falkner (Chairperson, Respiratory Therapy Department),
Stephen Grisham (Chairperson, Health Science Department; acting chairperson, Physician Assistant Program),
Helen Halstead, William Harmon (Associate Dean, College of Health Professions), Linda Hogan, Jeana
Jeffers, Susan Kruger, Carla Lee, Mary Jo Mays (Chairperson, Physical Therapy Department), Martha Shawver (Chairperson, Nursing Department), Mary Martha Stevens (Chairperson, Dental Hygiene Department)

This graduate program for health profes-
sionals is organized to meet the
needs of practicing health care
practitioners who hold the baccalaureate degree.
The departments of dental hygiene, health administration and education, medical technology and cyto-
technology, physical therapy, physician assistant and respiratory therapy participate in the MHS program through
faculty and curricular involvement, and many health professionals in these disciplines will find the MHS program applicable to their interests. The major roles within the health care system for which graduates will be prepared are those of educators, administrators, and practitioners.

Although opportunity for full-time study is available, the program has been developed especially for the employed part-time student, and a selection of required courses is available in the evening. The program must be completed within six years.

Admission Requirements
Admission to the MHS program requires that candidates be appropriately credentialed in a health field; however, students may request admission based on the applicability of the MHS degree to their goals and objectives. Admission requests based on professional necessity and background of health-related experience may be made to the director of the graduate program. Certain prerequisite courses and the advanced clinical studies emphasis have special requirements.

1. An applicant must have a baccalaureate degree from a regionally accredited educational institution and credentials (if available) in a health-related area. The basis on which credit is awarded for the baccalaureate degree must be consistent with the policies and procedures for the award of such credit at Wichita State University. Non-health-related credentials will be considered on an individual basis.

2. A student must have participated in the health field. A new baccalaureate student will not enter the program, but will be declared a candidate for the degree only after completion of the equivalent of one year of full-time professional experience in the health care field. No more than 9 hours of courses may be taken before acceptance as a candidate. Exceptions to this requirement must be approved by the MHS Council.

3. A personal interview is necessary with the master of health science director and a designated department coordinator, or, in the absence of an appropriate department, a designated advisor.

4. The student must complete an application and statement of interest.

5. The student must have earned a minimum GPA of 3.0 in the last 60 credit hours of undergraduate course work for full standing. Probationary status will be granted according to Graduate School guidelines.

6. Students may be required to meet additional requirements established by their departments.

Degree Requirements
The award of the MHS degree requires a minimum of 34 credit hours of graduate work with a thesis. At least 12 hours must be in courses numbered 700 and above. The non-thesis option requires a minimum of 37 credit hours.

The curricula are planned with study directed toward analysis, synthesis, and evaluation of the health care delivery system. Courses of study can provide comprehensive, in-depth review of the various forces acting upon the health care delivery system and the health care provider in their various roles. The director of the MHS should be contracted for detailed information on the curriculum.

A core of 12 hours is required of all students in the MHS program. The foundation courses address concerns common to all health professions and include current issues, research, and quality assurance in the health professions. Students then continue in an area of emphasis to achieve a greater understanding of the issues and research problems facing the health field.

Areas of Emphasis: The MHS director must be contacted for planning sheets which list all requirements for available emphasis areas of administration, education, and clinical studies. Specific courses are required within each emphasis, and electives are identified to meet the individual’s specific needs and career goals. Each student is assigned an adviser designated for each area of emphasis. These advisers work with the students in developing individual plans of study and in selecting and evaluating learning in light of career interests and goals. Supportive courses are drawn from many disciplines in the University, including business, education, psychology, biology, and chemistry.

Academic Standards: Students enrolled in the MHS program are expected to maintain grades of B or better in all required courses and a B average in all other course work attempted. Students in the clinical emphasis are required to complete an acceptable thesis. (Students in the education or administration emphasis should refer to departmental requirements.) The student must gain approval of the thesis proposal by the graduate adviser(s) and thesis committee and must pass a final oral examination covering the thesis topic.

In lieu of a thesis, the student may choose the practicum/project option in the education or administration emphasis. Seminars, reports and independent study assignments may be required for completion of the practicum/project, resulting in a major written report.

Nondegree Students: Students not seeking degrees may take some graduate courses listed under the MHS program as long as all prerequisites are satisfied and the enrollment has the approval of the graduate coordinator. Refer to the Graduate School criteria for nondegree students.

Health Administration and Education
The Department of Health Administration and Education participates in the Master of Health Science program, and several of its courses are included in the MHS core curriculum.

Courses for Graduate/Undergraduate Credit

503. Organization and Administration of the Health Care System. (3) Cross-listed as HAE 503. An analysis of the nature of health care and the inputs to health and health care delivery. The course discusses general systems theory and systems analysis in relation to health care. It emphasizes the interrelatedness of economic, political, and social aspects of the health services system and the forces shaping governmental policy in health care. Prerequisite: Prerequisite: HAE 503 or Econ. 202. H 15 503 0 1201

504. Health Economics. (3) Cross-listed as Econ 665. An analysis of health care systems in the United States, including the demand for and supply of health care services, the quantity, quality and pricing of health services; the need for insurance; and the role of the government in the health sector. Prerequisite: HAE 503 or Econ. 202. H 15 504 0 1202

505. The Politics of Health. (3) Cross-listed as Pol. Sci. 505. Designed to show how government in the United States makes decisions in the health field, to describe the political forces shaping governmental policy in health, and to analyze the arguments for and against an increased governmental role in health. Prerequisite: HAE 503, Pol. Sci. 121 or departmental consent. H 15 505 0 1202

507. Health Planning. (3). Designed to discuss strategic business planning in health services management. Includes a strategic management scheme that will accommodate change and encourage innovation and enhanced productivity. Presents an identification of the health sector, to describe the political forces shaping governmental policy in health, and to analyze the arguments for and against an increased governmental role in health. Prerequisite: HAE 503, Pol. Sci. 121 or departmental consent. H 24 507 0 1207

509. Health Care Operations Analysis. (3). An examination of methods for measuring the operational efficiency and effectiveness of health care organizations and medical care programs. Included are methods to analyze and evaluate current operations and approaches to plan better manpower, facility, technology, financial planning, and management control systems in a health setting. Prerequisites: HAE 503, Math. 111 or equivalent, Mgmt. 365, and junior standing. H 21 509 0 1209
510. Health Finance. (3). An examination of the technical principles of analysis and management for health care institutions. Emphasis is on understanding and applying general financial concepts to the health setting. Financial organization, sources of operating revenues, management of working capital, and cost accounting are considered utilizing examples for hospitals and other health organizations. Prerequisites: HAE 503 and Accpt 210 or equivalent. H 18 510 0 1202

590. Legal Aspects of Health Care Administration. (3). Cross-listed as Genon 590. An examination of the principles of law as applied to the health professions. Such items as release of information, subpoena, records and testimony, settlement of claims (insurance), doctor-patient relationship, and legal aspects of health care organizations and agencies are considered. Prerequisite: Junior standing or departmental consent. H 21 590 0 1202

605. Health Services Research. (3). Deals with intermediate statistical procedures and research designs that health professionals must understand in order to intelligently analyze research in the health care field and to conduct research themselves. This course covers the theoretical aspects of experimental, survey, and ex post facto research plus statistical techniques, including correlation coefficients, the t-test, chi square and two-way analysis of variance. Prerequisite: departmental consent. H 18 605 0 1201

684. Seminar in Health Care Administration. (3). In-depth discussion and analysis of selected topics in health care administration. Topics vary from semester to semester and include examination of specific financial, managerial and operational problems and characteristics of health service organizations and agencies. Prerequisites: HAE 503 and at least one other HAE course. H 21 684 0 1202

Health Sciences

The Department of Health Sciences participates in the Master of Health Sciences program, and several of its courses are included in the MHS core curriculum.

Courses for Graduate/Undergraduate Credit

501. Health Education Curriculum Development. (3). A course designed to assist health professionals in constructing health science curricula. Emphasis is given to identifying various curriculum models and applying educational principles, writing behavioral objectives and the acquisition of supplementary materials. Special emphasis is given to program development in school, community and patient education settings. Prerequisite: Junior, senior or graduate standing in one of the professional programs or instructor's consent. H 18 501 0 1201

506. Teaching and Learning Strategies in Health Science. (3). A course examining the various teaching-learning-health science knowledge and coupling these teaching strategies with the audiences and types of student bodies that will receive this knowledge. The nature of health care curriculum is examined in depth, as are procedures for developing and improving them. Health education curricula are explored. Prerequisite: departmental consent. H 18 506 0 1202

511. Neuroanatomy and Neurophysiology. (3). Study of the structure, physiology, and functions of the central and peripheral nervous systems. Prerequisites: H 510 or CDS 214. H 18 511 0 1202

521. Independent Study. (1-6). Offers reading and conference experience to complete a course requirement or provide enrichment in a specific area. Prerequisites: Upper division or graduate standing, or department chairperson's consent. H 18 521 0 1201

531. Applied Principles of Nutritional Support and Therapy. (3). A study of the principles of nutritional support and diet therapy. The dietary concerns of a variety of clinical disorders will be investigated. These include gastrointestinal disorders, diabetes mellitus, cancer, burns, obesity and weight loss, kidney and cardiovascular disease, preterm and enteral nutrition, and surgical conditions. Nutritional assessment, data interpretation, case plan development, record keeping and client communication are emphasized. Prerequisites: H 331 or instructor consent. H 18 531 0 0424

570. Interpretations of Sexuality for Health Professions. (3). Cross-listed as Nurs 570. Elective Strategies to assist clients and families to cope with sexual problems and disorders. Emphasis on relating varying interpretations of sexuality, nuclear and cultural aspects of sexuality to helping professionals. Open to nonnursing majors. H 18 570 0 1202

701. Issues in Health Care Administration. (3). An in-depth attack on current issues facing health professions. Topics may be presented in lecture, small groups, simulation and with guest speakers. Trends in health care economics, consumerism and current research findings will be presented and will include disease prevention and health promotion, ethics, consumerism and current research findings as they relate to current trends in the health professions. Prerequisite: Graduate standing. H 18 701 0 1201

703. Evaluation in the Health Professions. (3). This course presents the background and methods for evaluating performance in the health professions. The planning, development, and use of evaluation tools in the clinical setting are emphasized as well as the planning and use of evaluation tools in educational and professional settings. H 18 703 0 1201

704. Continuing Education in the Health Professions. (3). Planning, implementation, and evaluation of continuing education programs for the health professions. Review of existing continuing education models and consideration of alternative systems. H 18 704 0 1201

705. Health Services Research. (3). An examination of statistical research methods used by health care professionals and organizations. Topics include presentation of information, measures of location and variance, and simple and multiple regression designs. Prerequisite: Upper division statistics course or consent of MHS graduate coordinator. H 18 705 0 1201

710. Research Methods in Health Professions. (3). Examination of the research methodology as it related to the health profession. Included in the course is the identification of significant health care research problems, development of relevant hypotheses, critical evaluation of literature, and identification of methodology pertinent to the hypotheses developed. This methodology will address the selection of sample, measurement instrument, and research design. H 18 710 0 1201

712. Administration of Hospital-Based Education. (3). Study of hospital-based education, resources and requirements for providing institution-wide educational services, identification and analysis of educational needs, hospital's role in community health education, and program evaluation. H 18 712 1 1202

714. Quality Assessment and Assurance for Health Care Institutions. (3). Introduction to the organization and activities relevant to evaluation of services from a defined inside and outside the institution—roles, problems. Introduction to quality assurance problem-solving as a structured process. Prerequisite: Instructor consent. H 18 714 0 1201

750. Workshop in Health Related Professions. (1-4). An examination of relevant topics directly and indirectly related to the delivery of health care service. H 18 750 2 1201

800A. Seminar in Health Science. (1). Recent developments and issues affecting the financing, organization and management of health care facilities in both the public and private sectors of the nation's medical care system. Prerequisite: HS 701 or departmental consent. H 21 800A 0 1201

810. Practicum/Project. (3). A course designed to enhance and complement the academic experience of students pursuing the Master of Health Science degree. Through this learning experience provides an opportunity to link the student's academic studies with actual practice in direct observation and supervised participation in the administration of a multi-disciplinary health care organization. Students participating in this experience will carry out their assigned tasks under the guidance and direction of a faculty member of the College of Health Professions. The faculty person, the student may also be under the direction of a field instructor/preceptor from the host agency. H 18 810 2 1201

885. Thesis. (1-3). Repeatable to a maximum of 6 hours. Prerequisite: consent of thesis advisor. H 18 885 4 1201

Medical Technology

The Department of Medical Technology participates in the Master of Health Sciences program, and several of its courses are included in the MHS core curriculum.

Courses for Graduate/Undergraduate Credit

752. Method Evaluation and Selection. (3). This course will present an objective, practical approach to the evaluation of laboratory methodologies. This approach incorporates the use of statistical analysis, evaluation of technology, and clinical application. Prerequisites: MT 459, 469, 479 and 493, or equivalent, HS 705, or instructor's consent. H 18 752 0 1233

760. Hematologic Neoplasms. (3). This course deals with the etiology, pathophysiology, and morphology of hematologic neoplasms, and the health care practitioners' interactions with persons of those disorders. H 14 760 1223
765. Advanced Clinical Hemostasis. (3). Advanced studies in the mechanisms of hemostasis, pathological changes that can occur in the hemostatic mechanism, and the laboratory evaluation of these disorders. Prerequisites: MT 482 or instructor's consent. H 14 765 0 1223

770. Therapeutic Dimensions of Clinical Laboratory Science. (3). A study of the expanding role of the clinical laboratory in the monitoring of therapy and the patients' response to therapy. Areas to be addressed include hemotherapy and hemotherapy imagery, rejection phenomena, and chemotherapy including therapeutic drugs, electrolytes, vitamins, trace minerals, and antimicrobials. H 14 770 0 1223

775. Advanced Clinical Pathophysiology. (3). Advanced studies in the mechanisms of the disease process and pathological changes that can occur in various physiologic states. Prerequisites: HS 400 or 15 hours of biology, or instructor's consent. H 14 775 0 1223

790. Epidemiology and Infection Control. (3). 3R. A study of the expanding role of hospital personnel in the performance of hospital epidemiology and infection control. Areas to be addressed will include basic epidemiologic principles, basic considerations of hospital infections including investigations and surveillance, potential problem areas within the hospital environment, the role of the hospital laboratory and possible endemic and epidemic infections. Prerequisite: course in medical microbiology or instructor's consent. H 14 790 0 1223

800. Seminar in Laboratory Sciences. (1). Recent issues and advances in the field of clinical laboratory science including the areas of microbiology, chemistry, hematology, immunology, and immunohematology will be discussed. The student will be responsible for assigned topics, using current journal articles as resource material. Prerequisite: departmental consent. H 14 800 9 1223

890. Thesis. (1-6). Repeatable to a maximum of 6 hours. Prerequisite: consent of thesis adviser. H 14 890 2 1223

Physical Therapy

The Department of Physical Therapy participates in the Master of Health Sciences program, and several of its courses are included in the MHS core curriculum.

Courses for Graduate/Undergraduate Credit

500. Advanced Developmental Disabilities. (1). 1R; 1L. Elective. The emphasis of this course is on advanced evaluation and treatment of children with perceptual motor and/or developmental disabilities. Reading assignments, class discussions and laboratory experiences will be directed toward student's interests or particular needs. Prerequisite: PT 380. H 14 500 0 1212

505. Pathophysiology I. (4). The body's defenses and responses to diseases, disorder, and injury will be studied. The common disturbances of the heart, cardiovascular system, as well as the systems will be analyzed as to cause, effect, and treatment. Prerequisite: departmental consent. H 17 505 0 1201

605. Pathophysiology II. (4). The in-depth analysis of diseases, disorders, and injuries to the musculoskeletal system and to the nervous system will be presented. Pathophysiology, assessment, and treatment will be discussed. Prerequisite: departmental consent. H 17 605 0 1201

890. Thesis. (1-6). Repeatable to a maximum of 6 hours. Prerequisite: consent of thesis adviser. H 17 890 4 1212

Master of Nursing

Graduate Faculty
Associate Professors: Susan Gaston, Donna J. Hawley (director of graduate program), Alicia Hockett, Francine Nichols
Assistant Professors: Barbara Elliott, Helen Halstead, Jeannetta Jeffers, Susan Kruger, Martha Shawver (chairperson, nursing department)

The graduate program in nursing leads to the Master of Nursing (MN). This program is individualized to meet the needs and professional goals of each student. The curriculum has been developed especially for part-time (6 credit hours) study, although opportunity for full-time (9-12 credit hours) is available. Opportunities are provided to study systems of nursing for the individual, small and large groups, and to develop competency as an administrator or teacher, or in an area of clinical concentration.

Admission Requirements

In addition to the general university requirements for admission to graduate studies, the Department of Nursing requires:
1. A baccalaureate degree with a major in nursing from an NLN-accredited school. Applicants with degrees in other disciplines will be considered and counseled on an individual basis.
2. Admission to Graduate School at Wichita State University
3. Department of Nursing approval
4. Evidence of Registered Nurse license
5. Coverage by professional liability insurance, to be renewed annually
6. Graduate Record Examination scores
7. The Watson Glaser Test of Critical Thinking scores
8. One year of nursing practice following professional licensure.

Prerequisites: A course in statistics and a course in college level writing. Prerequisites: departmental consent. H 17 505 0 1201

Degree Requirements

Satisfactory completion of the following courses is the minimum requirement for the MN:

**Phase I (Theory and Foundation)**
- Nurs. 701, Orientation to Graduate Nursing Education (3)
- Nurs. 703, Foundations of Nursing (3)
- Nurs. 705, Nursing Research (3)

**Phase II (Clinical)**
- Nurs. 801, Therapeutic Dimensions of Clinical Nursing (3)
- Nurs. 804, Nursing Practicum (3)
- Nurs. 811, Foundations of Nursing Practice (3)
- Nurs. 812, Nursing Management Practicum (3)
- Nurs. 813, Foundations of Nursing Education (3)
- Nurs. 814, Nursing Education Practicum (3)
- Nurs. 817, Foundations of Clinical Concentration: Diabetes Mellitus (3)
- Nurs. 818, Clinical Concentration Practicum in Diabetes Nursing (3)
- Nurs. 819, Foundations of Clinical Concentration: Mental Health Nursing (3)
- Nurs. 822, Clinical Concentration Practicum in Mental Health Nursing (3)
- Nurs. 829, Foundations for Nursing of Children and Their Families (3)
- Nurs. 832, Practicum in Nursing of Children (3)
- Nurs. 833, Foundations of Clinical Concentration in Adult Nursing (3)
- Nurs. 834, Clinical Concentration in Adult Nursing (3)
- Nurs. 821, Thesis (3)
- Nurs. 823, Graduate Project (3)

**Total Hours in Nursing**
- Major: Minimum 26-30
- Total Hours Electives: Minimum 6
- Total Hours Required: Minimum 36

Phase I courses must be completed before beginning Phase II courses. The student, with an academic advisor, will determine the subsequent sequencing of course work. Ordinarily, the clinical courses of Phase II will be completed prior to Phase III (role preparation and scientific inquiry). Prerequisite courses are completed prior to enrollment in nursing courses; elective courses may be taken, with departmental approval, prior to enrollment in nursing courses.

* Students preparing for teaching or administration are required to complete one clinical nursing elective course (3 credit hours) in addition to the Phase II courses.
All students in Phase II of the curriculum will design and implement systems of nursing for the individual and small groups. The individual or those comprising the small and large groups will ordinarily be a population elected by the student through an approved agency/facility in the community.

Courses for Graduate/Undergraduate Credit

500. Assessment of Pediatric and Adolescent Clients. (3) 2R; 3L. This course will use lecture, demonstration, simulated laboratory, and practical experience in developing expertise in the assessment of pediatric and adolescent clients. Prerequisites: Nurs. 465; 466, or departmental consent. H 11 501 1 1203

501. Health Maintenance of the School Age Child. (3) 2R; 3L. This course will use lecture, class discussion, clinical laboratory, and practical experiences to enable the student to synthesize and apply theoretical concepts pertinent to health of school age children. Prerequisites: Nurs. 500 or its equivalent as determined by the Department of Nursing. H 11 501 1 1203

502. Organization and Management in the School Nurse Setting. (3) 2R; 3L. This course will use lecture, demonstration, and practical experience to enable the student to gain expertise in the organization and management of the school nurse setting. Prerequisite: Nurs. 500. H 11 501 1 1203

503. School Nurse Practicum. (2) 3L. This course will use a school setting in order to provide a practicum experience for the student in health assessment, organization and management, and health maintenance as they relate to the school age child. Prerequisite: Nurs. 502. H 11 503 1 1203


543. Women and Health Care. (3). This course examines the historical development of women's health care, health promotion, and the roles of women in the health care system and as consumers of health care. Self-care practices of women are examined and ways to promote positive health practices are studied. Open to non-nursing majors. H 11 543 0 1203

570. Interpretations of Sexuality for Health Professionals. (3). Cross-listed as HS 570. Elective. Strategies to assist clients and families to cope with sexual problems and disorders. Emphasis on relating varying interpretations of biological, psychological and cultural aspects of sexuality to the helping professions. Open to nonnursing majors. H 11 570 0 1203

701. Orientation to Graduate Nursing Education. (1). Graded SU only. Designed to familiarize students and society to graduate nursing education. Prerequisites: admission to graduate program in nursing and departmental consent. H 11 701 0 1203

703. Foundations of Nursing. (4). Study of the evolution of nursing through analysis of historical, theoretical, philosophical and ethical legal foundations of nursing. Selected major theories pertinent to health care are examined. Parameters of nursing are appraised in relation to political, economic, cultural and organizational factors affecting health care systems. Project for the future are explored. Prerequisites: admission to graduate program in nursing and departmental consent. H 11 703 0 1203

705. Nursing Research. (3). Building on an initial research experience, this course is designed to assist the student in understanding principles which govern research design, implementation and evaluation. Consideration is given to current issues in nursing research and their impact on the investigation of nursing problems. The researcher, the problems studied, and the consumer of research. Prerequisites: statistical course acceptable by the Department of Nursing, and graduate research course and departmental consent. Prerequisites or corequisites: Nurs. 701 and 703. H 11 705 0 1203

707. Research Seminar. (1). Designed to assist the student to complete a thesis proposal. Prerequisites: Nurs. 701, 703, 705 and departmental consent. H 11 707 0 1201

791. Special Studies in Nursing. (1-6). A course allowing students to engage in extensive study of particular content and skills directly or indirectly related to nursing practice. Prerequisites: admission to Graduate School and departmental consent prior to registration. H 11 791 0 1203

796. Nursing Practicum in Special Settings. (1-6). Opportunity for directed practice in various settings, including clinical specialties, nursing administration, nursing education and consultation. The student plans, in collaboration with a major advisor and preceptor, objectives and evaluative criteria for the experience. Prerequisites: admission to Graduate School, Nurs. 701, and departmental consent prior to registration. H 11 796 0 1203

799. Directed Readings in Nursing. (1-6). An opportunity for the student to engage in critical search of the literature in areas related to the profession and practice of nursing. Prerequisites: admission to Graduate School and departmental consent prior to registration. H 11 799 3 1203

802. Design and Management of Nursing Systems. (3). Analysis of nursing systems based on current theories and management strategies. Prerequisites: departmental consent and Phase I courses. H 11 802 0 1203

804. Nursing Practicum. (2-6). A clinical experience in selected settings that enables the student to implement a plan for nursing practice based on a personal clinicial study question, and conduct a professional development program. Prerequisites: departmental consent. Prerequisite or corequisite: Nurs. 802. H 11 804 2 1203

811. Foundations of Nursing Administration. (3). This course is designed to assist the student in acquiring theoretical knowledge of organizations. Consideration is given to current issues and research in nursing administration and impact on nursing practice. Prerequisites: departmental consent prior to registration. Prerequisites or corequisites: Phase II courses: Nus. 802 and 804. H 11 811 0 1203

812. Nursing Administration Practicum. (3 or 6). A practicum in a nursing administration setting in which the student, under professional guidance, can become directly involved in clinical and classroom teaching, curriculum development and participation in decision functions in higher education and continuing education. A seminar accompanies the field experience. Prerequisite or corequisite: Nurs. 812. H 11 814 2 1203

815. Foundations of Clinical Concentration. (3). Seminars will enable students to explore current clinical theory and research and to identify appropriate nursing systems for selected client population. Prerequisites: admission to graduate program in nursing, departmental consent, and Phase I courses. Corequisites: Phase II courses. H 11 815 0 1203

816. Clinical Concentration Practicum. (3 or 6). An experience in clinical nursing in which the student, under professional guidance, becomes directly involved in clinical and classroom teaching, curriculum development and participation in decision functions in higher education and continuing education. A seminar accompanies the field experience. Prerequisite or corequisite: Nurs. 816. H 11 816 1 1203

817. Foundations of Clinical Concentration: Diabetes Mellitus. In various nursing categories will enable the student to explore current clinical theory and research and to identify appropriate nursing systems for clients with diabetes mellitus. Special emphasis will be given to the psychological adjustment of the person with this disease. Material will support the role of the person with diabetes in the attainment and maintenance of optimal functioning. Prerequisites: departmental and instructor's consent. Phase II courses. Nus. 802, and 804. H 11 817 0 1203

818. Clinical Concentration Practicum in Diabetes Nursing. (3 or 6). An intensive clinical experience in which the student is expected to study, design, implement and evaluate systems for individuals or groups in the area of diabetes mellitus nursing management. A seminar will accompany the practicum. Prerequisite: Nurs. 817. H 11 818 1 1203

819. Foundations of Clinical Concentration: Mental Health Nursing. (3). Seminars will enable students to explore current clinical theory and research and to identify appropriate nursing systems for mental health clients. Prerequisites: departmental and in-
821. Thesis. (1-6). Graded S/U only. Opportunity for the student, in conjunction with the academic adviser and a three-member thesis committee, to design and conduct a formal research project. Prerequisites: departmental consent to registration. H 11 821 3 1201

822. Clinical Concentration Practicum in Mental Health Nursing. (3 or 6). An intensive clinical experience in which the student is expected to study, design, and implement nursing systems for individuals or groups in a specific area of mental health nursing. A seminar will accompany the practicum. Prerequisites: completion of Phase II courses (Nurs. 802 and 804) and Nurs. 819. H 11 822 1 1203

823. Graduate Project: Alternative to Thesis. (1-3). Graded S/U only. Opportunity to develop and pursue a scholarly project other than a thesis. This may take the form of a position paper, historical study, a philosophical paper or other type project developed in conjunction with the student's faculty adviser. Prerequisites: admission to Graduate School and departmental consent prior to registration. H 11 823 4 1201

824. Independent Study. (1-6). Independent study provides opportunity for the student to develop, in collaboration with a departmental faculty member, objectives and protocol for independent work related to the practice of nursing. Prerequisites: admission to graduate school and departmental consent prior to registration. H 11 824 3 1201

825. Practicum in Nursing of Children and Their Families. (3). Seminars will enable students to investigate current clinical theory and research and identify appropriate nursing systems for children and their families. Major influences on the children within the family system will have special emphasis. Prerequisite: completion of Phase II courses. H 11 825 0 1203

826. Practicum in Nursing of Children. (3 or 6). An intensive clinical experience in which the student is expected to study, design, and implement nursing systems for children and their families. A seminar will accompany the practicum. Prerequisite: Nurs. 826. H 11 832 1 1203

833. Foundations of Clinical Concentrations in Adult Nursing. (3). Examination of current clinical theories and research relevant to healthy and ill adults in this culture. Emphasis is placed on designing appropriate nursing care systems for adults by nurses with advanced preparation. Prerequisites: Phases I and II of graduate program; consent of instructor. H 11 833 0 1203

834. Clinical Concentration in Adult Nursing. (3 or 6). An intensive clinical experience in which the student is expected to study, design and implement nursing care systems or approaches for individuals or groups in specific areas of adult nursing. Areas may involve health maintenance of illness care of acutely or chronically ill adults. A seminar will be included as part of the practicum. Prerequisites: Phases I and II of graduate program, graduate pathophysiology. Nuts. 834 may be concurrent. H 11 834 I 1203

Fairmount College of Liberal Arts and Sciences

Offices: 200 LAS
Philip D. Thomas—Dean

Departments:
Administration of Justice—Ronald G. Iacovetta, chairperson; Galan Janeksela, graduate coordinator
American Studies—Gregory S. Sokja, chairperson
Anthropology—Lowell Holmes, chairperson and graduate coordinator
Biological Sciences—L. Raymond Fox, chairperson and graduate coordinator
Chemistry—B. Jack McCormick, chairperson and graduate coordinator; John B. McCarten, assistant graduate coordinator
Computer Science—Mary Edgerton, chairperson; Viswanathan Santhanam, graduate coordinator
English—Helen J. Throckmorton, chairperson; George Rowe, graduate coordinator
Geology—Daniel F. Merriam, chairperson; Daniel F. Merriam and John Gries, graduate advisers
History—John L. Harnsberger, chairperson; John D. Born, graduate coordinator

Journalism—Charles Pearson, chairperson
Linguistics—Alvin Gregg, coordinator
Mathematics—John Hutchinson, chairperson; Esmond Devrun, graduate coordinator
Minority Studies—John C. Gaston, chairperson
Modern and Classical Languages and Literatures—John H. Koppenhaver, chairperson; Eunice Myers, graduate coordinator
Philosophy—Deborah Soles, chairperson
Physics—Donald L. Foster, chairperson
Political Science—James W. McKenney, chairperson and graduate coordinator
Psychology—Charles Burdral, chairperson; Gary Greenberg, graduate coordinator
Religion—Michael Kalton, chairperson
Sociology/Social Work—Ronald Matson, chairperson; Jeff Riemer, graduate coordinator
Speech Communication—Bela Kiralyfalvi, chairperson; Keith Williamson, graduate coordinator

Administration of Justice
Graduate Faculty
Associate Professors: Ronald G. Iacovetta (chairperson)
Assistant Professors: Fred W. Benson, Donald L. Blazicek, Stephen E. Doeren, Wayne W. Dunning, James A. Fagin, Galan M. Janeksela (graduate coordinator)

Master of Administration of Justice
The Master of Administration of Justice (MAJ) requires a minimum of 36 semester hours with specializations offered in (1) criminalistics investigation and forensic science, (2) criminal justice administration, (3) corrections, (4) criminal justice education, (5) environmental protection, and (6) investigative reporting/journalism.

Admission Requirements
It is recommended that applications for admission be filed with the dean of the Graduate School by March 1 for consideration for admission in the fall semester. Evaluation for admission is based upon the applicant's undergraduate record, nature of academic background and results of the Graduate Record Examination. In addition, three letters of recommendation are required from persons familiar with the applicant's background and potential.
A minimum of 15 hours of work in administration of justice or approved equivalent is required (otherwise, deficiency requirements will be assessed). Limitations on the number of students admitted to the MAJ program each academic year may be established because of constraints imposed by the department's graduate teaching/advising capacity.

Degree Requirements

The MAJ requires a minimum of 36 hours, including 21 hours taken in courses numbered 800 or above. All students are required to take AJ 800, 801, 811 and 812 and to complete a thesis, practicum or internship requirement or a 36-hour course work option and a comprehensive exam. At their option, students specializing in criminalistics investigation may substitute an 800-level research methods course in chemistry, biological sciences, geology, physics or engineering for AJ 811, providing they have the approval of the administration of justice department's Graduate Faculty Committee.

Six established areas of specialization are contained in the MAJ program. The six specialized areas and courses needed to meet requirements in each are summarized below:

1. Criminalistics investigation and forensic science

   Required—AJ 804, 805, 821, 823

   Electives—8 to 12 additional hours in appropriate graduate-level course work from chemistry, biological sciences, geology, geography, physics and/or engineering, as determined by the department's Graduate Faculty Committee.

2. Criminal justice administration

   Required—AJ 806, 822, 832

   Electives—3 hours from AJ 633 or 639, unless taken at the undergraduate level, in which case an 800-level administration of justice elective may be taken.

   Electives—9 to 12 hours of electives in administration of justice or allied fields (with the approval of the department's Graduate Faculty Committee), with 6 hours at the 800 level and 3 hours from AJ 802, 803, 814, 823 or 824.

3. Corrections services

   Required—AJ 802, 803, 833

   Electives—3 hours from AJ 653, 656 or 660, unless taken at the undergraduate level, in which case an administration of justice 800-level elective may be taken.

4. Education

   Required—AJ 814, 824 and 9 hours of graduate-level course work in the College of Education, as approved by the department's Graduate Faculty Committee.

   Electives—6 to 9 hours of administration of justice graduate-level course work, with 3 hours from AJ 802, 803, 806, 822, 832 or 833.

5. Environmental protection

   Required—AJ 805, 827 and two courses from AJ 804, 805, 821, 822 or 832.

   Electives—12 hours at the graduate level in biological sciences, chemistry or geology, with the approval of the department's Graduate Faculty Committee.

6. Investigative reporting/journalism

   Required—AJ 804, 806, 820, 822, 832 or 833.

   Electives—6 hours of graduate-level course work in the Department of Journalism selected from Journ. 510, 570, 645 or 690.

A flexible program can also be outlined for students seeking the MAJ who do not want to specialize in any of the established areas of concentration if qualified academically. Such a program must include the department core, AJ 800, 801, 811, 812 and additional course work in administration of justice approved by the department's Graduate Faculty Committee.

Examinations

The department offers two tracks for completing the MAJ degree. Thesis, practicum or internship candidates are required to defend orally both their prospectus and their final project. Students electing the 36-hour straight course work track are required to pass a written comprehensive examination.

Facilities

Students in the Wichita State MAJ program have access to excellent computer and research facilities, as well as a criminalistics laboratory. Students may also use local, state and federal criminal justice agencies, including state and federal penitentiaries for field research or internships.

The Milton Helpern International Center for the Forensic Sciences serves as the major research resource of the Department of Administration of Justice and as an important repository of information relating to major forensic cases in the United States and abroad. Under the direction of Dr. William Eckert, the center serves as an important information center for forensic scientists and law enforcement agencies working to solve major criminal cases. In addition, it serves the need of students majoring in the department. Located in the Liberal Arts and Sciences Building, the center contains an extensive library material, tapes, and other documents pertaining to major forensic cases.

Courses for Graduate/Undergraduate Credit

501. Agency Administration II. (3). An intensive examination of a variety of emerging administrative and management innovative concepts. The processes related to the determination and implementation of management philosophy for the administration of justice agency and its personnel are explored. Prerequisite: AJ 201 or department's consent. A 29 501 0 2105

510. ADP in Administration of Justice. (3). A survey of use and potential of automated data processing in police, courts and correctional agencies. The ethical and legal problems confronting society and agencies of the justice system occasioned by the use of computers as information-gathering and storage instruments are examined, as well as the advantages of using ADP in basic and applied research in the administration of justice. A 29 510 1 2105

512. Research Methods. (3). An introduction to statistical methods, including experimental design, the analysis of statistical processes and related procedures. A study is made of the general methodology of research as it pertains to the administration of justice. A 29 512 0 2105

520. Criminal Evidence. (3). Concepts of criminal evidence rules as they pertain to kinds and degrees of evidence—procedure for admitting or excluding evidence, witnesses and privileged communications; the hearsay rule and its exceptions and judicial notice, burdens of proof, and presumptions. Emphasis is placed on the rules of evidence that govern the administration of justice process. A 29 520 0 2105

521. Law and the Administration of Justice Process. (3). Examination of recent judicial interpretations affecting legal process, rules of evidence, substantive law and administrative law. An in-depth study of statutory provisions is made, with emphasis on the conflict of laws and legal trends affecting administration of justice personnel. A 29 521 0 2105

533. Juvenile Justice. (3). An analysis of decision-making processes in juvenile justice, the content of juvenile law, Supreme Court decisions affecting juvenile justice, as well as specific select problems in the administration of juvenile justice. A 29 533 0 2105

560. Community Prevention Programs. (3). An analysis of typologies, philosophies and operations of existing and projected community-based crime prevention programs. Emphasis is also placed on a variety of governmental and nongovernmental community support and action programs, which,
642. Seminar on Investigation Theory and Practice. (3). Analysis and discussion of investigation techniques, with special emphasis on technological innovation and current judicial perspective. Prerequisites: AJ 343 and 344. A 29 646 0 2105

653. Field Corrections Techniques. (3). Analysis of the techniques of probation, parole, after-care supervision and related services. Special emphasis is placed on field corrections techniques as they relate to other segments of the administration of justice system. A 29 653 0 2105

655. Institutional Corrections Techniques. (3). An analysis of the techniques of institutional correctional practice, including diagnostic centers, halfway houses and other related treatment models. Special emphasis is placed on institutional corrections techniques as they relate to other segments of the administration of justice system. A 29 656 0 2105

660. Techniques of Prevention Program Development. (3). An analysis of the techniques utilized to organize and develop traditional and projected crime prevention and related governmental and nongovernmental sponsored programs. Special emphasis is placed on those involving existing community services resources and subsequently increasing their level of involvement in the administration of justice process. Prerequisite: AJ 2105 or departmental consent. A 29 660 0 2105

670. Seminar—Security, Theory and Practice. (3). An advanced seminar that emphasizes the interrelationships between theories underlying contemporary security practice. Special emphasis is placed on the application of instructor's theory that supports innovation. Prerequisites: AJ 370 or departmental consent. A 29 670 0 2105

680Q. Administration of Justice: Transactional and Comparative Perspectives. (3). Primarily designed to acquaint students with the interrelationships of law enforcement agencies, court systems, correctional facilities, juvenile treatment and crime prevention strategies employed by different societies throughout the world. The role of the United Nations National Conference on Crime Prevention and Crime Prevention is incorporated. A 29 680Q 0 2105

750. Workshops in Administration of Justice. (3). Prerequisite: AJ 1000 or instructor's consent. A 29 750 2 2105

781. Cooperative Education. (1-6). This course provides the student with a paid field placement that integrates theory with a planned and supervised professional experience designed to complement and enhance the student's academic experience. Students will work with a faculty member in the formulation and completion of an academic project related to the field in which the cooperative education experience must be an integral part of the student's graduate program. Individualized programs must be formulated in consultation with the student and the department cooperative education coordinator. Open only to AJ graduate students. Offered Cr/No Cr only. A 29 781 3 2105

Courses for Graduate Students Only

800. General Seminar on the Administration of Justice. (3). An advanced seminar that integrates major propositions, concepts, assumptions, history and methods from the various fields of administration of justice, including law enforcement, the courts, corrections and legislative control. The possible contribution of other community agencies is also explored. A 29 800 0 2105

801. Judicial Process and the Administration of Justice. (3). The review and discussion of local, state and federal criminal statutes and court decisions as they apply to the administration of justice process. A 29 801 0 2105

802. Advanced Field Corrections Methods. (3). An in-depth analysis of the methods of field corrections, including parole, probation and after-care supervision. Particular attention is given to the relationship that field corrections has to the larger administration of justice system. A 29 802 0 2105

803. Advanced Institutional Corrections Methods. (3). A course analyzing basic methods utilized in the organization and accomplishment of objectives in correctional institutions. Along with the more traditional correctional institutions, the seminar reviews methods utilized in diagnostic centers, halfway houses and other treatment models. A 29 803 0 2105


805. Seminar on Principles of Evidence and Proof. (3). An in-depth examination of different types of legal proof that are presented at court trials. Included in the examination are the mediums of witnesses, records, documents, concrete objects, etc. A 29 805 9 2105

806. Seminar on Agency Administration. (3). A comparative survey and analysis of administrative philosophy, problems, procedures, organizations and functions of effective agency organization. Administrative skills related to operations and personnel both within and outside federal and state agencies are considered. A 29 806 0 2105

811. Research Methods for the Administration of Justice. (3). The advanced study of selection and formulation of research problems; the study of design in the research project, including hypotheses and scale construction and sampling procedures; and a review of methods and the nature of the research process. Prerequisites: AJ 810 or equivalent. A 29 811 0 2105

812. Seminar on the Application of Criminological Theory. (3). An in-depth analysis of the major theories of criminology and of their importance to the criminal justice process. Emphasis is placed on the integration of a consistent, valid and individual framework of reference that is developed by the student. A 29 812 9 2105

814. Seminar on Critical Issues in Criminal Justice. (3). Emergent phenomena in the overall system of criminal justice are investigated to demonstrate the pertinence of
theory to practice. Examples of issues include role conflicts in law enforcement and corrections, police professionalism, its place and function; the offender as a client for services, and correction as a setting for research. A 29 814 9 2105

821. Seminar in Criminalistics. (3). Departmental fee. Review and discussion concerning techniques and ethics involved in the application of the physical sciences, including chemistry, biological sciences, mathematics and physical anthropology, to the investigation of crime. A 29 821 9 2105

822. Automated Data Processing in the Administration of Justice. (3). An advanced seminar concerning the methods, purposes, possibilities and problems encountered in the establishment and utilization of automated information and computerized data-processing systems. Special attention is given to the implications that automated information systems have upon police-public relationships. A 29 822 9 2105

823. Forensic Science Seminar. (3). The extensive examination of the wide field of issues in which medicine comes into relation with the law. It involves certification of the dead, the study of violent and unnatural deaths, scientific criminal investigation, drug detection, the duty of the medical examiner, procedures in courts of law and considerations of medical ethics or proper standards. A 29 823 9 2105

824. Seminar on Administration of Justice Education and Training. (3). Analysis of the specialized methods and techniques and technological innovations utilized in the administration of justice educational and training process. A 29 824 9 2105

827. Seminar on Environmental Protection. (3). An in-depth analysis of emerging federal, state and local legislation, judicial decisions and administrative policy related to environmental protection. The roles of the administration of justice agency and a variety of governmental and nongovernmental protective agencies are explored as related to prevention, investigation and enforcement processes of environmental protection. Special emphasis is placed upon the contribution administration of justice agencies can make toward development and implementation of effective environmental public protection and assistance programs. A 29 827 9 2105

832. Seminar on Agency-Community Relations. (3). An in-depth analysis of the role of agency administrators in community relations and related public officials in existing community programs. Special emphasis is placed upon a multiplicity of approaches for developing new and redefining existing lines of communications between the agency and its community. A 29 832 9 2105

833. Seminar on Youth and the Administration of Justice. (3). An analysis of the criminal justice process as related to the youthful offender. Emphasis is placed upon functional components, such as training of corrections personnel, community coordination, prevention of the offense, police-school relations and ethical and administrative and operational aspects of the administration of justice agency's efforts as done in the juvenile court. A 29 833 9 2105

851. Individual Directed Study in the Administration of Justice. (3-6). Individually directed advanced reading and/or research in special areas of interest in the field of administration of justice. Prerequisite: departmental consent. A 29 851 9 2105

852. Practicum. (3-6). Prerequisite: consent of departmental graduate committee. A 29 852 3 2105

853. Internship. (3-6). Prerequisite: consent of departmental graduate committee. A 29 853 3 2105

854. Thesis. (3-6). Prerequisite: consent of departmental graduate committee. A 29 854 3 2105

American Studies
Graduate Faculty
Professor: Jimmy M. Skaggs
Associate Professor: James H. Thomas
Assistant Professor: Jacqueline J. Snyder, Gregory S. Sojka (chairperson)

Although a complete graduate program is not currently available in American studies, coursework may apply toward a master's degree, if approved in advance of enrollment by the student's advisor, the chairperson of the American studies department and the dean of the Graduate School. Students working toward the Master of Arts in Liberal Studies (MALS) may use American Studies as one of their three fields of study.

Courses for Graduate/Undergraduate Credit

512. Twentieth Century Problems in American Studies. (3). An analysis and study of problems in various disciplines that influence American development. A 11 512 0 0313

520. American Studies Through the Media. (1-3). Courses created or coordinated by the Department of American Studies which are offered through various media—radio, television, newspapers, and television. Areas of American Studies emphasis vary from course to course. A 11 520 0 0313

521. The American Great Plains. (3). Both an environmental and cultural consideration of this area from an interdisciplinary approach concerning the settlement of the area and the results of its development. Literature, politics, folklore, and arts and other products of this region will be studied to gain a sense of this geographical and cultural entity. A 11 521 0 0313

522. The American Southwest. (3). The background of the settlement of the American Southwest, the impact of the comings of three different cultures and the evolving of a fourth culture. A 11 522 0 0313

540. American Folklore. (3). Cross-listed as Eng 540. A survey of the types and functions of unwritten traditional materials in the United States, including beliefs, tales, jokes, folk music, art, and crafts, including various ethnic varieties: the unwritten materials that form the uniqueness of American culture. A 11 540 0 0313

561. Directed Readings in American Studies. (1-3). Prerequisite: 6 hours of American Studies course work or its equivalent and instructor's consent. A 11 561 3 0313

602. Directed Readings in American Studies. (1-3). Prerequisite: 6 hours of American Studies course work or its equivalent and instructor's consent. A 11 602 3 0313

699. Seminar in American Studies. (3). Seminar in individual conferences organized around a problem or problems presented by a representative figure, theme or period, i.e., the Industrial Revolution, Reconstruction, western migration or Mark Twain and the Mississippi. Repeatable for a total of 6 hours of credit. Prerequisite: 6 hours of American Studies course work or its equivalent and instructor's consent. A 11 699 9 0313

750. Workshop in American Studies. (1). A course designed to provide specialized instruction using a variable format in a subject relevant to American Studies. Repeatable for credit. A 11 750 2 0313

Anthropology
Graduate Faculty
Professors: Lowell D. Holmes (chairperson and graduate coordinator), Arthur H. Rohn, Karl Schuessler

Associate Professors: Wayne L. Parris, Donald Blakely
Assistant Professors: Dorothy Billings, Kim Schneider

The anthropology department offers a course of study leading to the Master of Arts (MA) in anthropology.

Admission Requirements
Admission to the MA program in anthropology requires the completion of 15 semester hours of work in anthropology, a grade point average of 2.75 on a 4.00 scale) in the last 60 hours of credit and a 3.00 grade point average in anthropology.

Degree Requirements
The MA in anthropology requires the completion of 30 semester hours, including the presentation of a thesis. At least 12 of these hours must be in courses numbered 600 or above. Also required is at least one course from each of the following areas: cultural anthropology, archaeological, physical anthropology and linguistics. Students may be exempted from one or two of these areas if they can show proof of extensive undergraduate preparation in the area.

Specialty in Urban Anthropology
An MA program specializing in urban anthropology consists of at least 31 semester hours, including the completion
of the core required in the urban affairs graduate curriculum (see the public administration section of the Graduate School Bulletin). In addition, students must complete 15 hours of topical courses in cultural anthropology through such courses as Anthro. 519, 525, 526, 545, 760 and 837. Students must also present a thesis.

Examinations

All students except those in urban anthropology must pass a written proficiency examination in the fundamentals of anthropology. Students must complete a minimum of 15 semester hours of graduate work in anthropology before taking the examination. Students specializing in urban anthropology must pass a written examination covering cultural anthropology, anthropological methodology, and urban anthropology. Before a degree is granted, candidates must pass an oral defense of their thesis. A foreign language examination is contingent upon the nature of the thesis topic.

Courses for Graduate/Undergraduate Credit

501. Approach to Archaeology. (3). Lab fee. An introduction to the problems of studying past cultures. Special attention is focused on methodology and techniques available to archaeologists and the theoretical rationale leading to sound interpretation of the structure of extinct cultures. Prerequisite: Anthro. 1010 or 1240 or equivalent. A 28 501 0 2203

502. Introduction to Archaeological Laboratory Techniques. (1-3). Maximum of three hours. An introduction to the laboratory processing of archaeological materials. Students will obtain direct experience in all phases of preparing excavated materials for analysis including cleaning, preserving, numbering, and cataloging of ceramic and artifact materials and other remains. Prerequisite: Anthro. 1010, 1240, or 305Q. A 28 502 1 2203

506. Peoples of the Pacific. (3). A survey of the races, languages and cultures of non-European peoples of Polynesia, Micronesia and Indonesia. A 28 506 0 2203

508Q. Ancient Civilizations of the Americas. (3). A cultural survey of the Aztec, Maya and Inca. Prerequisite: Anthro. 102 or 124. A 28 508Q 0 2212

511. The Indians of North America. (3). A survey of tribal societies and native confederacies of North America from the prehistoric through the historic period. Prerequisite: Anthro. 101Q or 1240. A 28 511 0 2212

513. Archaeology of East Asia. (3). A broad survey of archaeology throughout eastern Asia from the early hominid fossils at Peking and Java to the development of Chinese and Southeast Asian civilizations. Special attention will focus on China (through the Han Dynasty), Southeast Asia and Australia/New Guinea. Recent archaeological finds of the Peoples' Republic of China will be included. Prerequisite: one 3 hour course in archaeology or consent. A 28 513 0 2203

514. Anthropological Perspectives in Geontology. (3). Prerequisite: Geol. 514. An anthropological analysis of the latter stages of the life cycle with historical and cross-cultural perspectives. Prerequisite: Anthro. 1010 or 1020 or 1240 or Soc. 211Q. A 28 514 0 2202

519. Applying Anthropology. (3). The application of anthropological knowledge in the solution of social problems in industry, public health, and tribal organizations. Prerequisite: Anthro. 1020 or 1240. A 28 519 0 2202

521. Performing Arts in Other Cultures. (3). The performing arts are highly developed in many cultures around the world in dance, music, song, and in the dramatic presentations of ceremony and pageantry. These will be studied on film, tape, and records and in live performances available locally. Prerequisite: Anthro. 1020 or 1240 or instructor's consent. A 28 521 0 2202

522Q. Primitive Art. (3). A survey of the arts of preliterate peoples, with special attention to their function in the cultural setting. Prerequisite: Anthro. 1020 or 1240. A 28 522Q 0 2202

525. Culture Change and Modernization. (3). Examination of the social-cultural change in the past and present with emphasis on processes of modernization in nonindustrial societies. Prerequisite: 6 hours of anthropology. A 28 525 0 2202

526. Social Organization. (3). A survey of the varieties of social organization among nonindustrialized peoples throughout the world. This course deals with family systems, kinship, residence patterns and lineage, clan and tribal organizations. Prerequisite: 6 hours of anthropology. A 28 526 0 2202

542. Women in Other Cultures. (3). Cross-listed as WS 542. A course dealing with the place of women in primitive and other non-Western societies, in various aspects of cultural contact, conflict, resistance and renaissance. Prerequisite: Anthro. 101Q or 1240, or equivalent. A 28 542 0 2212

545. Economic Anthropology. (3). The study of methods of production, division of labor, the concept of money and property allocation in tribal societies. An emphasis is placed on kinship units as units of consumption and production. Prerequisite: 6 hours of anthropology. A 28 545 0 2202

555. Fossil Evidence for Human Evolution. (3). A detailed examination of man's evolutionary history as evidenced by fossil remains and a survey of various interpretative explanations of the fossil record. Prerequisite: Anthro. 101Q or Biol. 233 or equivalent. A 28 555 1 2202

556. Human Variability. (3). A critical examination of the biological aspects of contemporary human adaptation. Prerequisite: Anthro. 101Q and Biol. 100. A 28 556 1 2202


580. Human Paleoecology. (3). A thorough review of the ecological approach to cultural history through the practice of archaeological and multidisciplinary studies. Problem formulation, specialized techniques, and interpretation will be emphasized. Prerequisite: Anthro. 501 or equivalent or instructor's consent. A 28 580 0 2203

597. Topics in Anthropology. (3). Detailed study of topics in anthropology, with particular emphasis being made according to the expertise of the various instructors. A 28 597 3 2202

600. Forensic Anthropology. (3). Cross-listed as AJ 600. The course encompasses the area of criminal investigation involving biological evidence: blood, hair, fingerprint, dentition and skeletal system. It covers procedures of collection, preservation, marking, transportation, referral, laboratory analysis, classification and identification, with a emphasis on anthropological interpretation. A 28 600 0 2202

602. Archaeological Laboratory Analysis. (1-3). Students analyze archaeological materials, including ceramic, lithic, faunal and vegetal remains according to accepted methods. Students learn to apply standard methods of identification and modes of interpretation to the materials to produce an acceptable archaeological interpretation. A 28 602 0 2203

606. Museum Methods. (3). An introduction to museum techniques relating to the acquisition, collation and identification of artifacts, such as accessioning, cataloging, documentation, presentation and storage. Emphasis is given to current trends in museum science concerning purpose, function and relevance of museums, as well as career opportunities. Prerequisite: instructor's consent. A 28 606 0 2202

607. Museum Exhibition. (3). Contemporary philosophy of exhibition design and the application of recent concepts to the planning and installation of an exhibit. Prerequisite: Anthro. 606 or instructor's consent. A 28 607 5 2202
611. Southwestern Archaeology. (3). A comprehensive survey of the prehistoric and historic cultures and changes covering 12,000 years. Prerequisite: 6 hours of anthropology and departmental consent. A 28 611 0 2203

612. Indians of the Great Plains. (3). An integrated cultural study of the prehistoric period to the present. Prerequisites: 6 hours of anthropology and departmental consent. A 28 612 0 2212

613. Archaeology of the Great Plains. (3). The archaeology of the Great Plains area from the earliest evidence into the historic period. Prerequisite: 6 hours of anthropology including at least one anthropology course. A 28 613 0 2203

636. Advanced Studies in Archaeology and Ethnology. (3). Special area and theory problems in a historical approach to culture. Prerequisite: 6 hours of anthropology and departmental consent. A 28 636 0 2202

647. Theories of Culture. (3). A survey of the man theoretical movements in cultural anthropology, including both historical and contemporary schools of thought. Prerequisite: 6 hours of anthropology. A 28 647 0 2202

648. Contemporary Theories in Anthropology. (3). This course deals with development of anthropological theory since World War II: neoevolution, cultural ecology, ethnoscience (componental analysis, cognitive anthropology), structuralism, ethnology, radical anthropology and others. Prerequisite: 6 hours of anthropology. A 28 648 0 2202

651. Language and Culture. (3). Cross-listed as Ling. 651. An introduction to historical and descriptive linguistics. The course deals with the phonology of communication, lexistics and linguistic determination. Prerequisite: 6 hours of anthropology. A 28 651 0 2202

656. Advanced Physical Anthropology. (3). An in-depth coverage of selected topics in physical anthropology, including population dynamics, primatology, growth and development, and current research methods. Prerequisite: Anthro. 651 or instructor's consent. A 28 656 0 2202

657. English Syntax. (3). Cross-listed as Eng. 657 and Ling. 657. Examination of aspects of the structure of English and their relation to linguistic theory. Prerequisite: Eng. 315 or Ling. 577, or Anthro. 577 or instructor's consent. A 28 657 0 1505

690. Field Methods in Anthropology. (3-6). A maximum of 6 hours can be counted as anthropology hours toward either degree. A course that instructs the student in the methods of field anthropology through actual participation in a field research program. The project depends upon the specific Summer Session and varies from year to year. Prerequisite: Instructor's consent. A 28 690 2 2202

749. Educational Anthropology. (3). A course dealing with the philosophical concepts of anthropology and their application to the study of the elementary and secondary schools. The course explores the nature of subcultures in American society and the problems they pose for the classroom teacher. A course for education majors and graduate students. Cannot be used to meet requirements of the interdisciplinary Prog. in Anthropology. A 28 749 0 2202

750. Workshop. (1-4). Short-term courses with special focus on anthropological problems. Prerequisites: instructor's consent. A 28 750 2 2202

760. Urban Anthropology. (3). Comparative study of urban life in the United States and the world. Focus on urbanization as a process and on urban anthropology. Prerequisites: 6 hours of anthropology or urban affairs, or instructor's consent. A 28 760 0 2202

Courses for Graduate Students Only

801. Seminar in Archaeology. (3). Comprehensive analysis of archaeological data, with emphasis on theoretical problems of interpretation and reconstruction. Repeatable up to 6 hours. Prerequisite: Anthro. 501 or departmental consent. A 28 801 9 2203

802. Methods in Anthropology. (2-3). Designed to develop abilities in the conception and interpretation of anthropological problems, interview and observation techniques, as well as more specialized methods such as摄影graphy, tape recording, and interview. Repeatable up to 6 hours. Prerequisite: departmental consent. A 28 802 9 2202

820. Seminar in Physical Anthropology. (3). Analysis of fossil, skeletal and modern biological populations. Special emphasis is placed on methods and techniques of analysis with consideration of current anthropological models. Prerequisite: Anthro. 556, or 557, or departmental consent. A 28 820 9 2202

837. Seminar in Cultural Anthropology. (3). Intensive study of advanced theoretical questions in cultural anthropology. Repeatable up to 6 hours. Prerequisite: 5 hours of anthropology. A 28 837 9 2202

847. Colloquium in Anthropology. (1-5). Grade only. Repeatable for a maximum of 6 hours. Prerequisite: A 30 hours of anthropology. A 28 847 9 3302

848. Recent Developments in Anthropology. (3). A review of the latest discoveries and interpretations in the science of man. Repeatable up to 6 hours. Prerequisite: 5 hours of anthropology. A 28 848 9 2202

870. Independent Reading. (2-3). Repeatable up to 6 hours. Prerequisite: departmental consent. A 28 870 3 2202

Biological Sciences

Graduate Faculty

Distinguished Professor: Alvin Sarachek

(Distinguished Professor of Natural Sciences)

Professors: L. Raymond Fox (chairperson and graduate coordinator), Harry D. Rounds, George H. Sweet

Associate Professor: Donald A. Dietler, Victor B. Eichler, Glendon R. Miller

Assistant Professors: John T. Bish, Karen L. Brown, Virginia M. Grigio, Louis J. Guillette, Ralph L. Peters, Arthur Youngman

Master of Science and Areas of Specialization

The Master of Science (MS) program offered by the Department of Biological Sciences allows for specialization in a variety of subdisciplines within the broad areas of cellular, organismic, populational and environmental biology.

Admission Requirements

Admission as a full standing student to the MS program in biological sciences requires: (1) the completion of 24 undergraduate semester hours in biological sciences and 15 semester hours of course work in chemistry; (2) an overall grade point average of at least 2.75 (4.00 scale) for the most recent 60 semester hours completed; (3) a grade point average of at least 3.00 (4.00 scale) for all undergraduate biological sciences course work; (4) three letters of reference from science faculty; and (5) conditional acceptance by a member of the graduate faculty, based on the availability of research space and the student's academic background.

Degree Requirements

The Department of Biological Sciences offers two options for the MS.

Option I. The first option requires 30 hours of graduate work, including the presentation of a thesis. Of the 30 hours, 12 must be taken in courses numbered 700 or above. In addition, all students must give evidence of proficiency in at least one research tool, usually consisting of a demonstrable knowledge of a modern foreign language or completion of an acceptable course in statistics or integral and differential calculus. Students select the appropriate research tool at the recommendation of their graduate advisor, and the tool must be approved by the department at the time they are admitted to candidacy for the degree.

Option II. The second option is only open to applicants certified in some professional field, such as teaching, nursing or medical technology. Option II requires the completion of 36 hours of graduate work, including 12 hours in courses numbered 700 or above and a departmentally approved thesis based on library work. Option II excludes the requirements of research and proficiency in a research tool. However, where appropriate, up to 3 hours of credit in research, Biol. 890, may be counted toward the degree.
All incoming graduate students are assigned to an adviser by the graduate coordinator. With the aid of their advisers, students are responsible for completing the following no later than the fourth week of the third semester of enrollment or the completion of 12 hours, whichever comes first: (1) formation of a thesis committee; (2) submission of a research prospectus to the graduate coordinator, and (3) submission of a Plan of Study to the Graduate School.

Examinations
Scores of the Graduate Record Aptitude Test and Advanced Test in Biology must be submitted before students can be admitted to full standing status in the degree program. A satisfactory oral defense of the thesis is also required.

Nonmajor Courses
(May not be used to satisfy the requirements for the major)

Courses for Graduate/Undergraduate Credit

509G. Foundations of Human Heredity. (4). (Offered spring semester only.) Introduction to the study of the principles and significance of developmental, transmission and population genetics of humans. Attention given to errors of metabolism and development and the roles of genetic counseling and genetic engineering in management. Course is intended for students majoring outside of the natural sciences and does not carry credit toward a biological sciences major or minor. Students earning graduate credit will be expected to produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: junior standing. A 12 509G 0 0417

518O. Biology of Aging. (3). Cross-listed as Garon, 518. An introduction to the phenomenon of aging, including a survey of age-related changes in the structure and function of the organism and the relationship of genetics, nutrition and environmental factors to aging. Students earning graduate credit will be expected to produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. RECOMMENDED. A 12 518O 0 0410

Interdivisional Courses

Courses for Graduate/Undergraduate Credit

573. Statistical Applications in Biology. (3). (Offered spring semester only.) A course designed to supplement Stat. 370 by providing experience with practical applications of statistical theory to biological data. The course will include techniques for analyzing data derived from both the primary literature and independently designed research projects. The design of experiments to answer specific hypotheses, the treatment of non-normally distributed data sets and non-homogeneous experimental test units, and the use of packaging methods will be emphasized. Access to calculators with at least two memory banks is strongly encouraged. Students earning graduate credit will be expected to complete an additional statistical analysis assignment involving the use of the computing facilities. Prerequisites: Stat. 370. A 12 573 2 0419

584. Genetics. (4). The mechanisms of heredity and variation in plants and animals with a critical review of the concept of the gene. Students earning graduate credit will be expected to complete reading assignments in the technical literature resulting in several written reports or a comprehensive term paper chosen in consultation with the instructor. Prerequisite: Biol. 204. A 12 584 0 0422

666. Special Topics in Biochemistry. (3). (Offered spring of even-numbered years.) A course designed primarily for students choosing the biochemistry field major. A small number of current problems in biochemistry will be discussed in depth. Reading published research papers in the field will be required. Students earning graduate credit will be expected to produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisites: Biol. 204, Chem. 682 and 683. A 12 666 0 0414

669. Research in Biochemistry. (2). A course designed primarily for students choosing the biochemistry field major. Participation in a biochemistry research project under the direction of a faculty member and a written report summarizing the results is required. May be repeated once for credit. Prerequisites: Chem. 662 or 663 and Chem. 664 or 665. A 12 669 4 0414

750. Biology Workshop. (1-3). A 12 750 2 0401

760. Molecular Genetics. (3). Studies of the physicochemical nature of genetic material and the mechanisms of genetic regulation of metabolism. Students earning graduate credit will be expected to produce a term paper and deliver a class seminar based on the technical literature on a topic chosen in consultation with the instructor. A 12 760 0 0422

798. Biology Seminar. (2). Reviews of current research in biological sciences. Repeatable once for credit. A 12 798 9 0401

Courses for Graduate Students Only

890. Research. (2-5). Lab fee. S/U grade only. Students performing research on their thesis projects should enroll for an appropriate number of hours. An oral presentation of the research results must be presented to the student's thesis committee before a grade is assigned. A 12 890 4 0499

891. Thesis. (2). S/U grade only. Students must be enrolled in this course during the semester in which the thesis is defended. A 12 891 4 0499

Microbiology

Courses for Graduate/Undergraduate Credit

64.5. Food Microbiology. (4). (Offered fall semester in odd-numbered years.) An introduction to the structure and significance of microorganisms in foods. Included are: factors that affect microbial growth; detection of microbes and their products; food spoilage; food preservation by use of chemicals, radiation, high and low temperatures, drying, refrigeration; bacterial and fungal infections and intoxications, and the microbial basis of food sanitation, control, and inspection. Students earning graduate credit will be expected to prepare a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisites: Biol. 204, Chem. 682 and 683. A 12 659 0 0411

552. Mycology. (4). (Offered spring semester in odd-numbered years.) Lab fee. The structure, development and reproduction of fungi, with emphasis on the carbohydrate and physiology of fungi. Prerequisites: Biol. 204 and Chem. 682. A 12 552 1 0411

590. Immunobiology. (3). (Offered fall semester in odd-numbered years.) The nature of antigens and antibodies and their interactions. Cellular and humoral aspects of immunologic phenomena are included. Students earning graduate credit will be expected to prepare a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: Biol. 204 and Chem. 531. A 12 590 0 0416

591. Immunobiology Laboratory. (3). (Offered fall semester in odd-numbered years.) Methods of immunization and techniques for qualitative and quantitative determinations of antibody production and antigen-antibody reactions. Students earning graduate credit will be expected to prepare a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisites: Biol. 590, Chem. 531 or instructor's consent. A 12 591 1 0416

654. Pathogenic Microbiology. (4). (Offered fall semester only.) An introduction to the structure and significance of microorganisms and their relationships to health and disease in man. Students earning graduate credit will be expected to prepare a term paper based on the technical literature on a topic chosen in consultation with the instructor. Those earning graduate credit are expected to make an oral presentation on their topic to the class. Prerequisites: Biol. 330 and Chem. 531. A 12 654 1 0411

658. Microbial Physiology. (3). (Offered fall semester in odd-numbered years.) The physiology and metabolism of microorganisms. All students are expected to prepare a term paper based on the technical literature on a topic chosen in consultation with the instructor, and those earning graduate credit are expected to make an oral presentation on this topic to the class. Prerequisites: Biol. 330 and Chem. 531. A 12 658 0 0411

659. Microbial Physiology Laboratory. (3). (Offered fall semester in odd-numbered years.) An introduction to the basic techniques involved in the study of microbial physiology. Students earning graduate credit will be expected to design and perform an additional experiment not included in the course. Prerequisites: Biol. 330 and Chem. 531. A 12 659 1 0411
660. Topics in Microbiology. (2-4). Lab fee. No more than a total of 6 credit hours earned from among Biol. 610, 640 and 660 may be applied toward major and graduation requirements. Consent of instructor required. A 12 660 4 0407

756. Microbial Genetics. (4). An introduction to the principles which govern plant growth and development. An introduction to flowering plant systematics is included. Students earning graduate credit will be expected to produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: Biol. 204. A 12 520 1 0407

790. Advanced Immunology. (3). A comparative study of the morpho-logy and physiology of the invertebrates, with emphasis on invertebrate endocrinology and the control of plant growth and development by environmental and chemical factors. Students earning graduate credit will be expected to design and perform an additional experiment in consultation with the instructor, and present the results in written form using the format of the journal Plant Physiology. Prerequisite or concurrent: Biol. 505. A 12 505 0 0406

535. Mammalian Physiology Laboratory. (3). 4L. Lab fee. An empirical approach to mammalian physiology. Students earning graduate credit will be expected to submit an additional laboratory report relating the results of a laboratory experiment to those found in the current technical literature. Prerequisite: concurrent or prior enrollment in Biol. 534. A 12 535 1 0410

540. Comparative Embryology. (4). 2R; 4L. Lab fee. (Offered spring semester in even-numbered years.) An introduction to the structure and function of vertebrate endocrine systems is presented in the context of their vertebrate anatomic, structural and functional organization of the animal kingdom. Students earning graduate credit will be expected to produce a term paper based on the technical literature in the field. Prerequisite: Biol. 204. A 12 527 1 0407

526. Comparative Vertebrate Endocrinology. (3). (Offered spring semester of odd numbered years.) An introduction to the techniques of experimental plant physiology. An emphasis is placed on experimental design, the use of control groups and the control of plant growth and development by environmental and chemical factors. Students earning graduate credit will be expected to design and perform an additional experiment in consultation with the instructor, and present the results in written form using the format of the journal Plant Physiology. Prerequisite or concurrent: Biol. 505. A 12 505 0 0406

520. Invertebrate Zoology. (4); 3R; 3L. Lab fee. (Offered fall semester in odd-numbered years.) A comparative study of the morphology and physiology of the invertebrates, with emphasis on the basic body types and their major variations. Students earning graduate credit will be expected to produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: Biol. 204. A 12 520 1 0407

524. Vertebrate Zoology. (4); 2R; 4L. Lab fee. (Offered spring semester in even-numbered years.) An introduction to the principles which govern vertebrate development. Students earning graduate credit will be expected to produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: Biol. 204. A 12 527 1 0407

505. Plant Physiology. (4). (Offered fall semester in even-numbered years.) An introduction to the structure, reproduction and evolution of the major groups of living and extant vascular plants. An introduction to flowering plant systematics is included. Students earning graduate credit will be expected to perform a primary literature survey on a topic selected in consultation with the instructor and deliver a 30-minute oral presentation to the class. Prerequisite: Biol. 204. A 12 502 1 0402

507. Comparative Anatomy. (5). 3R; 4L. Lab fee. (Offered fall semester only.) An intensive study of representative chordates with emphasis on vertebrate anatomy. Students earning graduate credit will be expected to complete additional assignments chosen in consultation with the instructor, such as a term paper based on technical literature, dissection of additional animals, etc. Prerequisite: Biol. 505. A 12 527 1 0412

528. Parasitology. (3); 2R; 4L. Lab fee. (Offered fall semester only.) An introduction to the techniques of experimental plant physiology. An emphasis is placed on experimental design, the use of control groups and the control of plant growth and development by environmental and chemical factors. Students earning graduate credit will be expected to design and perform an additional experiment in consultation with the instructor, and present the results in written form using the format of the journal Plant Physiology. Prerequisite or concurrent: Biol. 505. A 12 505 0 0406

532. Entomology. (5). 3R; 4L. Lab fee. (Offered fall semester in even-numbered years.) An introduction to the techniques of experimental plant physiology. An emphasis is placed on experimental design, the use of control groups and the control of plant growth and development by environmental and chemical factors. Students earning graduate credit will be expected to design and perform an additional experiment in consultation with the instructor, and present the results in written form using the format of the journal Plant Physiology. Prerequisite or concurrent: Biol. 505. A 12 505 0 0406
620. Animal Behavior. (3.) (Offered spring semester of odd-numbered years.) The survey of animal behavior, with an emphasis on the analysis of behavior as a concept of physiological processes. Students earning graduate credit will be expected to produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: Biol. 204 or departmental consent. A 12 620 0 0407

621. Animal Behavior Laboratory. (2.6L). Lab fee. Individual or team research projects in the area of behavior. Prerequisite or corequisite: Biol. 620. A 12 621 1 0407

626. Comparative Vertebrate Reproduction. (3.) (Offered spring semester of even-numbered years.) The anatomy and physiology of the vertebrate reproductive system will be examined. Topics include (1) evolution of sexual reproduction; (2) evolution of the vertebrate urogenital system; (3) sexual differentiation; (4) puberty; (5) anatomy of the vertebrate reproductive system; (6) reproductive cyclicity; (7) fertilization, pregnancy and birth; (8) reproduction and immunology; (9) hormones and reproductive behavior; and, (10) environment and reproduction. Students earning graduate credit will be expected to participate in weekly seminars in addition to the lectures. Prerequisite: Biol. 320 and 527, or instructor's consent. A 12 626 0 0410

630. Sociobiology. (3.) (Offered fall semester in odd-numbered years.) A systematic study of the biological basis of social behavior. The course focuses on animal societies, their population, structure, castes and communication, and the underlying physiology. Students earning graduate credit will be expected to produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: Biol. 204 or departmental consent. A 12 630 0 0407

640. Topics in Zoology. (2-4). Lab fee. No more than a total of 6 credit hours earned from among Biol. 610, 640, and 680 may be applied toward major and graduation requirements. Students must complete a Directed Independent Study Abstract form and obtain departmental approval prior to enrollment. Prerequisites: Biol. 204. A 12 640 1 0411

650. Protozoology. (4). 2R. 6L. (Offered spring semester in odd-numbered years.) Lab fee. Survey of the free living and parasitic protozoa, with identification, life cycles and host-parasite relationships emphasized. Students earning graduate credit will be expected to produce a term paper based on the technical literature on a topic chosen in consultation with the instructor. Prerequisite: Biol. 204. A 12 650 0 0411

671. Evolutionary Ecology. (4). 3R. 2L. Lab fee. (Offered fall semester in even-numbered years.) A synthesis of basic principles in population genetics and ecology is presented as a framework for the study of topics in evolutionary ecology. Emphasis will include (1) the maintenance and structure of population variation, selection, mating structure and the evolutionary advantages of sex; (2) individual, kin, group selection; (4) population structure; (5) population regulation and dispersal; (6) life history strategies in heterogeneous environments; and, (7) demographic and genetic co-variance. Basic techniques in population ecology will be taught on several short field trips throughout the semester. Students earning graduate credit will be expected to participate in a weekly seminar in addition to class hours. Prerequisite Biol. 584. Biol. 418 also is recommended. A 12 671 1 0420

724. Special Problems in Animal Behavior. (3.) Topics such as spontaneous, drive, ethograms, instinct, behavioral plasticity, behavior genetics and the evolution of behavior receive special emphasis. Prerequisite: Biol. 620 or instructor's consent. A 12 724 0 0407

728. Physiological Basis of Behavior. (3.) (Offered fall semester in odd-numbered years.) A modern approach to coordination of mechanisms that stresses the essential unity of nervous and endocrine function. Prerequisite: Biol. 720 or instructor's consent. A 12 728 0 0410

730. Comparative Animal Physiology. (3.) A phylogenetic examination of the homologous and analogous ways in which animals perform similar functions. Prerequisite: Biol. 534 or departmental consent. A 12 730 0 0410

770. Special Problems in Ecology. (5). 2R. 6L. Lab fee. Emphasis on conservation of natural resources, land and water use, wildlife and fisheries management, and effects of pollution. Assigned readings, individual projects and field trips are required. Prerequisites: Biol. 575 and 578 or instructor's consent. A 12 770 1 0420

Chemistry

Graduate Faculty
Associate Professors: Anneke S. Allen, Richard D. Cornelius, William C. Groudas, John W. Johnson, Jr., John R. Luoma, Ram P. Singhal, Melvin E. Zandler
Assistant Professors: John B. McCarten (assistant graduate coordinator), William M. Shirley

The Department of Chemistry at Wichita State offers courses of study leading to the Master of Science (MS).

Admission Requirements
To enroll in the MS program in chemistry, students must meet admission requirements of the Graduate School and hold an undergraduate degree with a major in chemistry. Students whose preparation is equivalent to the BS program recommended by the American Chemical Society Committee on Professional Training are considered well prepared for graduate study.

When admitted to the graduate degree program in chemistry, students are required to take an orientation examination. The results are used by an advising committee of the department to counsel graduate students about which courses are appropriate.

Students must select a faculty member to be their research adviser by the beginning of their second semester in the graduate program. The research adviser guides the students in their research.

Degree Requirements
The MS in chemistry requires the completion of 30 credit hours, including the presentation of a thesis. The program requires at least 6 credit hours in research, Chem. 790. Also, at least 15 credit hours in chemistry courses numbered above 701 must be taken, including at least one 700-level course from four of the following five areas: analytical chemistry, inorganic chemistry, organic chemistry, physical chemistry and biochemistry. Students must successfully complete Chem. 700 at least twice, and full-time students must register each semester in Chem. 701. Additional courses, which may be outside the major field, are selected by students in consultation with their adviser and the department's advising committee.

Chemical Physics Option: Students who have a particular interest in chemical physics may follow a special option. They must take at least one 700-level course from four of six areas, including physics as the sixth area. Physics courses that may be taken include Phys. 712, 714, 811, 881, 631 or other approved courses. It is recommended that students in this option take Chem. 642. Additional information is available in the chemistry department office.

Examinations: Master's students must pass qualifying examinations, which are the same as orientation examinations, in four areas of chemistry. An examination must also be passed in one research area (option), including the areas of German, French, Russian (or the equivalent of one academic year of language with a grade of B or better); computer science; or electronic techniques.

Thesis: The thesis is reviewed by a committee from the department, and an oral examination given by a faculty committee appointed by the Graduate School must be passed.

Courses for Graduate/Undergraduate Credit

501. Acids, Bases and pH. (1.) The study of properties characteristic of acids and bases, typical acid-base reactions, indicators, pH, solution concentration, titration, and buffers. The course begins with a survey of Lewis structures of atoms, molecules, and ions. Prerequisite: inservice elementary teacher or departmental consent. A 12 501 0 1905

523. Analytical Chemistry. (4.) 2R. 6L. Lab fee. Evaluation of data; theory and application
of gravimetric analysis and precipitation, neutralization and oxidation-reduction volumetric analysis. Prerequisite: Chem. 1120 with a grade of C or better. A 13 523 1 1909

524. Instrumental Methods of Chemical Analysis. (4), 2R; 6L. Lab fee. Introduction to atomic, infrared, ultraviolet, mass spectrometry, and calorimetric analysis. Prerequisite: Chem. 1120 or 1240 with a C or better. A 13 531 1 1907

531. Organic Chemistry. (5), 3R; 6L. Lab fee. An introduction to the study of organic compounds, with emphasis upon reaction mechanisms, stereochemistry and spectrographic analysis. Prerequisite: Chem. 1120 or 1240 with a C or better. A 13 531 1 1907

532. Organic Chemistry. (3), 3R; 6L. Lab fee. A continuation of Chem. 531 with emphasis upon the structures and reactions of principal functional groups and compounds of biological interest. Prerequisite: Chem. 531. A 13 532 1 1909

533. Elementary Organic Chemistry. (3). Basic organic chemistry with a special emphasis on topics of importance to health-related professions and education majors. Special emphasis is given to carbohydrates, proteins, drugs, pesticides and energy products. Students enroll in both Chem. 532 and 533 simultaneously. Credit is not allowed for both Chem. 533 and 531. This course will not meet the needs of chemistry majors or premed students. Prerequisite: Chem. 1120 or equivalent. A 13 533 0 1907

534. Elementary Organic Chemistry Laboratory. (2). Lab fee. A basic laboratory course to introduce the student to techniques used in the laboratory to verify the text lecture course. Prerequisite: Chem. 533. Prerequisite or co-requisite: Chem. 533. A 13 534 1 1907

540. Physical Chemistry. (3). An introductory treatment of thermodynamics, kinetics, quantum chemistry, spectroscopy and statistical thermodynamics for students not intending to become professional chemists. In contrast to the more formal, theoretically oriented, traditional physical chemistry courses (545-546), this more practical course will attempt to survey most of the important areas of physical chemistry in a heuristic and applied manner. The concentrated one semester treatment will serve students majoring in preprofessional programs; students majoring in geology, engineering, biological sciences and physics; and field majors in biochemistry and chemistry-business. Prerequisites: Chem. 1120 or equivalent, Math. 2420 or equivalent and one semester of Physics. A 13 540 0 1908

545. Physical Chemistry. (3). Thermodynamics. Gases, first law, thermodynamics, second and third laws, phase equilibria, solutions, chemical equilibria, electrochemistry and chemical kinetics are studied. Prerequisite: Chem. 1120, Math. 344G, or its equivalent, and one semester of college physics. A 13 545 0 1908

546. Physical Chemistry. (3). Kinetic theory, thermodynamics, magnetic susceptibility, quantum mechanics, spectroscopy and statistical thermodynamics. Prerequisites: one year of college physics and Math. 344. A 13 546 0 1908

557. Physical Chemistry Laboratory. (2), 6L. Lab fee. Physical chemistry experiments that illustrate principles learned in Chem. 545 and 546. Prerequisite: Chem. 545 or 546. A 13 547 1 1908

561. Introduction to Biochemistry. (3). A brief history of biochemistry, emphasizing the development of molecular biology; chemistry of biomolecules—proteins, carbohydrates, lipids, nucleic acids, vitamins; molecular basis of bioenergetics and metabolism; storage, transfer and control of genetic information. This course meets the needs of majors from health related programs and science education majors. Prerequisite: Chem. 531 or 533 or one semester of organic chemistry. A 13 561 0 0414

602. Numerical Methods. (2), 1R; 3L. Applications of numerical methods to problems in chemistry and physics. Roots of equations, curve fitting, interpolation, extrapolation and smoothing of experimental data; numerical differentiation and integration and computer programming. Prerequisites: departmental consent. A 13 602 1 1905

603. Industrial Chemistry. (3). For students with an interest in practical industrial processes in current use. The course is designed to bridge the gap between the classroom and the industries. Topics covered include chemicals from petroleum, natural gas, and coal, the polymer industry, the pharmaceutical industry, technical report writing, patents, and communication with engineers and nontechnical persons. Cost calculations, evaluation of alternative processes, and energy consumption are discussed. Prerequisite: 18 hours of chemistry including Chem. 531 or equivalent. A 13 603 0 1905

605. Medicinal Chemistry. (3). For students interested in the design, development and mode of action of drugs. The primary purpose of the course is to describe those organic substances that are used as medicinal agents and to explain the mode of action and chemical reactions of drugs in the body, to illustrate the importance and relevance of chemical reactions as a basis of pharmacological activity, drug toxicity, allergic reactions, carcinogenicity, etc.; and to bring about a better understanding of drugs. Topics include transport, basic receptor theory, metabolic transformation of drugs, discussion of physical and chemical properties, the identification, drug design, structure-activity relationships and discussion of a select number of organic medicinal agents. Prerequisite: Chem. 532 or 533 or equivalent, a seminar of biochemistry (Chem. 561 or 662) and a year of biology are strongly recommended. A 13 605 0 1905

613. Inorganic Chemistry Laboratory. (2), 6L. Lab fee. Introduction to inorganic chemistry. Prerequisite: Chem. 614 or concurrent enrollment. A 13 613 1 1906

614. Chemical Bonding. (2). Molecular symmetry, structure and bonding of inorganic compounds. Prerequisite: Chem. 546 or 540. A 13 614 1 1906

615. Inorganic Chemistry. (2), 2R; 3L. Lab fee. Periodicity and trends in the elements, coordination chemistry and properties of inorganic compounds. Prerequisite: Chem. 614. A 13 615 0 1906

624. Advanced Analytical Chemistry. (3), 2R; 3L. Lab fee. Fundamentals of absorption and emission spectroscopy, light scattering, techniques, mass spectrometry, nuclear magnetic resonance, polarography, voltammetry and capillary electrophoresis. Prerequisite: Chem. 524. A 13 624 1 1909

625. Electronics. (2), 1R; 4L. Lab fee. Provides a working knowledge of electronic devices and circuits for the student or research worker who has little or no background in electronics. Prerequisite: Instructor's consent. A 13 625 1 1909

636. Advanced Organic Chemistry. (3). Topics to be discussed include stereochemistry, conformational analysis, organic reaction mechanisms including free energy relationships, kinetics, isotope effects, catalysis, solvent effects, kinetic and thermodynamic control, rearrangements. Prerequisite: Chem. 532. A 13 636 0 1907

641. Advanced Physical Chemistry. (3). Introduction to quantum chemistry, atomic and molecular spectra, statistical thermodynamics and reaction rate theory. Prerequisite: Chem. 546. A 13 641 0 1908

642. Chemical Physics. (3). Topics in areas of overlapping interest for students of chemistry and physics, such as thermodynamics, quantum mechanics, solids and various types of spectroscopy. Standard experimental and theoretical techniques used in research in chemical physics are discussed by a team of chemists and physicists. Prerequisite: Chem. 641 or instructor's consent. A 13 642 0 1905

646. Biochemistry of Cell Constituents. Catalysis, Oxidation, Photosynthesis. (3). Study of major constituents of the cell; proteins, carbohydrate, glycoprotein, lipid, nucleic acid, nucleoprotein, enzyme catalysis; biochemical oxidations; photosynthesis; and introduction to intermediary metabolism. A fundamental background of biology or microbiology is recommended but not essential. Prerequisites: Chem. 523 and 532 or equivalents. A 13 662 0 0414

663. Biochemistry of Cell Metabolism, Biosyntheses, Structure, Function and Regulation of Proteins and Nucleic Acids. (3). Study of metabolism and control of carbohydrates, lipids, phosphoglycogen, spondoglycans, sterols, amino acids, and proteins; synthesis of porphyrins, amides and polypeptides; synthesis and metabolism of purines, pyrimidines and nucleotides; synthesis and structure of DNAs, RNAs and proteins; organelle and enzyme catalysis; study of proteins and nucleic acids, hereditary disorders of metabolism; biochemistry of endocrine glands, nutrients and vitamins, body fluids and generalized tissues. A fundamental background of biology or microbiology is recommended but not essential. Prerequisites: Chem. 523 and 532 or equivalents. A 13 663 0 0414

664. Biochemistry Laboratory I. (2), 6L. Lab fee. Practical education in biochemical processes and procedures. Experiments include: cellular fractionation, chromatography, characterization and assay of important metabolites; application of radioisotopes in vivo biochemical pathways, analytical techniques of common isolopes, structure, function, purifications and reactions of proteins and DNA and RNA's, the use of high pressure liquid chromatography and other separation procedures in biological sciences and medicine. Recommended for students seeking admission to medical and paramedical professions or interested in graduate study in chemistry and biological sciences. Prerequisites: Chem. 523 and 532 or instructor's consent. A 13 664 1 0414

665. Biochemistry Laboratory II. (2), 6L. Lab fee. Study of advanced techniques.
666. Special Topics in Biochemistry. (3). A small number of current problems in biochemistry will be discussed in depth. Reading of published research in the field will be required. Prerequisites: Biol. 416 and Chem. 662 and 664 or 665. A 13 669 4 9414

669. Research in Biochemistry. (2-3). Students in the major field participate in a biochemistry research project under the direction of a faculty member. A written report summarizing the results is required. May be repeated once for credit. Prerequisites: Biol. 416 and Chem. 662 or 663 and 664 or 665. A 13 669 4 9414

690. Independent Study and Research. (2-3). Study performed and directed by a faculty member in the Department of Chemistry. Repeatable for credit. A maximum of 3 credit hours may be counted toward graduation. Prerequisite: consent of the department. A 13 690 4 1905

700. Chemistry Seminar. (1). S/U grade only. Seminars are given by students on either papers recently published in the literature or on their own research. Repeatable for credit. A 13 700 9 1905

701. Chemistry Colloquium. (1). S/U grade only. Speakers for the colloquium consist of outstanding chemists from other institutions and faculty. Repeatable for credit. A 13 761 9 1905

705. Molecular Symmetry. (1). A study of the chemically relevant aspects of group theory. Topics include symmetry elements, character tables, point group symmetry, classification of groups of molecules and representations of groups. A 13 705 9 1905

709. Special Topics in Chemistry. (2-3). A discussion of topics of special significance and interest to faculty and students. Offerings will be announced in advance. Repeatable for credit. A 13 709 9 1905

712. Coordination Chemistry. (3). The study of classical, organo-metallic and biorganics coordination complexes. Topics include nomenclature, fundamental bonding concepts, principles of synthesis, mechanisms of reaction, and electron transfer reactions and of catalysis, and modes of action in biological systems. A 13 712 9 1906

733. Physical Methods in Inorganic Chemistry. (3). An introduction to electronic and vibrational spectroscopy, magnetic susceptibility, EPR, Mossbauer spectroscopy, and x-ray crystallography as applied to inorganic systems. Emphasis is placed upon interpretation of results for understanding the electronic and structural properties of inorganic compounds. Prerequisite: Chem. 705 or equivalent. A 13 713 9 1906

723. Analytical Spectroscopy. (3). Absorption (UV, visible, IR, and atomic); emission: flame emission and atomic absorption spectrometry, molecular fluorescence and phosphorescence methods: Raman, nuclear magnetic resonance and electron spin resonance spectroscopy, X-ray methods. Lec-

724. Electroanalytical Chemistry. (3). Topics covered in this course are voltammetry, polarography, coulometry, and related reversible and irreversible diffusion controlled processes. CE (chemical reaction before electrical reaction), EC (electrical reaction before chemical reaction) and catalytic reaction, and organic pol-

725. Digital Computers in Chemical Instrumentation. (3). An introduction to the use of the small digital computer in the laboratory. Lectures deal with digital logic, data acquisition techniques and the on-line digital computer in instrumentation. Laboratory experience covers the design of digital logic circuits, interfacing chemical instruments to the digital computer and programming the small digital computer. A 13 725 9 1905

735. Physical Organic Chemistry. (3). An examination of molecular orbital theory, electronic spectroscopy including electronic anion and cation, products of reactions, and free radical. Prerequisites: Chem. 705 and 706 or equivalent. A 13 735 9 1905

736. Biophysical Chemistry. (3). A theoretical examination of the methods used in the study of biological macromolecules. Topics include ultracentrifugation, electron microscopy, fluorescence, circular dichroism, optical rotary dispersion and light scattering. Prerequisites: Chem. 662 or 663 and 546. A 13 763 9 1904

Courses for Graduate Students Only

899. Research in Chemistry. (2-12). S/U grade only. Research for the student planning to receive a MS. Research is to be directed by a faculty member. Repeatable for credit. A 13 899 4 1905

999. Research in Chemistry. (2-16). S/U grade only. Research for the student planning to receive the PhD. Research is to be directed by a faculty member. Repeatable for credit. A 13 999 4 1905

Computer Science

Graduate Faculty

Associate Professors: Viswanathan Santian (graduate coordinator), Jan M. Zytowski

Assistant Professors: N. Chakrapani, Zhi-Xi Fang, David M. Foley, Bruce W. Koehn, Robert Neufeld, James Tomayko, Trong Wu

The Department of Computer Science offers two graduate degree programs, the Master of Computer Science (MCS) and the Master of Science (MS).
Master of Computer Science (MCS)
The MCS is a professionally-oriented degree aimed at candidates with substantial background in the computing profession but not necessarily a degree in computer science. Through a wide range of electives outside the computer science department, and a sizable graduate project called Practicum, the MCS program seeks to emphasize the impact of computers in application areas.

Master of Science (MS)
This program offers the more traditional graduate degree intended primarily for candidates with an undergraduate degree in computer science. Through a combination of coherent electives and a research/thesis segment, the MS program seeks to provide a level of concentration suitable for advanced professional work and/or further graduate study in computer science.

Admission Requirements
Candidates seeking to pursue graduate study in computer science are expected to meet the usual requirements for admission to the Graduate School, including the completion of a baccalaureate degree with a minimum GPA of 2.75 in the last 60 hours of course work. All candidates must earn a satisfactory score on both the GRE aptitude test and the GRE subject test in computer science. Although neither the MCS nor the MS program requires that the prior bachelor's degree be in computer science, both programs require the following minimum background in the computer science area.

Background Course Work
The equivalent WSU course work is given in parentheses.
(a) Mathematics
(1) Two semesters of calculus (Math. 242-243).
(2) Introductory knowledge of linear algebra and discrete mathematics (statistics) (Math. 211 and Math. 331).
(b) Programming
Introductory knowledge of computer programming including documentation practices (CS 200) and the knowledge of a programming language, such as PL/2 (CS 202), PASCAL (CS 212) or ALGOL.
(c) Assembly Language Programming
One semester of programming in an assembly language (CS 216).
(d) Basic Data Structures
Introductory knowledge of computer algorithms and elementary data structures (CS 300).
(e) Computer Organization
Introductory knowledge of the functions and interplay of the components of a digital computer (CS 340).
(f) Basic File Structures
Introductory knowledge of computer file organization and processing techniques (CS 405).

Requirements (b)-(f) are prerequisites to graduate level course work in computer science. They may be met by (1) completing the equivalent WSU courses, (2) equivalent course work from another accredited institution, (3) passing proficiency tests administered by the department or (4) satisfactory score on the GRE Advanced Test in computer science.

(g) Foundation Courses
In addition to the prerequisite course work, all master's candidates must complete four foundation courses:
- Programming Languages (CS 510)
- Operating Systems and Architecture I (CS 540)
- Data Structures (CS 560)
- Software Engineering (CS 580)

For admission to candidacy, MCS candidates must have completed two of these courses, MS candidates must have completed all four.

Admission to graduate study in the Department of Computer Science may be recommended in one of three categories depending upon the candidate's interests and background.

Degree Requirements—MCS
Candidates for the MCS degree must complete a minimum of 30-32 credit hours of graduate level course work, as follows:
A. Foundation courses (0-6 credit hours)—All Foundation courses (see (g) above) must be completed. Up to 6 hours from this group may be applied toward the MCS degree.
B. Conditional
Must meet all the requirements with no more than 12 hours of deficiency in the background course work, (a)-(g), and with a minimum GPA of 3.0 in all CS-related courses.
C. Probationary
Candidates fulfilling the requirements for full-standing or conditional status except for the minimum GPA requirements may be recommended for admission in this status. Each applicant's case is evaluated on the basis of other merits it may have to justify admission.

Degree Requirements—Nondegree

Nondegree A
Applicants not seeking a graduate degree may be admitted to this category provided they meet the same requirements as set forth for the Degree Category. The admission criteria for the two statuses in this category—full-standing and probationary—are the same as those of the corresponding statuses in the Degree Category, with the exception that the GRE aptitude test and the GRE subject tests are not required for this category.

Nondegree B
Applicants with substantial deficiencies for the Degree or the Nondegree A categories may be recommended for admission to this category provided they meet the Graduate School requirements for admission and there is reasonable evidence of interest and ability to pursue graduate level course work. Students in this category are restricted from taking courses numbered 800 or above.

Denial of Admission
Individuals with substantial deficiencies in their background and/or low GPA in previous course work can usually remedy their deficiencies by enrolling in the College of Liberal Arts and Sciences and satisfactorily completing required background course work. The departmental adviser in computer science will help plan a course of study toward this end.
Degree Requirements—MS

Candidates for the MS degree must complete a minimum of 30-32 credit hours of graduate level work, as follows.

A. Foundation courses (6 credit hours)—All Foundation courses (see (g) above) are required. No credit hours from this group may be applied toward the MS degree.

B. Core courses (12 credit hours)—All candidates must complete at least four 800-level computer science courses below 890.

C. Core courses (12 credit hours)—All candidates must complete at least four 800-level courses until they have completed CS 720.

D. Electives (6 credit hours)—Each MS candidate must complete a coherent block of technical electives from computer science or a closely-related field, as approved by the candidate's graduate adviser. Computer science electives must be at the 600 level or above.

E. Research/Theesis (6-8 credit hours)—All MS candidates must complete 6 hours of concentrated study involving research in a specialized area of computer science. This research activity must be carried out under the supervision of a computer science graduate faculty member. At the discretion of the student's research advisor, this segment of the program may be satisfied by 8 credit hours of additional graduate-level course work, including 2 credit hours of CS 890 (Graduate Seminar), specifically approved for this purpose.

F. Final Examination—(1) Each MS candidate writing a thesis must pass a final examination by an ad hoc faculty committee. This examination will pertain to, but is not limited to, the subject matter of the thesis. (2) MS candidates opting for additional course work in place of thesis must pass a final comprehensive written examination. This examination will cover a variety of topics which are normally addressed in the foundation, theory and core course work, or in the background course work.

### Examinations

See "Admission Requirements" above for entry examinations.

See the category marked "Final Examinations" under each degree for exit examinations.

### Courses for Graduate/Undergraduate Credit

**501. Numerical Programming Techniques.** (3, 2R; 2L). A study of the programming techniques used to solve nonlinear equations, interpolate, integrate and solve systems of linear equations. The implications of finite precision floating point arithmetic are discussed. Techniques for initial and boundary value problems in ordinary differential equations are also covered. Selected algorithms are implemented on the computer. Prerequisites: Math 243 and CS 300. A 34 501 0 1 074

**510. Programming Languages.** (3). Formal definition of programming languages, including syntax and semantics. Also examined are underlying properties of algebraic languages, including scope of declarations, storage allocation, grouping of statements, binding time of constituents, subroutines and tasks. Prerequisite: CS 300. A 34 510 0 0704

**512. Systems Programming.** (3). 2R; 2L. Introduction to advanced concepts of assembly language programming and their application in systems programming. Topics covered include input/output programs, machine dependent and machine independent instructions, multitasking and task management. The course requires one or more programming projects involving representative systems programs. Prerequisites: CS 300, 340, and 405. A 34 512 1 0704

**515. Compiler/Interpreter Techniques.** (3). 2R; 2L. Review of programming language structures, translation and implementation. Compiler structure, code generation and optimization. Overall design and organization of compilers and interpreters, including lexical and syntactic analysis, construction of symbol tables, object code generation, diagnostic error messages and optimization techniques. Prerequisite: CS 510. A 34 515 1 0704

**527. The History of Computing.** (3). Crosslisted as Phil 527. This course is a study of the development of automatic computing machines and their mechanisms of control and programming. Topics discussed include mechanical computers, electronic digital computers, as well as the conceptual origins of computing. A 34 527 0 0704

**540-541. Operating Systems and Architecture I and II.** (3-3). Design of computer systems emphasizing software and computer architecture. Batch processing systems and their operating characteristics are reviewed, including addressing techniques, memory management, file design and systems accounting. Concurrent processes are discussed for both software and hardware, including topics such as I/O devices, processor scheduling, file allocation, asynchronous processes, paging, recovery, protection and synchronization in multiprocess and multitasking systems. Advanced architectures and operating system implementations are considered. Prerequisites for 540: CS 300 and 540: for 541: CS 540. A 34 540 0 0702; A 34 541 0 0702

**560. Data Structures.** (3). The formal specification of data structures. Linear lists and arrays, orthogonal lists and multi-level structures are studied. Such topics as trees and graphs and searching and sorting techniques are included. Prerequisite: CS 405. A 34 560 0 0702

**565. Data Base Design.** (3). Principles of data base design and management for computer information systems. Several logical organizations and file design techniques are examined. Problems of security and integrity of data are also discussed. Prerequisite: CS 405. A 34 565 0 0702

**580. Introduction to Software Engineering.** (3). 2R; 2L. An introduction to the body of knowledge, presently available tools, and current theories and conjectures regarding the process of program development. These topics are studied from several different viewpoints, ranging from the individual program statement to a large-scale software system. Prerequisite: CS 300. A 34 580 1 0704

**611. ADA and Software Engineering.** (3). 2R; 2L. An in-depth study of the programming language ADA with an emphasis on understanding the software engineering principles on which it is based. Focus will be on the novel features the language has to offer such as packages, generics, separate compilation and multithreading. Laboratory sessions will provide hands-on programming experience to reinforce textbook knowledge of the language. Prerequisite: CS 510. A 34 611 1 7074

**641. Small Systems Architecture.** (3). A course on minicomputers and microcomputers and on how small computers are used to construct larger ones, including general concepts of computer architecture, particularly the differences between large computers and small computers and the special features of small computers, such as horizontal and vertical micro-programming of control units, terminals, cassette, tapes, and discs, networks of small computers; and trends in small computer use and design. Prerequisite: CS 340 or EE 394. A 34 641 0 0702

**644. On-Line Computer Systems.** (3). Characteristics of distributed computer systems, as contrasted with general purpose, time-sharing systems.
Courses for Graduate Students Only


821. Analysis of Algorithms. (3). Introduction to the techniques used to analyze both specific algorithms and classes of algorithms. Popular models including Knuth's Mix and random access machine will be covered. Specific topics such as divide-and-conquer, recurrence equations, and dynamic programming will be studied. Applications to set operations, hashing, graph searching, and transitive closure and partitioning will be analyzed. Prerequisites: CS 560 and either 420 or graduate standing. A 34 821 0 0702

841. Advanced Computer Architecture. (3). A study of advanced topics in computer architecture like parallel processing, stack architectures, computer performance evaluation and reliability of computing systems. Architectures of typical systems belonging to the IBM, CDC and Burroughs families of computers will be studied. Prerequisite: CS 540. A 34 841 0 0702

842. Operating Systems Concepts. (3). A comprehensive treatment of the design of executive software for systems ranging from simple multiprogramming to multiprocessor systems. Concepts of concurrency and parallel processes, related problems of intra- and inter-system communication, and security features will be addressed. General principles of resource management as related single-processor and multiprocessor systems will be presented. Prerequisite: CS 540. A 34 842 0 0702

843. Distributed Computing Systems. (3). A study of hardware and software features of on-line multiple computer systems with an emphasis on network design and telecommunication. Topics include distributed data bases, interprocess communication and centralization versus distribution. Study of the use of microcomputers in representative configurations is also included. Prerequisite: CS 540 or 641 or EE 694. A 34 843 0 0702

862. Principles of Data Base Design. (3). An advanced treatment of the principles of data base design. The following topics will be covered: logical design, including relational model; physical design, including new technological advances in implementing very large data bases; security and integrity of data, and distributed data base networks. Prerequisite: CS 560. A 34 862 0 0702

882. Software Testing and Reliability. (3). A study of the ingredients of software quality assurance and their interactions, characteristics of software quality, methods of measurement, software reliability models and program testing, and tools for software development and testing. Methods for proving program correctness and comparison. Prerequisite: CS 580. A 34 882 0 0705

890. Graduate Seminar. (2). A series of seminars on topics of current research interest in computer science. Participants will be required to present one or two seminars on topic(s) to be selected with the approval of their graduate advisors. Repeatable up to 4 credit hours. Graded S/U only. Prerequisite: departmental consent. A 34 890 0 7001

891. Practicum. (3). An intensive applied learning experience, involving the analysis and solution of a significant practical problem, and appropriate documentation of the work done. Students are required to participate in a departmental seminar where their practicum experiences will be shared with other students and faculty. Graded S/U only. Prerequisite: departmental consent. A 34 891 2 0701

892. Thesis. (1-6). May be repeated for up to 6 hours of credit. Graded S/U only. Prerequisite: departmental consent. A 34 892 4 0701

893. Individual Reading. (1-5). Graded S/U only. Prerequisite: departmental consent. A 34 893 3 0701

898. Special Topics. (2-3). Topical, of current interest to advanced students of computer science. Repeatable for credit with departmental consent. Prerequisite: departmental consent. A 34 898 4 0701

English

Graduate Faculty

Distinguished Professor: Bruce Cutler (Coordinator of creative writing and Adele M. Davis, Distinguished Professor of Humanities)


Associate Professors: James P. Erickson, Gerald B. Hoag, George F. Row, Philip H. Schneider, Anthony G. Sobin, Frances C. Stephens, Donald Winke, William F. Woods, Peter T. Zoller

Assistant Professor: Tina Bennett-Kastor, Sarah Daugherty, Anthony P. Gyleh, Jeanine M. Hathaway, W. Stephen Hathaway, Diane Quaint, Linda Robertson, Anita Skaen

Both the Master of Arts (MA) in English and the Master of Fine Arts (MFA) in creative writing are offered by the English department at Wichita State University.

Master of Arts

The Master of Arts (MA) program in English is designed to equip graduate students with the knowledge and skills necessary both to the outstanding...
Admission Requirements

Applicants must meet the general requirements of the Graduate School, with the additional requirement that they have a 3.0 grade point average in their previous work in English courses. The coordinator of graduate studies in English will then evaluate the applicant's transcript, prerequisite courses, test score at least 600 on the TOEFL (Test of English as a Foreign Language) Examining before being admitted to the MA degree program in English.

Counseling

All MA candidates in English are advised by the coordinator of graduate studies in English or by the assistant coordinator. The coordinator and the student establish a Plan of Study that takes into account the student's interests and future vocational plans.

Transfer of Credit

Students must complete 24 hours of credit at Wichita State within the English department. Students may transfer up to 9 hours of credit on the plan A program and up to 6 hours of credit on plans B and C. If the credit to be transferred comes from a program in which the student took a graduate degree, the time limits imposed by the Graduate School on other transfer of credits will not apply.

Language Requirement

Master's degree candidates in English may fulfill the department's foreign language requirements in any one of the following ways:

1. By submitting a transcript showing the successful completion of at least 15 hours of undergraduate work in a single foreign language, or the equivalent as defined by the department's graduate committee.
2. By completing the required 15 hours of undergraduate work in a single foreign language.
3. By taking the Graduate School Foreign Language Test (GSFLT) in the selected foreign language, with a successful score determined by the department.
4. By submitting a transcript showing successful completion of 6 hours of linguistics.

Degree Requirements

Eng. 800 (Introduction to Graduate Study in English) must be included in the student's first semester of graduate study.

All work to be counted toward the MA in English must be in courses numbered above 700—with the exception of 680 (Theory and Practice in Composition) and in literature: Eng. 515, 521, 522, 524, 526, 527, 610, 665, 667, and 672. English 515 may be taken to fulfill in part the major author and/or optional course requirement. Neither a separate master's essay nor a final comprehensive examination is required under plan A, since equivalents for both of these are incorporated into the student's course work. Students must specify two seminars (Eng. 522, 523, 524, 526, and/or 515) in which the term papers will be submitted as the equivalent of their master's essay. For this purpose, both essays must be read and approved by a second member of the department's graduate faculty. Approval of a student's performance on the examination by both the course professor and the second reader constitutes the equivalent of a pass in that portion of a comprehensive examination.

Plan B requires nine courses plus a master's essay for a total of 30 semester hours distributed as follows: Eng. 800 (Introduction to Graduate Study in English), two genre courses, two major author courses, two period courses, two optional courses, and Eng. 870 (Master's Essay). Plan B also requires a comprehensive examination on one period (on linguistics), one genre, and one author.

Plan C, a program with an emphasis on creative writing, requires the completion of 30 semester hours plus a comprehensive examination and a thesis, which must be original work in fiction, poetry or some other suitable literary form. A student's program, individually designed in consultation with the coordinator of creative writing, must include 9 semester hours in the graduate creative writing sequence. The final com-
Master of Fine Arts in Creative Writing

The degree program for the Master of Fine Arts (MFA) in creative writing is a terminal one in which emphasis is placed on the development of attitudes, skills and understanding in the practice of imaginative writing, along with related academic study. The WSU Program is not conceived as a solely skill-oriented program. It places emphasis on the development of fine writers who are also able, as a result of additional course work in English, to demonstrate skills useful in teaching, editing and in pursuing other areas related to creative writing.

The program allows for a core of activity in creative writing and for a thesis which will necessitate specialization in poetry, short fiction, the novel or work in some other appropriate form. Flexibility is provided in additional areas of required study to allow for a variety of possible emphases.

Since all MFA students participate in the English department's graduate program, they are required to take ENG 800 (Introduction to Graduate Study). Teaching assistants are required to take the in-service training course unless specifically exempted.

Admission Requirements

Applicants must meet the general requirements of the Graduate School, with the additional requirement that they have a 3.0 grade point average in their previous work in English courses. The coordinator of graduate studies in English, in consultation with the coordinator of creative writing, evaluates the applicant's transcript, prescribing additional undergraduate hours for those who have fewer than 24 credit hours in English and American literature and creative writing, or in other work acceptable to the English department. Courses in freshman composition, grammar, teaching methods, journalism, speech, etc., may not be included in the required 24 hours. Exceptions may be made for outstanding students who have majored in related fields. Gifted writers may study in the program as special students with no specific degree intentions.

Applicants who have earned their undergraduate degrees more than ten years before the time of application for admission must be interviewed by the graduate coordinator before admission to the degree program. Applicants who have earned their degrees at institutions in countries in which English is not the native language must score at least 600 on the TOEFL (Test of English as a Foreign Language) Examination before being admitted to the MFA degree program in creative writing.

Degree Program Status

Applicants who seek to be admitted with full standing in the degree program must submit a sample of original writing in fiction (one short story or 20 pages), poetry (four to six poems) or other appropriate form to the coordinator of creative writing at the time they seek admission.

A student may be admitted into the MFA degree program in creative writing on a conditional basis pending approval of a manuscript demonstrating enough talent to suggest successful completion of the degree. Students may submit such a manuscript prior to beginning their course work or may wait until their first semester. In no case may the manuscript be submitted later than the first semester of course work. Students are notified of the dates by which manuscripts are to be submitted.

Counseling

All MFA candidates in English are advised by the coordinator of graduate studies in English or by the assistant coordinator, after consultation with the coordinator of creative writing. The graduate coordinator and the student will establish for each student a plan of study that takes into account the student's interests and future vocational plans.

Transfer of Credit

A minimum of 24 of the total 48 semester hours required for the MFA degree in creative writing must be taken at Wichita State. No more than 24 hours of credit may be counted toward the degree from other graduate work taken at Wichita State or at another school. If the credit to be transferred comes from a program in which the student took a graduate degree, the time limits imposed by the Graduate School on other transfer of credit will not apply; 24 hours may be accepted toward the MFA.

Degree Requirements

Course Work

The 48 semester hours of course work are apportioned into two categories: required and elective courses.

A. Required Courses

1. A minimum of 3 hours per semester in ENG 801 (Creative Writing: Fiction), 802 (Creative Writing: Fiction), 805 (Creative Writing: Poetry), or 806 (Creative Writing: Poetry) to a maximum of 12 semester hours.

2. Three hours in ENG 800 (Introduction to Graduate Study in English) or the equivalent, required of all graduate students. ENG 800 must be included in the student's first semester of graduate study.

3. Three hours in ENG 830 (Graduate Studies in Drama), 832 (Graduate Studies in Fiction), or 834 (Graduate Studies in Poetry). With departmental consent, each course may be repeated for a maximum of 6 hours credit.

4. Three hours in ENG 860 (Graduate Seminar in Special Topics). With departmental consent, seminars may be repeated for a maximum of 12 hours credit.

5. Two to 6 hours in ENG 875 (Master's of Fine Arts Essay).

6. For purposes of enrichment, candidates emphasizing fiction and poetry must take at least 3 graduate hours of comparative literature, literature in translation, foreign language, or another course in another art or discipline. The choice is contingent upon the student's having the proper prerequisites.

7. Graduate teaching assistants are required to take the in-service training course ENG 780 (Advanced Theory and Practice in Composition) unless specifically exempted.

B. Elective Courses

All candidates must successfully complete a minimum of 15 elective hours.
in English courses numbered 800 and above, with the exception of English courses numbered 515 through 527, which may be taken for graduate credit. Candidates may take up to 26 elective hours in English courses numbered 800 and above and in the approved 500-level courses. Other exceptions may be made as approved by the coordinator of creative writing and with the consent of the graduate coordinator. Candidates offering 500-, 600-, or 700-level English courses for graduate credit must satisfy a higher differential of performance relative to undergraduate students in the same courses, with the nature of this differential performance set by professors. Elective courses must be taken to strengthen areas of weakness; to pursue historical, technical or theoretical studies that the candidate finds useful; or to enrich their degree program appropriately. As many as 9 hours of Eng. 880 (Writer’s Tutorial: Fiction), Eng. 881 (Writer’s Tutorial: Poetry) and Eng. 885 (Directed Reading) may be offered in technical studies related to creative writing.

Comprehensive Examination. All candidates are required to pass a written comprehensive examination in the final semester of their course work. This examination is based on a reading list of 40 books chosen by the candidate’s thesis director and the coordinator of creative writing in consultation with the candidate.

Thesis. The MFA thesis in creative writing consists of a body of original work of publishable quality. The manuscript must be of such length as is appropriate to published books in its genre and is to be written under the direction of a member of the program staff. Candidates must present their theses with brief introductions.

Oral Examination. Once a candidate has submitted the thesis, a committee is appointed to meet with the candidate and examine the work in the manner specified by the Graduate School.

Composition

Courses for Graduate/Undergraduate Credit

680Q. Advanced Composition. (3). This course explores the relationships among contemporary issues, problem solving, and communication. The first objective of the course is to engage students in interdisciplinary inquiry into some aspect of social policy, inquiry which asks students to apply the analytical approaches of their major fields to current issues of broad, general interest. The second objective of the course is to develop students’ abilities to communicate their knowledge and assumptions about this issue to a variety of audiences and for a variety of purposes. Prerequisites: Eng. 101 and upper division standing. A 14 6850 Q 1501

780. Advanced Theory and Practice in Composition. (3). Review of new theories of rhetoric, recent research in composition and new promising developments in composition programs in schools and colleges. Students are given practice in advanced writing problems, situations, and techniques, and may propose projects for further special study. A 14 780 0 1501

Creative Writing

Courses for Graduate/Undergraduate Credit

517 & 518. Playwriting I and II (3 & 3).
585. Writers Tutorial: Prose Fiction. (3). Tutorial work in creative writing in prose fiction with visiting writer. Repeatable for credit. A 14 5170 1507 & A 14 518 0 1507
586. Writers Tutorial: Poetry. (3). Tutorial work in creative writing in poetry with visiting writer. Repeatable for credit. Prerequisite: consent of creative writing coordinator. A 14 586 0 1507
604. Writing Seminar: Fiction. (3). Advanced course designed primarily for the non-traditional student, both graduate and undergraduate, who desires intensive experience in the conceptualization and writing of prose fiction. Not credited toward the MFA degree. Prerequisites: 6 hours of undergraduate creative writing or instructor consent based on submitted manuscript. Departmental consent required for undergraduate enrollment. A 14 604 9 1507
605. Writing Seminar: Poetry. (3). Advanced course designed primarily for the non-traditional student, both graduate and undergraduate, who desires intensive experience in the conceptualization and writing of poetry. Not credited toward the MFA degree. Prerequisites: 6 hours of undergraduate creative writing or instructor consent based on submitted manuscript. Departmental consent required for undergraduate enrollment. A 14 605 9 1507

Courses for Graduate Students Only

801. Creative Writing: Fiction. (3). Advanced work in creative writing. Repeatable for credit. Prerequisite: consent of creative writing coordinator. A 14 801 9 1507
805. Creative Writing: Poetry. (3). Advanced work in the writing of poetry. Repeatable for credit. Prerequisite: consent of creative writing coordinator. A 14 805 9 1507
875. Master of Fine Arts Essay. (1-6). A 14 875 4 1507
880. Writer’s Tutorial: Fiction. (3). Prerequisite: creative writing in prose fiction with visiting writer. A 14 880 9 1507
881. Writer’s Tutorial: Poetry. (3). Prerequisite: creative writing in poetry with visiting writer. A 14 881 9 1507

Linguistics

Courses for Graduate/Undergraduate Credit

665. History of the English Language. (3). Cross-listed as Ling. 665. Linguistic and cultural investigation of the development of English. Prerequisite: Eng. 315 or Ling. 577 or departmental consent. A 14 665 0 1505
667. English Syntax. (3). Cross-listed as Ling. 667 and Anthro. 667. A study of the basic principles of English syntax, covering the major facts of English sentence construction and relating them to linguistic theory. Prerequisite: Eng. 315 or equivalent or departmental consent. A 14 667 0 1505
672. Studies in Language Variation. (3). Cross-listed as Ling. 672. An introduction to the study of language variety, with special attention to regional and social dialect in America and methods of studying it. May be repeated for credit when content varies. Prerequisite: Eng. 315 or Ling. 577 or departmental consent. A 14 6720 1505
727. Teaching English as a Second Language. (2-3). Cross-listed as Ling. 727 and CDS 727. Current methods of teaching English to nonnative speakers are discussed. Students learn to analyze interlanguage patterns and to design appropriate teaching units for classes and language laboratory use. A 14 727 0 1220
740. Graduate Studies in Linguistics. (3). Selected topics in theories of language and methods of linguistic study. With departmental consent, the course is repeatable for credit. A 14 740 0 1505

Literature

Courses for Graduate/Undergraduate Credit

501. English Authors. (3). Subject to be announced each semester. Repeatable for credit. A 14 501 0 1502
502. Types of American Literature. (3). Drama, fiction, poetry. Subjects to be announced each semester. Repeatable for credit. A 14 502 0 1502
510. Peer Tutoring. (2). Explores strategies for using peer tutoring and collaborative learning to teach composition. Special emphasis is given to diagnosis and evaluation of writing abilities, conducting individual and group conferences, the writing process, the basic elements of Standard Written English, and theories of modernist and dialect acquisition. Concurrent enrollment in Eng. 511. Tutorial Practicum, recommended. This course or equivalent preparation required of those intending to serve as tutors in the writing lab. Prerequisite: Instructor’s consent. A 14 510 0 1507
511. Tutorial Practicum. (1). Required of all students intending to serve as tutors in the
512. Studies In Fiction. (3). Subjects to be announced each semester. Repeatable for credit. A 14 512 0 1502

513. Studies in Poetry. (3). Repeatable for credit. A 14 513 0 1502

514. Studies in Drama. (3). Subjects to be announced each semester. Repeatable for credit. A 14 514 0 1502

515. Studies in Shakespeare. (3). Repeatable for credit. A 14 515 0 1502

516. Studies in Medieval Literature. (3). Subjects to be announced each semester. Repeatable for credit. A 14 516 0 1502

517. Studies in Renaissance Literature. (3). Subjects to be announced each semester. Repeatable for credit. A 14 517 0 1502

518. Studies in Romantic Literature. (3). Subjects to be announced each semester. Repeatable for credit. A 14 518 0 1502

519. Studies in Victorian Literature. (3). Subjects to be announced each semester. Repeatable for credit. A 14 519 0 1502

520. Studies in Modern Literature I. (3). British and American literature, 1900-1945. Subjects to be announced each semester. A 14 520 0 1502

521. Studies in Modern Literature II. (3). British and American literature, 1945 to present. Subjects to be announced each semester. A 14 521 0 1502

522. Images of Women in Literature. (3). Cross-listed as WS 505. Women characters as stereotypes, archetypes and fully developed human beings in the works of various authors. A 14 522 0 1502

523. Writing by Women. (3). Cross-listed as WS 523. Women character traits as stereotypes, archetypes and fully developed human beings in the works of various authors. A 14 523 0 1502

530. Comparative Literature: Ancient and Pre-Renaissance. (3). A study of comparative structures, themes and literary conventions as found in representative works of the ancient Near East and the Western tradition. Readings may vary: epics, romances and dramatic appreciation and on the affinity and the uniqueness of the works compared. A 14 540 0 1502

546. Comparative Literature: Renaissance and Modern Europe. (3). A study of some controlling themes and modes in Renaissance and modern European literature. Readings may vary: tragedies, dramas and poetry, with emphasis on appreciation, critical awareness and the real similarities and differences between works. A 14 566 0 1502

550. Comparative Literature: Myths, Ancient and Modern. (3). A study of representative man-centered myths from various traditions: classical, pre-Renaissance and contemporary, with emphasis on significant relations between individual works or contrasting traditions. A 14 550 0 1502

558. Special Studies. (1-3). Topic selected and announced by the individual instructor. Repeatable for credit. Prerequisite: departmental consent. A 14 558 3 1502

601. Old English. (3). Cross-listed as Ling. A 16 610 0 1502

750. Workshop. (2-4). Repeatable for credit. A 14 750 2 1502

Courses for Graduate Students Only

800. Introduction to Graduate Study in English. (3). Especially designed to prepare students to perform effectively in graduate classes in English. The course is concerned with: (1) basic bibliographical tools, (2) terminology, both technical and historical, (3) various approaches to the study of literature, such as intrinsic analysis of a literary work, the relationships of biography to literary study and the relevance of other disciplines, such as psychology, to literature; (4) the writing of interpretative and research essays. Throughout the semester a balance between criticism and research is maintained. A 14 800 0 1502

811. Graduate Readings in Pre-Renaissance Literature. (3). Early and middle English poetry, prose and drama to the 15th century. A 14 811 9 1502


814. Graduate Readings in 18th Century Literature. (3). Dryden, Pope, Swift, Fielding, Sterne, Johnson, Boswell, Burns and their contemporaries. A 14 814 9 1502

815. Graduate Readings in Romantic Literature. (3). Wordsworth, Coleridge, Byron, Shelley, Keats, Scott and their contemporaries. A 14 815 9 1502

816. Graduate Readings in Victorian Literature. (3). Writers from Carlyle to Yeats studied in relation to political events and the social, scientific and religious thought of the age. A 14 816 9 1502

817. Graduate Readings in 20th Century British Literature. (3). Yeats, Joyce, Lawrence, Auden, Spender and their contemporaries. A 14 817 9 1502

821. Graduate Readings in American Literature I. (3). From the beginnings to 1870, with emphasis on Emerson, Thoreau, Hawthorne, Melville, Whitman and Dickinson. A 14 821 9 1502
The Department of Geology offers Admission to the MS program in geology, normally including the achievement of the skills of geologic field mapping of igneous, metamorphic and sedimentary rocks; their petrology; and report writing on their geological evolution.

In general, students entering the program must have the same background required for a WSU Bachelor of Science degree, including science courses in chemistry, physics, and biology, mathematics and statistics; language (English, speech, and a modern foreign language), and computer science abilities. Students with undergraduate majors in the sciences, mathematics, or engineering are encouraged to apply because their training is appropriate for certain fields in modern geology. Most deficiencies can be removed by appropriate course work but prior consultation and evaluation are encouraged.

Degree Requirements

Although the department emphasizes field and laboratory skills of sedimentary geology, graduates may elect advanced courses and guided research to meet professional needs in a wide variety of geologic fields. Particular attention is directed to solving problems of mineralization and extraction, to environmental geology, and to improving the environment. The practical aspects of geology are stressed and modern approaches of computer applications are employed in solving problems.

The student must be accepted by the Graduate School and by the Department of Geology; this assures all prerequisites have been fulfilled. In general, 30 credit hours are required. One to 6 of these hours may be thesis credit and at least 15 must be at the 800 level. The department encourages students to take courses relevant to their program outside geology.

Tool Requirement. Although the department does not have a tool requirement, students are encouraged to obtain proficiency in modern languages (especially French, German, and/or Russian), especially if continuing for a PhD. Also it is important to have a certain level of proficiency in statistics and computer programming (FORTRAN, BASIC, and/or PASCAL are recommended).

Examinations. The student is required to present the thesis proposal—Geol. 890—orally before the faculty to obtain approval before initiating work on the project. The proposal must be presented in enough detail to assure the faculty of the research promise of the topic, and that the candidate can satisfactorily complete the project in the allotted time. Upon passing the oral examination, the written proposal is approved. After completing the thesis, the student must give a public oral defense. All graduate students are required to enroll in Geol. 701, a 1-hour credit seminar, as an introduction to experimental skills in research.

Courses for Graduate/Undergraduate Credit

501. Raw Materials of Antiquity. (3) 2R; 2L Lab fee. Nature of rocks, minerals, and metallic ores used in prehistory and ancient times. Also included are weathering, sedimentation, and soil forming processes; elements of stratigraphy; geologic history of the Pleistocene and Recent Epochs; relative and absolute dating; physical and chemical properties of rocks and minerals; and mining and metallurgical processes of antiquity. Prerequisite: Anthro. 501 or equivalent or instructor's consent. A 16 501 1 1914

520. Optical Mineralogy. (3) 1R; 6L Lab fee. Optical properties of amorphous and crystalline materials in polarized light. Use of the petrographic microscope in the quantitative determination of rock-forming minerals and mineraloids in thin section is used, and immersion oil methods are introduced. Prerequisite: Geol. 320. A 16 520 1 1914

523. Igneous and Metamorphic Geology. (3) 2R; 3L. The evolution of igneous and metamorphic rocks, their structures and the physicochemical processes controlling their origin. Petrochemical calculations, systematic petrographic examination and classification of igneous rocks; and rock suites. Field trips are required. Prerequisite: Geol. 320. A 16 523 1 1914

524. Petrography. (3) 1R; 6L Lab fee. Description, classification, and analysis of plutonic and volcanic igneous rocks; granulites and foliated metamorphic rocks; and fossiliferous clastics and chemical sedimentary rocks. Well-cuts with the petrographic microscope. Prerequisite: Geol. 520. A 16 524 1 1914

526. Sedimentary Geology. (3) 2R; 3L Lab fee. Origin, classification, primary structures, and physicochemical processes controlling deposition of sedimentary rocks, especially carbonates. An analysis of modern and ancient sedimentary depositional environments is included, as is a systematic petrographic study of sedimentary rocks in thin section, insoluble residues, and heavy-mineral analysis. Field trips are required. Prerequisite: Geol. 524. A 16 526 1 1914

540. Field Mapping Methods. (3) 9L Lab fee. Field mapping methods, with special reference to use of level, compass, barometer, alidade, and airphotos. Field trips are required. Prerequisite: Geol. 201 or Geol. 111G. A 16 540 1 1914

544. Structural Geology. (3) 2R; 3L Lab fee. Stress-strain theory and mechanics of rock deformation, description, and genesis of secondary structural features in crustal rocks, basic earthquake mechanics, isotropic and anisotropic properties of global tectonics, and laboratory solution of geometric problems in three dimensions and time.

Field trips and field problems are required. Prerequisites: Math. 112 or 123 and Geol. 552 (or taken concurrently). A 16 544 1 1914

552. Physical Stratigraphy. (3) 2R; 3L Lab fee. Description, classification, correlation, and interpretation of stratigraphic rock units, and the origin of primary structures of the two main sedimentary rock groups. Emphasis is on bioclastic micritic limestone, and physical properties of unconsolidated sediments are considered. Field trips in stratigraphic mapping methods is required. Prerequisites: Geol. 312; 320, and 540 or equivalent. A 16 552 1 1914

560. Geomorphology. (3) 2R; 3L Lab fee. Identification and interpretation of the genesis of landforms and a critical examination of processes producing the landforms, including elements of quantitative geomorphology. Field trips are required at the option of the instructor. Prerequisite: Geol. 111G. A 16 560 1 1914

562. Regional Geology of the United States. (3). A detailed regional survey of the general geology, geomorphology, stratigraphy, and structural geology and their interrelationships in the United States. Prerequisite: Geol. 560 or instructor's consent. A 16 562 0 1914

564. Map and Airphoto Interpretation. (3) 2R; 3L Lab fee. Elements of map and aerial photographic composition; interpretation and application of maps and photos in geology, geography, urban planning, land-use inventory, and regional survey. Field trips are required at the option of the instructor. Prerequisite: Geol. 111G, Geog. 201 or equivalent. A 16 564 1 1914

570. Biogeology. (3) 2R; 3L Lab fee. Systematic survey of major fossil biogeological materials in the analysis of the origin, evolution of life and paleoecological interpretation of ancient environments. A petrographic microscope and binocular microscopic examination is made of major fossil biogeological materials. Application of analytical fossil data to the solution of problems in biogeochronology, paleoecology, paleoecology, and paleobiology is included. Examples are cited from fossiliferous strata, and paleoceanography, and paleobiology. Field trips are required. Prerequisites: Geol. 312 or 552. A 16 570 1 1918

574. Special Studies in Biogeology. (3) 2R; 3L Lab fee. A systematic study in selected areas of biogeology and paleontology. Course content differs, upon demand, to provide in-depth analysis in the fields of (a) invertebrate paleontology, (b) vertebrate paleontology, (c) micropaleontology, (d) palynology, and (e) paleoecology. Appropriate laboratory instruction is given in the systematic taxonomy, and biogeological relationships within the selected fields listed. Field trips are required. Prerequisite: Lab fee. A 16 574 1 1918

581. Numerical Geology. (3) 2R; 3L Treatment of numerical data in geology including univariate and bivariate statistics and elementary programming in FORTRAN. A study of geological data and computer techniques used to analyze them as well as case histories of applications are emphasized. Prerequisites: Geol. 111G or 201 or 201, or permission of instructor. A 16 581 1 1914
620. Geochemistry. (3). The chemistry of earth materials and important geological processes and cycles operating on and within the earth through time. Prerequisites: Geol. 324 and Chem. 112. A 16 620 0 1915

630. Field Studies in Geology. (2-6). Off-campus systematic study in a selected area of geologic significance. Course content differs and is repeatable for credit. Laboratory work or field trips might be required at the option of the instructor. Offered on demand. Prerequisite: instructor’s consent. A 16 690 2 1914

640. Field Geology. (6). Field investigation of sedimentary, igneous, and metamorphic rock units and their structures. The application of mapping methods in solving geologic problems is included. This course is held at an off-campus field camp for five weeks (including weekends). Preparation of geologic columns, sections, maps, and an accompanying professionally written report are due on campus during the sixth week. Prerequisite: 12 credits of advanced geology, preferably in economic geology and content different. Where appropriate, travel, lodging, and board costs will be charged. A 16 6302 1914

650. Geohydrology. (3). 2R; 3L. Lab fee. The hydrologic cycle, physical, and chemical properties of water, fluid flow through permeable media; exploration for and evaluation of groundwater; water quality and pollution; and water pollution control. Prerequisite: Geol. 652 and Math. 243 or instructor’s consent. A 16 650 1 1914

651. Earth Science Instructional Methods. (3). Practice in teaching an introductory course in the earth sciences. Developing and presenting the latest scientific laboratory techniques and evaluating their effectiveness. May be taken more than once if content and objectives differ. Prerequisite: senior standing and permission of the department chairman. A 16 657 0 1914


660. Economic Geology. (3). 2R; 3L. Lab fee. Occurrence of metallic and nonmetallic economic minerals deposits and their physico-chemical principles governing their origin. Included are also a laboratory examination of ores and industrial minerals and elements of mining. Field trips are required. Prerequisite: Geol. 324. A 16 660 1 1914

662. Petroleum Geology. (3). 2R; 3L. Lab fee. The origin, migration, and accumulation of hydrocarbons in the earth’s crust, as well as the distribution and significant features of modern fields, and energy alternatives and impacts. Field trips are required. Prerequisite: Geol. 544. A 16 662 1 1914

664. Subsurface Geology. (3). 2R; 3L. Lab fee. All subsurface methods, including laboratory, logging, testing and treatment, valuation, and mapping methods. Field trips are required at the option of the instructor. Prerequisite: Geol. 652 and Phys. 214Q or equivalent. A 16 684 1 1914

680. Special Studies in Geology. (1-3). Systematic study in selected areas of geology. Course content differs and is repeatable for credit. Laboratory work or field trips might be required at the option of the instructor. Offered on demand. Prerequisite: instructor’s consent. A 16 680 2 1914

688. Independent Study in Geology. (1-3). Independent study on special problems in the field of geology: (a) general, (b) mineralogy, (c) petrology, (d) structural, (e) paleontology, (f) economic geology, (g) sedimentation, (l) stratigraphy, (i) geophysics, and (k) petroleum. A written final report required. Prerequisite: consent of sponsoring faculty. A 16 688 3 1914

701. Seminar. (1). Current topics in geology. Reports on current student and faculty research. Required of all new degree-seeking graduate students. A 16 701 9 1914

750. Workshop in Geology. (1-3). Short-term courses with special focus on geological problems. Prerequisites: graduate standing and/or instructor’s consent. A 16 750 2 1914

Courses for Graduate Students Only

800. Research in Geology. (3). 9L. Lab fee. Research in special areas of geology: (a) general, (b) mineralogy, (c) petrology, (d) structural, (e) paleontology, (f) economic geology, (g) sedimentation, (i) stratigraphy, (j) geophysics, and (k) petroleum. A written final report is required. Prerequisite: consent of sponsoring faculty. A 16 800 4 1914

820. Geochronology. (3). 2R; 3L. Lab fee. Theory of age-determining techniques for geologic and archaeological materials. Stratigraphic chronology, radiometric, geologic, chemical, and biological processes; evolutionary processes, and phenomenological dating techniques. Prerequisite: graduate standing in geology or anthropology (archaeology). A 16 820 1 1914

826. Sedimentary Petrology. (3). 2R; 3L. Lab fee. Theory of the origin, migration, and accumulation of sediments in the earth’s crust, as well as the distribution and significant features of modern fields, and energy alternatives and impacts. Field trips are required. Prerequisite: Geol. 544. A 16 826 1 1914

828. Igneous and Metamorphic Petrology. (3). 2R; 3L. Lab fee. Mineral paragenesis, bulk chemistry, and physical-chemical relationships; structures, textures, origins, and classifications of igneous and metamorphic rocks. Field trips are required. Prerequisite: consent of instructor. A 16 828 1 1914

840. Geotectonics. (3). Physical and geometric interpretation of crustal deformation and tectonic interpretation. The relationship of interior earth processes to crustal deformation is presented, with special reference to global tectonics. Field trips are required. Prerequisite: instructor’s consent. A 16 840 0 1914

852. Field Stratigraphy. (3). 2R; 3L. Lab fee. Advanced concepts and principles of stratigraphic analysis and interpretation, with emphasis on original sources and current research investigations. Field problem and field trips are required. Prerequisite: Geol. 544 and 552, or instructor’s consent. A 16 852 1 1914

870. Advanced Biogeology. (3). 2R; 3L. Lab fee. Paleoecological reconstruction of ancient plant/animal communities and environments. Environmental reconstruction, biogeography, synthesis of total raw data, and problem solving. Field trips are required. Prerequisite: course in biogeography or equivalent. A 16 870 1 1918

880. Mineral Deposits. (3). 2R; 3L. Lab fee. Advanced study of the occurrence, classification, and origin of metallic ore deposits, applied petrography of selected ores and host-rock suites; mineralogy of opaque ore minerals and their textures. Field trips are required. Prerequisite: Geol. 680. A 16 880 1 1914

990. Thesis. (1-6). Prerequisite: departmental consent. A 16 890 4 1914

Geography

Courses for Graduate/Undergraduate Credit

510. World Geography. (3). A general survey of world geography, including an analysis of the physical, political, economic, historical, and human geography of the major world regions. A 16 510 0 2206

520. Geography of the United States and Canada. (3). Physical, political, economic, historical, and human geography of the United States and Canada. A 16 520 0 2206

530. Geography of Latin America. (3). Physical, political, economic, historical, and human geography of Latin America. A 16 530 0 2206

542. Geography of Europe. (3). Physical, political, economic, historical, and human geography of Europe. A 16 542 0 2206

550. Geography of Africa. (3). Physical, political, economic, historical, and human geography of Africa. A 16 550 0 2206

572. Geography of Asia. (3). Physical, political, economic, historical, and human geography of Asia. A 16 572 0 2206

580. Economic Geography. (3). A geographical analysis of the distribution and utilization of basic world resources. A 16 580 0 2206

585. Mineral Resources. (3). Economic geography of the earth’s resources and distribution and utilization of metals, industrial and chemical minerals, fertilizers, building materials, fossil fuels, and water. A 16 585 0 2206

620. Field Studies in Geography. (2-6). Off-campus, systematic field study in a selected area of geographic significance.
The course is given upon demand and may be repeated for credit when the course locality and content differ. Where appropriate, travel, lodging, and board costs will be charged. A 16 620 2 2206

630. Geography of Mexico. (3). Physical, human, and cultural geography of Mexico, including prehistoric and archaeological and historical settings. Relations of sources to arts, crafts, industry, and architecture. A 16 630 0 2206

670. Urban Geography. (3). Lab fee. Geography of cities: the origin, growth, functions, characteristics and environmental problems of urban areas; structure and dynamic elements of intraurban space; land-use analysis and approaches to urban planning; and problems of urban ecology. A 16 670 1 2214

681. Mineral Crises of Antiquity, (3). An earth-resource viewpoint of the key events of civilization from prehistory through the 15th century. The role of mineral wealth in the affairs of man from prehistorical Grand Prehistory, through the Copper, Bronze, and Iron Ages; the Greek, Roman and Danubian Empires and related mineral resources of Europe and Africa; the gold-silver wealth of early Latin America; the mineral resources of revolutionary America; to the development of the American west for copper, silver, and gold. Prerequisites: upper division or graduate standing. A 16 681 3 2206

695. Special Studies in Geography, (1-3). 3R or 2R; 3L. Lab fee. Special studies in a selected area of topical interest in geography. The course is given upon demand and is-repeatable; credit when course content differs. Field trips might be required. Prerequisite: junior standing. A 16 695 3 2206

750. Workshop in Geography, (1-4). Short-term courses with special focus on geographical problems. Prerequisite: instructor's consent. A 16 750 2 2206

Course for Graduate Students Only

820. Field Studies in Geography, (2-6). Off-campus, systematic field study in a selected area of geographic significance. The course is given upon demand and may be repeated for credit when the course locality and content differ. Where appropriate, travel, lodging, and board costs will be charged. Prerequisite: instructor's consent. A 16 820 2 2206

History

Graduate Faculty

Distinguished Professor: J. Kelley Sowards (Distinguished Professor of Humanities)

Professors: James C. Duram, John L. Hambarger (chairperson), Craig Miner, Martin A. Reif, Phillip D. Thomas, William F. Unruh


Assistant Professor: Helen S. Hurdley, William H. Richardson

Master of Arts and Areas of Specialization

The history department offers courses of study leading to the Master of Arts (MA) with specialization in U.S. history or in European history.

Admission Requirements

Admission to the MA program in history requires the completion of an undergraduate major in history, or the equivalent; a grade point average of 2.75 or better, including all undergraduate hours; and a 3.00 grade point average in history. Under unusual circumstances, applicants with less than a 3.00 average in history may be granted a probationary admission.

Degree Requirements

One of two plans may be followed for a graduate degree in history. Plan 1 is a thesis program, and plan 2 is a non-thesis program.

Plan 1. Thesis Program. In plan 1 students must complete a minimum of 36 hours, including Hist. 725, which must be taken during the first year of enrollment.

Students following the American history emphasis must take the following:

American history seminars 3 hours

European history seminars 3 hours

Thesis research 2 hours

Thesis 1-2 hours

The majority, but not all, of the remaining hours must be in American history courses for a total of 36 hours. Students must also satisfy the foreign language requirement and pass written examinations in three comprehensive fields. One of these fields must be in European history.

Students following the European history emphasis must take the following:

European history seminars 6 hours

American history seminar 3 hours

Students must take 12 hours in history courses numbered 700 or above.

The majority, but not all, of the remaining hours must be in European history for a total of 36 hours. Students must also satisfy the foreign language requirement and pass written examinations in three comprehensive fields. One of these fields must be in American history.

Comprehensive Fields

Fields of study included in the comprehensive examinations for the MA are:

Ancient Greece and Rome

Early and Late Middle Ages

Early Modern Europe to 1815

Modern Europe since 1789

Courses for Graduate/Undergraduate Credit

501. The American Colonies. (3). Colonization of the New World, with emphasis on the British peoples and their development. A 16 501 0 2206

502. The American Revolution and the Early Republic. (3). Examination of selected phases of the revolutionary, confederation and federal periods. A 16 502 0 2205

503. The Age of Jefferson and Jackson. (3). Political, economic and cultural development of the United States from the election of Thomas Jefferson to the end of the Mexican War with emphasis on the growth of American nationalism. A 16 503 0 2205
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>612 &amp; 613. European Diplomatic History.</td>
<td></td>
<td>Overview of Europe in the 19th and 20th centuries.</td>
</tr>
<tr>
<td>614. Economic History of Europe.</td>
<td></td>
<td>Studies international political and diplomatic practices, with emphasis on the actions of the great powers and their strategies from the conference of Europe to World War I. Veneers settlement, totalitarian aggression. World War II, the cold war and decolonization of South-East Asia and the Middle East as prelude to major power involvement.</td>
</tr>
<tr>
<td>615. Hitler and the Third Reich.</td>
<td></td>
<td>Focuses on the origins and establishment and collapse of the Weimar Republic, the rise and fall of Hitler's Third Reich, the divided Germany of the present and the role of each in world affairs.</td>
</tr>
<tr>
<td>617. The Holocaust.</td>
<td></td>
<td>Investigates the origins and development of the concentration camp system in Nazi Germany and its transition into a death camp system.</td>
</tr>
<tr>
<td>618. Media Courses in History.</td>
<td>(2-3)</td>
<td>Courses offered by the Department of History which are offered through various media: radio, television and newspaper. Areas of historical emphasis vary from course to course.</td>
</tr>
<tr>
<td>619. A History of Tudor and Stuart England.</td>
<td></td>
<td>Explores the constitutional, social, economic, intellectual and religious developments in English history from 1485 to 1714.</td>
</tr>
<tr>
<td>620. Media Management.</td>
<td>(3)</td>
<td>Focuses on business and management operations of mass media enterprises.</td>
</tr>
<tr>
<td>621. 18th Century Great Britain.</td>
<td></td>
<td>Examines the accession of William and Mary to the French Revolution.</td>
</tr>
<tr>
<td>622. 19th Century Great Britain.</td>
<td></td>
<td>Studies the French Revolution to the death of Queen Victoria.</td>
</tr>
<tr>
<td>623. History of Science, (3 &amp; 3)</td>
<td></td>
<td>Covers ancient and medieval science from its beginnings in the Near East to the end of the Middle Ages.</td>
</tr>
<tr>
<td>624. Social and Environmental History of Science and Technology.</td>
<td></td>
<td>Examines the social and environmental implications of the development of science and technology from its earliest beginnings to the present day.</td>
</tr>
<tr>
<td>625. Military History.</td>
<td>(3)</td>
<td>Major military developments and the conduct of war from antiquity to the mid-20th century.</td>
</tr>
<tr>
<td>626. The Impact of Total War, 1939 to 1945.</td>
<td></td>
<td>Focuses on the military powers since World War I, emphasizing the nature of the modern total war, new weapons, strategy, technology and tactics. The conduct of World War II is also studied, with conclusions drawn as to the impact of war on modern society.</td>
</tr>
<tr>
<td>627. History of Military Thought, (3)</td>
<td></td>
<td>Historical review and appraisal of the military thought of such theorists as Machiavelli, Clausewitz, Mahan, Douhet, Liddell Hart, and Mao Tse Tung.</td>
</tr>
<tr>
<td>628. Historiography.</td>
<td>(3)</td>
<td>Review of the major schools of historical thought, philosophies of history and eminent historians from the ancient world to the present. This course is required of history majors.</td>
</tr>
<tr>
<td>629. Advanced Historical Method.</td>
<td></td>
<td>Focuses on basic historical research methods, the general character of field bibliographies and recent interpretations and the techniques of professional narrative development. Required of graduate degree students during their first year of enrollment.</td>
</tr>
<tr>
<td>630. Seminar in American History.</td>
<td>(3)</td>
<td>repeatable for credit.</td>
</tr>
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<td>631. Seminar in American History.</td>
<td>(3)</td>
<td>repeatable for credit.</td>
</tr>
<tr>
<td>632. 18th Century Great Britain.</td>
<td></td>
<td>Explores the French Revolution to the death of Queen Victoria.</td>
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<tr>
<td>634. 20th Century Great Britain.</td>
<td></td>
<td>Focuses on the French Revolution to the death of Queen Victoria.</td>
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<td>(3)</td>
<td>Repeatable for credit.</td>
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<td>(3)</td>
<td>Repeatable for credit.</td>
</tr>
<tr>
<td>645. Workshop in History.</td>
<td>(1-3)</td>
<td>Repeatable for credit but will not satisfy requirements for history majors.</td>
</tr>
<tr>
<td>646. Courses for Graduate Students Only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>801. Thesis Research.</td>
<td>(2)</td>
<td>A 18 801 4 2205</td>
</tr>
<tr>
<td>802. Thesis.</td>
<td>(2)</td>
<td>A 18 802 4 2205</td>
</tr>
<tr>
<td>810. Thesis.</td>
<td>(2)</td>
<td>A 18 810 3 2205</td>
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</tbody>
</table>

**Journalism**

**Graduate Faculty**

**Associate Professor: Charles Pearson (chairperson)**

Although a graduate program is not currently available in journalism, the following courses may apply toward a master's degree, if approved in advance of enrollment by the student's adviser, the chairperson of the major department and the dean of the Graduate School. These courses may be taken as part of the requirements in the mass communication division of the Master of Arts in communications program.

**Courses for Graduate/Undergraduate Credit**

<table>
<thead>
<tr>
<th>Course Title</th>
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**Journalism**

**Graduate Faculty**

**Associate Professor: Charles Pearson (chairperson)**

Although a graduate program is not currently available in journalism, the following courses may apply toward a master's degree, if approved in advance of enrollment by the student's adviser, the chairperson of the major department and the dean of the Graduate School. These courses may be taken as part of the requirements in the mass communication division of the Master of Arts in communications program.

**Courses for Graduate/Undergraduate Credit**

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**Journalism**

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Linguistics

Graduate Faculty
Assistant Professors: Tina L. Bennett-Kastor, Alvin Gregg (coordinate)

Although there is no graduate program in linguistics, the following courses are available for graduate credit.

Courses for Graduate/Undergraduate Credit


595. Linguistics. Directed Readings. (2-3). Credit assigned to Group A, B, or C depending on content. Repeatable for credit. A 10 695 3 1505

The following abbreviations are used in the course descriptions: R stands for lecture and L for laboratory. For example, 4R 2L means 4 hours of lecture and 2 hours of lab.

Group B—Linguistic Study of Specific Languages or Language Groups

Courses for Graduate/Undergraduate Credit

610. English, Old English. (3). Cross-listed as Eng. 610. A 10 610 0 1505


505. French, Advanced Phonetics and Diction. (2). Cross-listed as Fr. 505. A 10 505 0 1102

505. Spanish, Spanish Phonetics. (2). Cross-listed as Span. 505. A 10 505 0 1105

579. German, Linguistics in the Teaching of German. (3). Cross-listed as Ger. 579. A 10 579 0 1505

635. French and Spanish. Introduction to Romance Linguistics. (3). Cross-listed as Fr. 635 and Span. 635. A 10 635 0 1105

Group C—Areas of Contact Between Linguistics and Other Disciplines

Courses for Graduate/Undergraduate Credit

545. Psychology, Psycholinguistics. (3). Cross-listed as Psych. 545. A 10 545 0 2001

651. Anthropology, Language and Culture. (3). Cross-listed as Anthro. 651. A 10 651 0 2202

727. CDS, Teaching English as a Second Language. (2). Cross-listed as CDS 727, CDS 727. A 10 727 0 1105


Others

Courses for Graduate/Undergraduate Credit

590. Linguistics. Special Studies. (2-3). Topic selected and announced by individual instructor. Credit is assigned to Group A, B, or C depending on content. Repeatable for credit when content varies. A 10 590 2 1505

595. Linguistics, Directed Readings. (2-3). Credit assigned to Group A, B, or C depending on content. Repeatable for credit. A 10 695 3 1505

Graduate Faculty

Professors: Lucio Arteaga, Dharam V. Chopra, Alan R. Elcrat, William M. Perel
Associate Professors: Prem N. Bajaj, Stephen W. Brady, Jeneva Brewer, Gary D. Crown, Esmond E. DeVun, Jr., (graduate coordinator), John J. Hutchinson (chairperson), Buddy A. Johns, Jr., Donald G. Killian, L. Alan MacLean, William H. Richardson, Robert C. Wherry
Assistant Professors: Maureen H. Fennick, Thomas C. French, Buma Fridman, Leonid Krop, Kirk Lancaster, Russell Maik, Kenneth Miller, Diana Palenz, Philip Parker

Master of Science

The mathematics department offers a course of study leading to the Master of Science (MS).

Admission Requirements

Students will be admitted to full graduate standing if they have the equivalent of an undergraduate major in mathematics, and meet Graduate School admission requirements.

Degree Requirements

To complete the MS, students must earn 30 semester hours of graduate credit, with a minimum of 18 semester hours in courses in mathematics or statistics offered by the department (exclusive of thesis) numbered 700 or above, including three of the following four courses: Math. 713, 725, 743, 745. Mathematics or statistics courses numbered below 600 do not count toward the 30 hours needed for the MS in mathematics. Generally not more than 6 hours of approved course work may be transferred from another university. A student’s program must be approved by the department.

Students may take either a thesis or a nonthesis option. Students electing to write a thesis should enroll in Math. 885 for 4 hours credit.

A comprehensive examination is required of all degree candidates.

Courses for Graduate/Undergraduate Credit

Credit in courses numbered below 600 is not applicable toward the MS in mathematics.

501. Elementary Mathematics. (5). A study of topics necessary to an understanding of the elementary school curriculum, such as set...
511. Linear Algebra. (3). An elementary study of linear algebra, including an examination of linear transformations and matrices over finite dimensional spaces. Prerequisite: Math. 344. A 20 511 0 1701

513. Fundamental Concepts of Algebra. (3). Groups, rings and fields. Prerequisite: Math. 511 or departmental consent. A 20 513 0 1701

545. Integration Techniques and Applications. (3). A study of the basic integration techniques used in applied mathematics. Included are the standard vector calculus treatment of line and surface integrals, Green's Theorem, Stokes' Theorem, and The Divergence Theorem. In addition, the study of improper integrals with application to special functions is included. Prerequisite: Math. 344 with C or better. A 20 545 0 1701

547. Advanced Calculus I. (3). A detailed study of infinite series, continuity and differentiability. Prerequisite: Math. 344 with a C or better. A 20 547 0 1701

550. Ordinary Differential Equations. (3). An introduction to the qualitative theory of differential equations with constant coefficients, variation of parameters and existence and uniqueness for initial value problems. A 20 550 0 1703

551. Numerical Methods. (3). Approximating solutions of linear and nonlinear equations, interpolation and approximation, numerical differentiation and integration, and the numerical solution of first and second order differential equations. Some use of the computer. Prerequisites: CS 201, 202 or 205 and Math. 344 with a C or better, or departmental consent. A 20 551 1 1703

553. Mathematical Models. (3). This course will cover topics from the fields of engineering, technology, and the natural and social sciences. The emphasis will be to describe a problem and then develop the mathematics necessary to solve the problem. The case studies will be selected to illustrate several of the topics from among: linear algebra, differential and integral equations, stochastic processes, statistics and combinatorics. Each student will be required to participate in a term project which will be the solution of a particular problem approved by the instructor. Prerequisite: Math. 344 or departmental consent. A 20 553 0 1703

557. Optimization Theory. (3). An introduction to selected topics in linear and nonlinear optimization. The revised simplex method is developed along with a careful treatment of duality. The theory is then extended to solve parametric, integer and mixed integer linear programming problems. Prerequisite: Math. 511. A 20 557 0 1703

580. Selected Topics in Mathematics. (3). Topic to be chosen from among topics not otherwise represented in the curriculum.
Statistics

Courses for Graduate/Undergraduate Credit
Credit in courses numbered below 600 is not applicable toward the MS in mathematics.

570. Special Topics in Statistics. (3), Topics of interest not otherwise available. Prerequisite: departmental consent. A 20 570 1 1702

571-572. Statistical Methods I and II. (3-3). Probability models, joint and marginal estimates, statistical tests of hypothesis, correlation and regression analysis, introduction to computer program, statistical techniques, least squares, analysis of variance and topics in design of experiments. Prerequisite: Math. 144 or 243 or departmental consent. A 20 571 1 1702; A 20 572 1 1702

574. Elementary Survey Sampling. (3). A brief review of basic statistical concepts and simple random, stratified, cluster and systematic sampling, selection of sample size, ratio and estimation costs. Applications will involve problems from the social and natural sciences, business and other disciplines. Prerequisite: any elementary course in statistics, such as Stat. 370, Soc. 501 or Psych. 442. A 20 574 1 1702

576. Applied Nonparametric Statistical Methods. (3). Assumptions and needs for nonparametric rank tests and other nonparametric inferential techniques. Applications will involve problems from engineering and medicine, education, social and natural sciences, and other disciplines. Prerequisite: any elementary statistics course such as Stat. 370, Soc. 501 or Psych. 442; A 20 576 1 1702

581. Probability. (3). A study of axioms of probability, discrete and continuous random variables, probability distribution functions, moment generating functions, and sequences of random variables. Prerequisite: Math. 344 with C or better. A 20 581 1 1701

582. Applied Stochastic Processes. (3). A study of random variables, expectation, limit theorems, Markov chains and stochastic processes. Prerequisite: Stat. 651 or 771 or departmental consent. A 20 582 1 1702

771-772. Theory of Statistics I and II. (3). An examination of stochastic dependence, distributions of functions of random variables limiting distributions, order statistics, theory of statistical inference, nonparametric tests and analysis of variance and covariance. Prerequisite: Math. 545 or 547 with C or better or departmental consent. A 20 771 1 1702; A 20 772 1 1702

Courses for Graduate Students Only

875. Special Topics. (2-3). Repeatable with departmental consent. Prerequisite: departmental consent. A 20 875 1 1701

880. Proseminar. (1). Oral presentation of research in areas of interest to the students. Prerequisite: major standing. A 20 880 1 1701

881. Individual Reading. (1-5). Prerequisite: departmental consent. Repeatable up to a maximum of 5 hours with departmental consent. A 20 881 1 1701

885. Thesis. (1-4). May be repeated to a maximum of 4 hours credit. Prerequisite: departmental consent. A 20 885 1 1701

Minority Studies

Graduate Faculty

Associate Professor: John C. Gaston (chairperson)

Although a graduate program is not currently available in minority studies, the Department of Minority Studies participates extensively with other departments in the multidisciplinary Master of Arts in communications (MA) program. See requirements for the MA program in the Communications section of the Graduate School Bulletin.

Courses for Graduate/Undergraduate Credit

512. Issues in Minority Aging. (3). Addresses the needs and interests of students who are interested in (1) providing services to the minority elderly, (2) exploring the "issues" of concern to minority elderly, (3) becoming familiar with the rights of older/majority Americans, (4) learning the legal procedures for resolving many of the specific problems of the minority elderly, and (5) offering training and tested solutions encountered by minority elderly. Crosslisted as Geront. 512. Prerequisites: Min. Stud. 100Q, Geront. 100Q, Soc. 211Q, or instructor's consent. P 1 512 1 1702

540. Advanced Multiracial Cross-Cultural Communications. (3). An advanced study on topics in human relations. Prerequisite: Min. Stud. 380 or concurrent enrollment. A 30 540 1 1702

545. Cross-Cultural Communications Theory. (3). Varying in content, this course offers specific consideration of important areas of cross-cultural communications such as current issues, theory of structured exercises and laboratory planning. Prerequisite: Min. Stud. 540 or concurrent enrollment. A 30 545 1 1702

548. Practicum in Cross-Cultural Communications. (3). An investigation and analysis of methods of creative research in cross-cultural communications, with emphasis on innovative designs that can gather legitimate data on specific ethnic groups. The setting up and design of a research prospectus is fundamental. Also evaluative research will be studied. Prerequisite: Min. Stud. 545 or concurrent enrollment. A 30 548 1 1702

580. Individual Projects. (3). Course is designed to provide the student with an educational and experimental background that relates to the minority experience in America. Lectures, written assignments, encounter groups and related research in the minority communities constitute the teaching methodology for the course. Prerequisite: 50 hours of Wichita State credit or departmental consent. Repeatable for a total of 6 hours. A 30 580 1 1702

725. Concepts of Cross-Cultural Communications. (3). A critical survey of the concepts of cross-cultural communications. An in-depth examination of the rationales used to evaluate different ethnic groups, language and behavior. This course provides a conceptual understanding of special implications and necessary adaptations of communications to, between and among diverse ethnic groups in our society. Selections from scholars such as Prosser, Smith, Jahn, Giffin, Patton, Power, Gollman, Rogers and Aranguren will be studied. A 30 725 1 1702

Course for Graduate Students Only

860. Seminar in Cross-Cultural Communication. (3). A review of recent developments, research and literature in the field. Emphasis is on language and behavior in cross-cultural communication. Prerequisites: graduate standing and instructor's consent. A 30 860 1 1702

Modern and Classical Languages and Literatures

Graduate Faculty

Professors: Kenneth C. Peterson, Allain C. Cross, Lynn W. Wingert

Associate Professor: Ginette Adamson, Anthony J. Cardenas, Gesela Ritchie, Dieter Baumann

Assistant Professor: Carl Adamson, Wilson Bairdridge, Patrick E. Kaho, John Koppenhaver (chairperson), E. Miguel Muñoz, Eunice D. Myers (graduate coordinator), Kenneth C. Pettersen, Michael Vincent

French

Although a complete graduate program is not currently available, the following courses may apply toward a master's degree if approved in advance of enrollment by the student's adviser, the chairperson of the Department of Modern and Classical Languages and Literatures and the dean of the Graduate School.
Courses for Graduate/Undergraduate Credit

Upper-division courses are given on a rotating basis. Fr. 300 is a prerequisite for all upper-division literature and civilization courses, unless otherwise indicated. All literature courses, including Fr. 223 and 300, may fulfill the general education literature requirement.

515. Major Topics. (1-4). Special studies in (a) language, (b) literary reports, (c) commercial French, (d) the language laboratory, (e) music, (f) composition and (g) problems in teaching French. Repeatable for credit. Prerequisite: departmental consent. A 26 515 0 1102

525. Advanced Conversation. (A). A course designed to increase fluency in speaking French. Assignments include oral reports, dialogues and work in the language laboratory. Prerequisite: Fr. 325 or equivalent. A 26 525 0 1102

526. Advanced Composition and Grammar. (3). Emphasis on theme writing, original compositions and detailed study of modern French grammar. Prerequisite: Fr. 220 or departmental consent. A 26 526 0 1102

530. Introduction to French Literature. (3). Survey of French literary history from the Middle Ages to the present. Prerequisite: Fr. 300. A 26 530 0 1102

540Q. French Literature in English Translation. (3). May be used to satisfy the general education literature requirement but does not count toward a French major or minor. A 26 540Q 0 0312

541Q. Black French Literature in English Translation. (3). A study of the concept of Negritude through the works of major contemporary African and Caribbean writers. No knowledge of a foreign language is necessary. This course may count toward a French major or minor if readings and papers are done in French. A 26 541Q 0 0312

623. Seminar in French. (3). Seminar in French literature, language, or civilization. Prerequisite: two literature courses in French numbered above 500. Repeatable for credit. A 26 623 9 1102

630. Medieval and Renaissance French Literature. (3). Prerequisite: Fr. 300. A 26 630 0 1102

631. 17th Century French Literature. (3). Prerequisite: Fr. 300. A 26 631 0 1102

632. 18th Century French Literature. (3). Prerequisite: Fr. 300. A 26 632 0 1102

633. 19th Century French Literature. (3). Prerequisite: Fr. 300. A 26 633 0 1102

634. Contemporary French Literature. (3). Prerequisite: Fr. 300. A 26 634 0 1102

635. Introduction to Romance Language Linguistics. Cross-listed as Span. 635 and Ling. 635. An introduction to the historical phonology and morphology of the romance languages with particular emphasis on French and Spanish. Prerequisite: departmental consent. A 26 635 0 1102

750. Workshop in French. (2-4). Repeatable for credit. A 26 750 0 1102

815. Special Studies in French. (3). Prerequisite: departmental consent. Repeatable for credit. A 26 815 0 1102

German

Although a complete graduate program is not currently available in German, the following courses may apply toward a master's degree, if approved in advance of enrollment by the student's adviser, the chairperson of the German department, and the dean of the Graduate School.

Courses for Graduate/Undergraduate Credit

524. Advanced Conversation and Composition. (3). Prerequisites: Ger. 304 or instructor's consent. A 17 524 0 1103

531. Practicum in German-English Translation. (3). Supervised individual reading and translation from German into English of material in the student's area of interest: humanities, social sciences, natural sciences, or current affairs. A 17 531 0 1103

577. Introduction to Linguistics. (3). Cross-listed as Ling. 577 and Anthro. 577. Principles of descriptive and historical linguistics: phonetics and phonology, morphology and syntax. The phonological and grammatical structures of Modern Standard German and its development from Proto-Germanic. This course is required for a German major. Prerequisite: Ger. 112 or equivalent of any foreign language. A 17 577 0 1505

579. Linguistics in the Teaching of German. (3). Cross-listed as Ling. 579. The principles of linguistics applied to the problems of teaching German, with a contrastive analysis of the phonological and grammatical structures of English and German. Prerequisite: Ger. 577 or instructor's consent. A 17 579 0 1505

641. German Literature in Translation. (3). Consideration of the works of one major author, or a literary movement or trend or of a specific genre. Repeatable once for credit. Prerequisite: upper division standing. A 17 641 0 0312

650. Directed Study. (1-3). Enrollment in any of the areas listed takes place only upon consultation with the department and agreement with the instructor concerned: (a) introduction to the study of German literature; (b) survey I: from the medieval period through the Age of Goethe; (c) survey II: 19th century to 1945; (d) contemporary literature; the literature of both Germanics since 1945; (e) special topics in literature, repeatable once for credit; (f) special topics in language, repeatable once for credit. Prerequisite: Ger. 244 or instructor's consent. A 17 650 0 1103

750. Workshop in German. (2-4). Repeatable once for credit. A 17 750 0 1103

Greek

Although a complete graduate program is not currently available in Greek, the following courses may apply toward a master's degree.

Courses for Graduate/Undergraduate Credit

515. Special Studies. (1-4). Topic announced by instructor. Repeatable for credit. Prerequisite: instructor's consent. A 26 515 0 1103

531. Advanced Greek. (3). Sophocles and Euripides. Prerequisite: Greek 224. A 26 531 0 1103

532. Advanced Greek. (3). Thucydides. Prerequisite: Greek 531. A 26 532 0 1103

Italian

Although a complete graduate program is not currently available in Italian, the following courses may apply toward a master's degree.

Courses for Graduate/Undergraduate Credit

515. Major Topics. (2-4). Special studies in Italian language, literature and civilization. Repeatable for credit. Prerequisite: departmental consent. A 26 515 0 1104

531. Introduction to Italian Literature. (3). Prerequisite: Ital. 224 or departmental consent. A 26 531 0 1104

540. Medieval and Renaissance Italian Literature in Translation. (3). Representative selections in English translation from Italian medieval and Renaissance literature. The works of Dante and other writers in their medieval context: Boccaccio and the Waning of the Middle Ages; Petrarca and the formation of a new, humanistic civilization—reflections and divergences in the 14th, 15th and 16th centuries are all included. A knowledge of Italian is not a prerequisite, and the course does not count toward an Italian minor. A 26 540 0 0312

Latin

Although a complete graduate program is not currently available in Latin, the following courses may apply toward a master's degree.

Courses for Graduate/Undergraduate Credit

Latin 210 or 224 or departmental consent is the prerequisite for all upper-division courses.

541. Roman Lyric Poetry. (3). The lyric poems of Catullus and Horace with emphasis on imagery, symbolism, structure, diction and meter. A 26 541 0 1103

542. Vergil's Aeneid. (3). Selected books of the Aeneid in the original and the rest in translation. Study of imagery, symbolism, structure, meter and diction. Consideration is given to the place of the Aeneid in the Augustan Rome and in the epic tradition. A 26 542 0 1103

543. Roman Drama. (3). A study of Roman comedy and tragedy, their Greek background and their influence on European literature. Included are selected plays of Plautus, Terence and Seneca, some in the original and some in translation. A 26 543 0 1109

544. Love in Ancient Rome. (3). The relationship of the sexes and the use of myth in the poetry of Ovid, Propertius and Tibullus. A 26 544 0 1109

545. The Roman Novel. (3). Reading of the Satyricon of Petronius and the Golden Ass of

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Apuleius. The portions that are not read in Latin are read in English. Consideration is given to the development of the novel from its Greek beginnings up to the time of Apuleius and beyond. A 26 545 0 1109

546. Advanced Latin. (3). Directed reading of Latin. Reading may be combined with Latin prose composition at the option of the students. Repeatable for credit when content varies. A 26 546 0 1109

651. Roman Historians. (3). A study of the development of Roman historiography. Readings from Sallust, Caesar, Livy and Tacitus. A 26 651 0 1109

652. Cicero. (3). The orations, letters and essays of Cicero. The study concentrates on Cicero as the master of Latin prose and as one of the most important political figures of the fall of the Roman Republic. A 26 652 0 1109

653. Lucretius and Epicureanism. (3). Reading of Lucretius' De Rerum Natura and study of Epicureanism, the atomic theory and Democritian materialism. Consideration is given to the place of Lucretius in Latin poetry. A 26 653 0 1109

750. Workshop in Latin. (2-4). Repeatable for credit. A 26 750 2 1109

Spanish

Master of Arts and Areas of Specialization

The Department of Modern and Classical Languages and Literatures offers courses of study leading to the Master of Arts (MA) in Spanish. This degree program allows for specialization in Spanish language and literature or in Spanish-American literature.

Admission Requirements

Admission to the program requires the completion of 24 hours of undergraduate Spanish, 8 hours of which have been on the junior-senior level.

Degree Requirements

The MA in Spanish requires the completion of 32 semester hours, including at least two seminars—Span. 623, 831 or 832— that require research papers. Of these hours, 12 must be in courses numbered 800 or above. Each program must include 23 hours of Spanish, including Span. 526, 531, 532, 621 if they or their equivalents have not been taken as undergraduate courses, and 9 hours of related fields. A candidate for a degree must pass Span. 526 or an equivalent course with a grade of B or better at either the undergraduate or graduate level.

Related fields typically include another foreign language; art; English, American and foreign literatures; Latin American history; or geography. All related field courses must be approved by the chairperson of the Department of Modern and Classical Languages and Literatures and the graduate coordinator.

Special recommendation is strongly made that all MA candidates in Spanish earn a minimum of 4 hours of transferable credit in a university located in a Spanish-speaking country.

Examinations

Before the MA in Spanish is granted, all candidates must pass written and oral comprehensive examinations over reading lists in three areas of specialization of their choice and prove by written examination a reading knowledge of a second foreign language.

Courses for Graduate/Undergraduate Credit

505. Spanish Phonetics. (2). Cross-listed as Ling. 505. Prerequisite: any 200-level course or departmental consent. A 26 505 0 1105

515. Major Topics. (1-4). Special studies in (a) language, (b) literary reports, (c) commercial Spanish, (d) the language laboratory, (e) music, (f) composition, (g) problems in teaching Spanish, (h) advanced conversation. Repeatable for credit. Prerequisite: departmental consent. A 26 515 0 1105

525. Spanish Conversation III. (2). Prerequisite: Span. 325 or departmental consent. A 26 525 0 1105

526. Advanced Grammar and Composition. (3). Prerequisite: Span. 220 or departmental consent. A 26 526 0 1105

531. Survey of Spanish Literature. (3). Main currents of Spanish literature from 1700 to the present. Prerequisite: Span. 300 or departmental consent. A 26 531 0 1105

532. Survey of Spanish Literature. (3). Spanish literature from the beginning to 1700. Prerequisite: Span. 300 or departmental consent. A 26 532 0 1105

534. Contemporary Spanish Theater. (3). Prerequisite: Span. 300 or departmental consent. A 26 534 0 1105

536. Contemporary Spanish Novel. (3). Prerequisite: Span. 300 or departmental consent. A 26 536 0 1105

540Q. Contemporary Spanish Literature in English Translation. (3). Course content may vary from semester to semester, including Spanish and/or Latin American literature. This course may count towards a Spanish major or minor with departmental consent. Repeatable for credit. Prerequisite: departmental consent when counted toward a Spanish major or minor. A 26 540Q 0 1105

543Q. Contemporary Chicano Literature. (3). A study of modern and contemporary Chicano writers in the United States, including such writers as Alurista, Ernesto Galarza, Rudolfo Anaya, José Villarreal and Cory Gonzalez. Knowledge of Spanish is helpful but not necessary. This course does not count toward a Spanish major or minor. A 26 543Q 0 1105

552. Business Spanish. (3). This course will provide students the opportunity to learn and practice commercial correspondence, business vocabulary, translation and interpretation for business texts. Prerequisite: Span. 526. A 26 552 0 1105

557. Literary and Technical Translating. (3). Extensive translation of literary works, technical and legal documents from Spanish to English and English to Spanish. Prerequisite: Span. 526 or departmental consent. A 26 557 0 1105

560. Spanish Play Production. (1-3). In-depth study of a play as a work of literature, to be followed by the actual production of the work for the general public. Repeatable for credit. Prerequisite: Span. 300 or departmental consent. A 26 620 0 1105

620. Survey of Latin American Literature. (3). Main currents of Latin American literature from 1500 to 1800. Prerequisite: Span. 300 or departmental consent. A 26 620 0 1105

621. Survey of Latin American Literature. (3). Main currents of Latin American literature from 1800 to present. Prerequisite: Span. 300 or departmental consent. A 26 621 0 1105

622. Special Studies. (1-4). Topic for study chosen with the aid of instructor. Repeatable for credit. Prerequisite: instructor's consent. A 26 622 0 1105

623. Seminar in Spanish. (1-5). Special studies in (a) language, (b) Spanish and Spanish-American culture, (c) Spanish and Spanish-American literature and civilization, and (d) methods of teaching Spanish in the elementary and secondary schools. Repeatable for credit. Prerequisite: departmental consent. A 26 623 0 1105

625. Contemporary Spanish-American Novel. (3). Prerequisite: Span. 300 or departmental consent. A 26 625 0 1105

626. Spanish Civilization. (3). Intensive study of Spanish culture, including historical and geographical factors in its development, and its contributions to world civilization. Portuguese civilization also is considered. A 26 626 0 1105

627. Ibero-American Civilization. (3). Intensive study of Ibero-American culture, including the historical and geographical factors in its development and its contributions to world civilization. A 26 627 0 1105

628. Contemporary Latin American Theater. (3). A study of contemporary theater from 1900 to present. Prerequisite: Span. 300 or departmental consent. A 26 628 0 1105

629. Latin American Essay. (3). Study of nineteenth and twentieth century Latin American writers dealing with the Latin American essay. Prerequisite: Span. 300 or departmental consent. A 26 629 0 1105

630. Society and the Artist in Latin America. (3). Latin American culture, social structure, and the role of the artist in modern Latin America. Prerequisite: Span. 300 or departmental consent. A 26 630 0 1105

631. Latin American Short Story. (3). Study of the main writers in contemporary Latin American literature. Prerequisite: Span. 300 or departmental consent. A 26 631 0 1105

632. Latin American Poetry. (3). Study of contemporary poets: Neruda, Guillen, PARRA, Neruda, Paz, Vallejo, Cardenal. Prerequisite: Span. 300 or departmental consent. A 26 632 0 1105
635. Introduction to Romance Linguistics. (3). Cross-listed as Fr. 635 and Ling. 635. An introduction primarily to the historical phonology and morphology of the Romance languages, with particular emphasis on French and Spanish. Prerequisite: departmental consent. A 26 635 0 1105

750. Workshop in Spanish. (2-4). Repeatable for credit. A 26 750 2 1105

Courses for Graduate Students Only

801. Spanish Linguistics. (3). Historical and structural study of the Spanish language. A 26 801 0 1105

805. Directed Readings. (1-4). Readings and assignment of reports, literary critiques and special projects in linguistics are included. A 26 805 3 1105

826. Grammar and Stylistics. (3). Intensive study of advanced grammar and stylistic usage. A 26 826 0 1105

831. Seminar in Spanish Literature. (3). (a) Middle Ages, (b) Renaissance, (c) Golden Age, (d) the novel, (e) modern novel, (f) Generation of '27, (g) contemporary novel, (h) 20th century theater, (i) Spanish romanticism, (j) 20th century poetry and (m) literary criticism. A 26 831 9 1105

832. Seminar in Spanish-American Literature. (3). (a) Colonial period, (b) contemporary novel, (c) short story, (d) poetry, (e) modernism, (f) essay and (i) theater. A 26 832 9 1105

Philosophy

Graduate Faculty

Associate Professors: A. J. Mendel, Gerald H. Fiske, Ben F. Rogers, Deborah H. Soles (chairperson)

Assistant Professors: Robert Feleppa, J. W. Mallory, David Soles

Although there is no graduate degree in philosophy, the following courses are available for graduate credit.

Courses for Graduate/Undergraduate Credit

505. Philosophy of Education. (3). An examination of educational concepts with an emphasis on the implications of such concepts with respect to the problems of moral, political and religious education in a secular, democratic society. A 24 505 0 1509

518. Recent British-American Philosophy. (3). Examination of philosophical ideas and movements in recent British and American philosophy. Movements such as logical positivism, pragmatism, ordinary language philosophy and analytic philosophy will be discussed. Readings will be selected from such figures as Russell, Wittgenstein, Pierce, Dewey and Quine. A 24 518 0 1509

519. Empiricism. (3). A study of the philosophical views that emphasize sensory experience rather than reasoning as a source of knowledge, with particular attention paid to the philosophies of Hobbes, Locke, Berkeley, Hume and Mill. A 24 519 0 1509

540. Theory of Knowledge. (3). A critical examination of the nature of knowledge and of the philosophical problems concerning the nature of the self, material objects: other minds; the past, present and future, universals, and necessary truths. Selections from both historical and recent writings are included. Prerequisite: one course in philosophy, 1250 or 1509.

546. Rationalism. (3). A study of the philosophical views that emphasize reasoning rather than sensory experience as the source of knowledge, with particular attention paid to the philosophies of Descartes, Spinoza and Leibniz. A 24 546 0 1509

549. Topics in Ancient Philosophy. (3). In each offering, this course explores one decisive issue in philosophy from the time of Thales through the Stoics. The examination of an issue may confine itself to one period within the total span of ancient philosophy or it may trace the issue throughout the span, indicating its contemporary treatment. Some of the issues treated are: the nature of reality, the concept of the sacred, the meaning of truth, the relation of invariance and process, the existence of universal standards of thought and conduct, the problem of knowledge, skepticism, the nature of the language and the character of philosophical inquiry. A 24 549 0 1509

550. Metaphysics. (3). An exploration of some basic topics in the theory of reality. Issues include such notions as space, time, substance, causality, particulars, universals, appearance, essence and being. Prerequisite: one course in philosophy. A 24 550 0 1509

555. Philosophy of the Social Sciences. (3). A study of such topics as the relations of social science with natural science and philosophy, methodological problems peculiar to social science, the nature of sound explanation, concepts and constructs, and the roles of mathematics and formal theories in social science. A 24 555 0 1509

557. Contemporary European Philosophy. (3). An exploration of a theme, issue, philosopher, or movement in contemporary European philosophy. Philosophers considered will include such figures as Husserl, Heidegger, Jaspers, Gadamer, Habermas, Marx, Adorno, Berger, Sartre, Merleau-Ponty, Bachelard, Lacan, Derrida, Foucault, and Ricoeur. Philosophical movements examined will include such tendencies as phenomenology, idealism, existentialism, structuralism, process philosophy, hermeneutics, and marxism. A 24 557 0 1509

558. Studies in a Major Philosopher. (3). A concentrated study of the thought of one major philosopher announced by the instructor when the course is scheduled. Repeatable for credit. Prerequisite: instructor's consent. A 24 558 0 1509

583. Special Studies. (3). Topic for study announced by instructor. Repeatable for credit. Prerequisite: instructor's consent. A 24 583 0 1509

590. Major Seminar. (3). Topic to be announced. The student will participate in the departmental faculty seminar. Prerequisite: departmental invitation. A 24 650 0 1509

699. Directed Readings. (2-3). A course designed for the student interested in doing independent study and research in a special area of interest. Repeatable for credit. Prerequisite: departmental consent. A 24 699 3 1509

Physics

Graduate Faculty

Professors: John B. Breazeale (vice president for academic affairs), James C. Ho, Henry Unruh, Jr.

Associate Professors: David R. Alexander, Gerald D. Loper, Jr., Joseph L. Strecker

Assistant Professors: Donald L. Foster (chairperson), Syed M. Tahir

Master of Science

The physics department offers courses of study leading to the Master of Science (MS).

Admission Requirements

Admission to the MS program in physics requires the completion of 24 hours of undergraduate physics, including 3 semester hours of mechanics and 3 semester hours of electricity and magnetism, plus meeting of the Graduate School admission requirements.

Degree Requirements

The MS in physics requires the successful completion of a program approved by the student's adviser and the department chairperson. Two options are available to the student. (1) the thesis option requires the completion of 30 semester hours of graduate coursework, which includes the presentation of a thesis and (2) the nonthesis option requires the completion of 36 semester hours of graduate work. In both options at least 12 hours must be in courses numbered 600 or above. The department recommends that each Plan of Study include Phys. 621, Classical Mechanics; Phys. 671, Statistical Mechanics; and Phys. 811-812, Quantum Mechanics I and II.

An MS in physics with a chemical physics option is available. Requirements are those listed above, with 6 of the required hours chosen from Chem. 711, 725, 741, 742, 745, 746 or other approved chemistry courses. Students should take Phys. 642 unless they look it for undergraduate credit.

Other program options are available which provide the possibility of combining the study of physics with interests in other fields such as astronomy, engineering, geology, computer science, biological sciences, and education.

Examinations

During the first semester, students are given a diagnostic entrance examination. A qualifying examination must be passed at least once semester before graduation, and an oral defense of the thesis is also required.
In addition to satisfactory undergraduate grades, all students are expected to have previously earned credit in Pol. Sci. 121 or its equivalent. Students entering the political science specialization must also have earned 3 hours of credit in upper division (300 or higher) political science and 3 additional hours in any social science. Students who plan to specialize in public administration must have earned credit in Pol. Sci. 321 and Econ. 201-202 or their equivalents.

Degree Requirements
The MA requires 30 or 33 hours of credit, depending upon the completion option selected. All students must complete Pol. Sci. 701, 702 and 703 (with departmental approval an alternative research tool may be substituted for Pol. Sci. 702). At least 6 hours of credit must be earned in political science courses at the 800 level. Up to 9 hours of credit in courses outside of political science may be applied toward the degree with the advisor's approval, and up to 9 hours of graduate credit earned at other universities may be transferred into this program with the approval of the department's Graduate Studies Committee.

Political Science Specialization. Students in the political science specialization should choose a major field from these alternatives: American government and politics, comparative politics, international relations and political philosophy. Students are strongly encouraged to earn credit in fields other than their major.

Public Administration Emphasis. In addition to courses required of all students, students in the public administration emphasis must complete Pol. Sci. 820. They also must take one seminar from Pol. Sci. 841, 851 and 856 and two optional courses from Pol. Sci. 560, 564, 580, 587, 655, 821, 842 and 855. These students should choose one of the following tracks to complete degree requirements. Only the general track can be completed within the 30-33 hour minimum required for the MA.

1. General Track. Students must complete three hours of electives and appropriate hours to complete the thesis, intern or nonthesis option (9 additional hours of electives in the latter case).  
2. Social Service Track. Students must take three of the following: HAE 503, 505, 507, Econ. 663 or 665, Soc. 502, AJ 806 or 833. They must complete the thesis, intern or nonthesis option. Courses should constitute a structured area, and other courses may be substituted with the advisor's approval.
3. Health Administration and Education Track. Students may substitute HAE 605 for Pol. Sci. 702. HAE 503 and 505 are required, as is HAE 507 or Pol. Sci. 560. Completion of the thesis, intern or nonthesis option with appropriate courses is also required. Students choosing the latter must complete 6 hours in health administration and education and 3 hours in political science.
4. Urban Studies Track. Pol. Sci. 841 is required, as is either Pol. Sci. 580 or 655. Students must elect three of the following: UA 700, UA 701, Econ. 688, Soc. 534 and Soc. 834. Students must complete the thesis, intern or nonthesis option with appropriate courses.
5. Finance Track. Pol. Sci. 655 and 821 are required. Students must choose three of the following: Econ. 653, Econ. 853, Acctg. 630 and Pol. Sci. 855 and complete the thesis, intern or nonthesis option.
6. Gerontology Track. Pol. Sci. 506 and Geron. 800 are required. Students must choose two of the following: Geron. 513, 514, 516, 731, or 801. Students enrolled in this program must have a minimum of 9 undergraduate hours in gerontology as a prerequisite for admission.

Completion Options
Students may complete their degree programs under any one of the following options:
1. Thesis Option. This option is designed for students planning graduate work beyond the MA or careers in research. Students must complete 30 hours for the degree, 6 of which relate to writing an acceptable thesis (Pol. Sci. 875-876). Candidates must pass an oral defense of a thesis prospectus and the thesis.
2. Nonthesis Option. This option is appropriate for students not planning further graduate work or research careers. It requires completion of 33 hours of credit and passing a written examination in the major field of study.
3. Intern Option. This option is for students seeking an intensive, applied learning experience. The MA requires 30 hours, up to 6 of which may be earned in the process of completing an internship (Pol. Sci. 874). Students must write and orally defend an intern report before being granted internship credit. Intern positions are awarded on a competitive basis and thus cannot be guaranteed.

Courses for Graduate/Undergraduate Credit
505. The Politics of Health. (3). A course designed to show how governments in the United States make decisions in the health field, describe the political forces shaping governmental policy in health, and analyze the arguments for and against an increased governmental role in health. A 22 505 0 2207
506. Politics of Aging. (3). Cross-listed as Geron. 501. This course will focus on the role of the elderly as competitors in the political arena. In assessing the elderly's strengths and weaknesses, students will look at the following: the effects of aging on political behavior; strategies of the aging—both individual and collective; and the responses of the political system. A 22 506 0 2207
523. Government and Politics of Latin America. (3). An examination of the political institutions and processes that currently exist in the Latin American republics. Emphasis is on the social, economic, and psychological factors affecting these institutions and processes. A 22 523 Q 0 2207
524. Politics of Modern China. (3). Emphasis is on study of China's political system since 1949 in terms of non-Western goals and ideas of social organization. Themes of political integration and political development are used to minimize distortion or cultural bias. Study encompasses the roots of the political system, the system as it is now and the goals China is striving to realize. Some assessment is made about the future development of communism in China. Topics include Chinese communism and the ideological heritage: political culture, political leadership: leadership, succession, political institutions of the Chinese Communist Party; political communications and socialization: legal development, policy choices, and major events, such as the Hundred Flowers Campaign, Great Leap Forward and the Proletarian Cultural Revolution. A 22 524 Q 0 2207
525. Postindustrial Politics. (3). An examination and analysis of the political systems and postindustrial politics in highly industrialized nations, such as the United States, Britain and Japan. Emphasizes cleavage patterns, stability-instability, party systems and comparative policy analysis. A 22 525 Q 0 2207
533. Policy Development in Foreign Relations. (3). The process of U.S. foreign policy making in the American structure of government. Particular attention is given to institutional conflict. A 22 533 Q 0 2207
534. Problems in Foreign Policy. (3). Examines domestic and international problems associated with U.S. foreign policy. A 22 534 Q 0 2207
535. The Comparative Study of Foreign Policy. (3). An examination of foreign policy on a cross-national basis. Emphasis is placed upon conceptual approaches for explaining foreign policy behavior which are applicable cross-nationally. A 22 535 Q 0 2207
540. American Political Behavior. (3). An intensive examination of political behavior in the United States through primary and secondary analysis of existing data and through presentation of an original research paper. A 22 540 Q 0 2207
547. Contemporary Political Theory. (3). The purpose of this course is to introduce students to the political currents and movements that emerged in the last century as a result of Darwin's theory of evolution, the doctrine of historicism, and the growth of modern science and to explore their impact upon political thought. Although the multiplicity of philosophies makes generalization difficult, several of them are based on common sources. Philosophers such as Hans Kelsen, William Barrett, Friedrich Nietzsche, and John Dewey are studied. Attention is given to the importance of these new philosophies.
Science. (3). An analysis of the role of political structures and issues. Undergraduate student of political science, its possibilities and limitations. An emphasis placed on critical evaluation of such approaches. A 22 549 0 2207

551. Public Law. (3). An analysis of the role of political structures and issues. An emphasis placed on critical evaluation of such approaches. A 22 547 0 2207

552. Civil Liberties. (3). An analysis of the role of political structures and issues. An emphasis placed on critical evaluation of such approaches. A 22 551 0 2207

555. Comparative Government. (3). A comparative study of representative conceptual frameworks to give the undergraduate student an appreciation of the work of the professional scholar, its possibilities and limitations. An emphasis is placed on critical evaluation of such approaches. A 22 549 0 2207

559. The Planning Process. (3). This course is of use to students desiring to work in an urban planning agency or who will be involved in planning issues as an administrator of a city, county, state or federal level. It is also of use to students seeking an understanding of the complex process of urban-related planning in solving human and environmental problems. Emphasis is given to the relationship between specialists, citizens and elective officials as participants in the planning process. A 22 560 0 2207

561. Public Management of Human Resources. (3). The course surveys the major areas of management of human resources in the public sector. These include personnel management, training, evaluation and pay promotion policies. Special emphasis is given to the laws governing public personnel management and to the unique merit, equal employment opportunity, productivity, unionization and collective bargaining problems found in the public sector. A 22 561 0 2207

564. Comparative Public Administration. (3). A study of the administrative system of selected developed and developing countries, with special attention to the variations in goals and methods of conceptual analysis and to the relationships between administrative institutions and their environmental settings. A 22 564 0 2207

568. Administration and the Policy Making Process. (3). The problems of government encountered in the administration of public policy. The approach is analytical rather than descriptive. Repeatable for credit. A 22 568 0 2207

576. Administrative Theory and Behavior. (3). A study of organization theory and the various approaches to the study of organization. A 22 576 0 2207


687. Introduction to Urban Affairs. (3). Cross-listed as Econ 687 and Soc 687. An introduction to the study of the metropolis as a social, political and economic system. Pre-requisite: department consent, A 22 687 0 2207


701. Method and Scope of Political Science. (3). Emphasizes philosophy of science and methodological (as distinguished from method and technique) and exposes the student to recent works of methodological importance in the various subfields within the discipline. Pre-requisite: departmental consent. A 22 701 0 2207

702. Statistical Applications. (3). Emphasizes applications of data in political science. Pre-requisite: departmental consent. A 22 702 0 2207

703. Proseminar in Political Science. (3). An examination of prevalent concepts, theories and ideas of the discipline and its constituent subfields; required of degree-status graduate students upon entrance. Pre-requisite: departmental consent. A 22 703 9 2207

710. Scope of Political Administration. (3). Cross-listed as Urban Affairs 710. Review of the scope of the field of public administration, survey of key concepts and schools of thought underlying the field and identification of issues shaping the future development of the field. A 22 710 0 2214

750. Workshop. (2-4). Pre-requisite: instructor's consent. A 22 750 0 2207

Courses for Graduate Students Only

810. Seminar in Comparative Government. (3). The comparative study of selected aspects of the politics and institutions of foreign governments. Pre-requisite: departmental consent. A 22 810 9 2207

820. Seminar: The Administrative Process. (3). Consideration of the process and environment of administration, with special attention given to the role of the executive in policy formulation, organization, planning, budgeting, staffing, coordination, communication and administrative responsibility. Pre-requisite: departmental consent. A 22 820 9 2207

821. The Budgetary Process. (3). Analysis of the development and utilization of the budgetary process in governmental administration, with special attention given to the role of the budget in relation to its role in policy formulation. Pre-requisite: departmental consent. A 22 821 9 2207

835. Seminar in International Relations. (3). Analysis of special problems in, and approaches to, the study of international relations. Pre-requisite: departmental consent. A 22 835 9 2207

841. Seminar in Urban Politics. (3). An intensive study of urban political, with emphasis on individual research projects. Pre-requisite: departmental consent. A 22 841 9 2207

842. Administration in Local Government. (3). Examination of administrative processes and problems in local government, including the role of professional chief executive. Pre-requisite: departmental consent, A 22 842 0 2207

851. Seminar in Public Law and Judicial Behavior. (3). Analysis of special problems in and approaches to the study of legal systems. Emphasis is given to developing the student's awareness of research in the field. Pre-requisite: departmental consent. A 22 851 9 2207

855. Seminar in Public Finance Systems. (3). An analytical study of selected topics in the politics and administration of revenue, expenditure and borrowing policies of governmental organizations. Pre-requisite: departmental consent. A 22 855 9 2207

856. Seminar in American Politics and Institutions. (3). Analytical study of selected topics in American political behavior, with emphasis on individual research. Repeatable for credit when content differs substantially. Pre-requisite: departmental consent. A 22 856 9 2207

874. Internship. (3-6). S/U grade only. An intensive applied learning experience supervised by a university department or committee. To receive credit, a student must secure approval of a written report from his/her own department. Pre-requisite: departmental consent. A 22 874 2 2207

875. Research Design. (3). S/U grade only. Requires the development of a research design for the thesis. The design must be submitted to a departmental committee for evaluation and approval. Pre-requisite: departmental consent. A 22 875 4 2207

876. Thesis. (1-3). A 22 876 4 2207

Psychology

Graduate Faculty

Professors: David T. Herman, G. Y. Kenyon, Jackson O. Powell (emeritus), N. H. Pronko (emeritus) 

Associates: Professor: C. Robert Borresen, Charles A. Burdals, Jr. (chairperson), Gary Greenberg (graduate coordinator), Robert K. Knapp, Donald W. Nance, James J. Snyder, Nanci J. Vashat

Assistant Professors: Paul D. Ackerman, M. J. Kingspong, G. J. Meiasen, Elsie R. Shore, R. D. Zettle

Master of Arts and Areas of Specialization

The psychology department offers courses of study leading to the Master of Arts (MA) degree. The degree is one of three programs: (1) general-experimental psychology, (2) clinical-experimental psychology, and (3) community psychology.

Admission Requirements

Applications for admission should be filed with the dean of the Graduate School by March 1 for enrollment the following fall. In addition to the usual
application information, the following are required: (1) three letters of reference from persons acquainted with the applicant's academic background and potential, (2) a brief autobiographical statement describing particular interests, experiences and goals related to academic and professional work in psychology. Applicants are evaluated with respect to (1) undergraduate grade point average, (2) amount, type, and scope of undergraduate preparation, and (3) reference letters. Applicants are informed of admission or rejection by approximately April 1. Applications received after March 1 are acted on periodically until fall enrollment, with acceptances depending upon the department's graduate teaching capacity.

Prerequisites
Regardless of the program to which the student is applying, for full graduate standing, the student must have undergraduate courses in general psychology, psychological statistics, experimental psychology, and history/systems. In addition, depending upon the intended area of study, the following courses are required:

General-Experimental: Three of the following—Psychological Psychology, Psychology of Learning, Comparative Psychology, Psychology of Motivation, and Psychology of Perception.

Clinical-Experimental: Psychology of Learning, Abnormal Psychology, and one of the following—Psychology of Motivation, Physiological Psychology, and Psychology of Perception.

Community: Two from the following—Psychology of Learning, Psychology of Motivation, Physiological Psychology, Psychology of Perception, Psychology of Consciousness, Comparative Psychology, or Psycholinguistics; and two from the following—Social Psychology, Child Psychology, Psychology of Personality, Psychology of Aging, Psychology of Illness, Psychology of Women, Abnormal Psychology, or Developmental Psychology.

Degree Requirements
All graduate students in degree programs are required to complete a thesis with enrollments in Psych. 875 and 876. In addition to regular course examinations, all students must pass an oral examination over their thesis and program area. The thesis will ordinarily be a major research project which must be preceded by approval of a formal written proposal by the student's thesis committee. Also, students must take Univariate Research Design and Multivariate Research Design. Additional requirements are determined by the program in which the student is enrolled. Students should be aware of the Graduate School's six-year limit for completing degree programs. The psychology department expects degree-bound students to make satisfactory progress toward the completion of their degree programs.

General-Experimental: Each student must take four of the following—Advanced Social Psychology, Seminar in Developmental Psychology, Seminar in Learning, Seminar in Comparative Psychology, Seminar in Motivation and Emotion, and Seminar in Perception. In addition, the student must take 12 hours of electives determined in consultation with an adviser. The elective hours may be used to produce a subspecialty tailored to the student's needs and interests. Those students interested in the Human Factors Psychology sub-specialty will take as their elective hours Computer Applications to the Behavioral Sciences, Aerospace Psychology, R&D Procedures and Practices in Human Factors, and Human Factors in Engineering.

Clinical-Experimental: The following courses are required of each student enrolled in the clinical program—Seminar in Psychotherapy, Seminar in Clinical Psychology, Seminar in Behavioral Assessment, Clinical Research and Practice (taken twice), and Seminar in Behavior Therapy. In addition, each student must take 6 hours of electives determined in consultation with an adviser.

Community: Each student must take the following—Seminar in Community Psychology, Research in Community Psychology, Practicum in Community Psychology (taken twice), Psychological Service Agencies, and Seminar in Consultation and Counseling. In addition, 8-9 hours of electives (a minimum of three courses) must be taken. One of the courses must be in the psychology department, one must be outside the psychology department, and the third may be either. All electives are determined in consultation with the student's adviser.

Courses for Graduate/Undergraduate Credit

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>502Q</td>
<td>Comparative Psychology</td>
<td>PSYCH 1110 and departmental consent</td>
<td>3</td>
</tr>
<tr>
<td>504Q</td>
<td>Advanced Social Psychology</td>
<td>Group One</td>
<td>2</td>
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</tbody>
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502Q. Comparative Psychology. (3). The evolution and development of behavior are stressed. Lectures are supplemented by field trips and projects. Prerequisites: one of Group One. A 23 502Q 0 2001

504Q. Advanced Social Psychology. (3). An intensive review of selected contemporary issues in social psychology. Prerequisite: Psych. 504Q. A 23 504Q 0 2006

508. Psychology Tutorial. (3). Selected topics in psychology. Prerequisites: for maximum of 6 hours of credit. Prerequisites: Psych. 1110 and departmental consent. A 23 508 2 2001

512. Quantitative Analysis of Behavior. (3). A survey of the role of statistics (including human and animal) in the behavioral sciences. Topics covered include principles of evolution and the transition from Homo sapiens, the evolution of behavior, the development of language, learning in the primate and the development of behavior. Prerequisite: Psych. 111G and instructor's consent. A 23 512 Q 2 2001


544. Abnormal Psychology. (3). An introductory survey of abnormalities of behavior. Definitions, causes, types, and classifications of abnormal behavior are examined. Attention is given to various theories of abnormality, research evidence, and various methods of diagnosis and treatment. Hypnosis and the prevention of abnormality are presented. Prerequisite: Psych. 324Q. A 23 544 Q 2 2001

546. Practicum in Applied Behavior Analysis and Social Learning. (3). 1R; 4L. The goals of this course are to train the student in the basic procedures of applied-social behavior analysis: designing data collection systems and applying behavior change strategies to an individual who is currently experiencing a problem in living. Training will occur in the departmental clinic or in community agencies under the supervision of faculty-agency staff. Repeatable once. This course does not carry graduate credit for clinical-experimental graduate students. Prerequisites: Psych. 440 and departmental consent. A 23 546 Q 2 2001

556. Introduction to Clinical Psychology. (3). Application of psychological principles to the field of clinical behavior. Prerequisite: Psych. 324Q. A 23 556 Q 2 2001

568. Computer Applications to the Behavioral Sciences. (3). 2R; 2L. This course is an introduction to computer applications to the behavioral sciences. Included are: 1) data collection and analysis, 2) statistical applications, 3) interactive computing directed at affecting experimental data, 4) "canned" statistical programs, 5) word processing, and 6) other current computer applications.
604Q. Developmental Psychology. (3). An intense review of developmental psychology designed to consolidate particular areas of psychology into a more comprehensive view of the discipline. Prerequisite: 15 hours of psychology or instructor’s consent. A 23 601 0 2001

604Q. Developmental Psychology. (3). Cross-listed as Ger. 604. Selected topics in psychological development from the perspective of issues and crises across the entire life span from birth to death. The format of the course includes individual projects. Prerequisites: Psych. 314 and 404. A 23 604 Q 0 2009

606. History of Psychology. (3). Psychological theory and experimentation from ancient to modern times. Prerequisite: 9 hours of psychology or instructor’s consent. A 23 606 0 2001

608. Special Investigation. (1-3). Cross-listed as Ger. 608. Upon consultation with the instructor, advanced students with adequate background may undertake original research in psychological problems. Repeatable for a maximum of 6 hours. Prerequisites: 9 hours in psychology and departmental consent. A 23 608 4 2001

616. Operant Conditioning Laboratory. (3). L. Experimental laboratory stressing analysis of behavior by operant techniques. Prerequisite: Psych. 302. A 23 616 1 2002

648. Advanced Behavior Therapy/Social Learning. (3). Further study of selected topics such as problem solving, systems analysis, cognitive-behavior therapy, tokem and elegant therapy, and control of human behavior. With the instructor’s consent advanced practicum or a research project may also be undertaken in departmental clinic or community agencies. This course does not carry graduate credit for clinical-experimental graduate students. Prerequisites: Psych. 546 and departmental consent. A 23 648 9 2001


750. Psychology Workshop. (1-3). A course of specialized instruction, using various formats, in selected topics and areas of psychology. A 23 750 2 2001

Courses for Graduate Students Only


811. Seminar in Cognitive-Behavioral Assessment. (4). Prerequisite: 302. Rationale and methods of assessing interaction between the individual and the environment. Development of interviewing skills. Practical experience in the use of various data collection strategies and experience in the analysis of these collected data. Prerequisite: instructor’s consent. A 23 811 9 2003

815. Clinical Research and Practice. (3). Designed to give the student further experience in clinical skills and clinical research. Enrollment is required for semesters of the second year for students concentrating in the clinical area for a maximum of 6 hours. Prerequisite: 802 and instructor’s consent. A 23 815 2 2003

817. Assessment of Personality and Human Interaction. (2). Prerequisite: Psychology 302 or Instructor’s consent. A 23 817 9 2003

818. Personality and Human Interaction Practicum. (2). Prerequisite: Psychology 817 or instructor’s consent. A 23 818 2 2003


825. Seminar in Behavior Therapy. (4). Prerequisite: review of theory, research and practice in behavior therapy. Prerequisites: Psych. 302 or equivalent, and instructor’s consent. A 23 825 2 2003

830. Seminar in Community Psychology. (3). Comprehensive overview of theory, research and practice in the emerging field of community psychology from the perspective of general systems theory. Prerequisite: instructor’s consent. A 23 830 2 2005

831. Research in Community Psychology. (3). Special topics and group field research projects in community psychology. Prerequisite: instructor’s consent. A 23 831 2 2005

832. Practicum in Community Psychology. (3). Prerequisite: Psych. 302 or equivalent, and instructor’s consent. A 23 832 2 2005

833. Psychological Service Agencies. (3). An in-depth examination of psychological service agencies with regard to structure, functions, financing, goals, planning, development, evaluation and accountability. Prerequisite: instructor’s consent. A 23 833 0 2005

834. Seminar in Consultation and Counseling. (3). Theories and techniques of consultation, counseling, and interviewing within organizations and systems are thoroughly examined and applied. Prerequisite: instructor’s consent. A 23 834 0 2005


844. Seminar in Personality and Social Disorders. (3). Relationship of normal behavior development and maladjustment and also a critical review of theory and research. Prerequisites: Psych. 544 or equivalent, and instructor’s consent. A 23 844 9 2005

851. Seminar in Physiological Psychology. (3). Intensive study of theory and research in physiological factors in behavior. Prerequisites: Psych. 322, or equivalent, and instructor’s consent. A 23 851 2 2001

852. Univariate Research Design. (3). Analysis of variance for various single and multivariate designs, analysis of covariance, multiple comparisons and other selected topics. Also included is the use of computer program packages for the analysis of data. The course emphasizes psychological research in laboratory and applied settings. Prerequisite: Psych. 542 or instructor’s consent. A 23 852 9 2001

853. Multivariate Research Design. (3). Multivariate methods, techniques, and designs in psychological research including multiple regression, discriminant analysis, profile analysis, factor analysis and other selected topics. Also included is the use of computer program packages for the analysis of data. The course emphasizes research in applied and field settings. Prerequisite: Psych. 542 or instructor’s consent. A 23 853 9 2001


870. Seminar in Current Developments. (3). Intensive study of current issues, techniques, research and application. Repeatable for different topics for a maximum of 6 hours. Prerequisite: instructor’s consent. A 23 870 9 2001

872. Seminar in Comparative Psychology. (3). Intensive study of psychological and ethological research and theories of behavior. The course is oriented around the evolution and ontogenetic development of behavior. An ethological project is required. Prerequisites: Psych. 502, or equivalent, and instructor’s consent. A 23 872 9 2001

873. Seminar in Motivation and Emotion. (3). Intensive study of theory and research in motivational and emotional processes. Prerequisites: Psych. 316 or equivalent, and instructor’s consent. A 23 873 9 2001

875-876. Thesis. (2-4). Required of all graduate majors. Prerequisite: advisor’s consent. A 23 875 4 2001; A 23 876 4 2001

885. Seminar in Perception. (3). Intensive study in theory and research in perceptual processes. Prerequisites: Psych. 332, or equivalent, and instructor’s consent. A 23 885 9 2001

Religion

Graduate Faculty
Associate Professor: Paul Wiebe
Assistant Professors: Michael Kalton (chairperson), Howard Michel

Although there is no graduate program in religion, the following courses may be taken for graduate credit:

Courses for Graduate/Undergraduate Credit

750. Workshop in Religion. (2-4). A 15 750 0 1510
790. Independent Study. (1-3). Designed for the student who is capable of doing graduate work in a specialized area of the study of religion that is not formally offered by the department. Repeatable for credit. *A 15 790 0

Sociology/Social Work

Graduate Faculty

Professor: John J. Hartman

Associate Professors: William C. Hays (director of Gerontology Center), Jeffrey W. Bennett (graduate coordinator)

Assistant Professors: Robert L. Allegrecci, Elwin M. Barrett, Elena Bastida, Nancy Brooks, Charles E. Hellmann, Bobbye J. Humphrey, Denise Hutcherson, Timothy W. Lause, Ronald R. Matson (chairperson), Kathleen M. O'Flaherty, James L. Tanner

Master of Arts

The sociology department offers courses of study leading to the Master of Arts (MA) with options for thesis and nonthesis programs, as well as an emphasis in gerontology.

Admission Requirements

Applicants are evaluated for admission with respect to their undergraduate record, Graduate Record Examination scores (optional) and three letters of reference from professors who supervised their undergraduate work. For consideration for admission to degree status, applicants are expected to have at least 15 hours in sociology including courses in social statistics, in social theory, and research methods. Specific course prerequisites may be made up after admission by students with otherwise adequate backgrounds. Final recommendations for admission to the MA program in sociology are made to the Graduate Committee of the Department of Sociology.

Degree Requirements

Students pursuing the MA in sociology may follow either a thesis or a nonthesis program.

Thesis Program. Students in the thesis program must take a total of 32 hours, including Soc. 800, Research Methods in Sociology, and 845, Seminar in Sociological Theory, and two 800-level graduate seminars. Each student must demonstrate skill in a collateral area, such as research or computer programming, Soc. 851, Directed Research, is needed to fulfill this requirement.

Degree Requirements for the MA with Gerontology Emphasis

Students may complete the MA in sociology with an emphasis in social gerontology under either the thesis or nonthesis program as described below.

Thesis Program. Students must complete the sociology core, Geront. 800 and three of the gerontology courses listed below.

Sociology Core Courses

Soc. 510, Introduction to Methods, or Soc. (Geron.) 513, Sociology of Aging .

Soc. 800, Research Methods in Sociology .

Soc. 845, Seminar in Sociological Theory.

Soc. 875, Seminar, or Soc. 876, Thesis.

Seminar electives (3 seminars above 800).

Gerontology Courses

Geront. 800, Seminar I and three of the following courses

Geront. (Geron.) 502, Older People and Organizations


Geront. (Anthro.) 514, Anthropological Perspectives in Aging

Geront. (Biol.) 518, Biology of Aging

Geront. (Psych.) 661, Developmental Psychology

Geront. (IS) 731, Growth and Development IV: Adults and Aging

Geront. (Econ.) 663, Economic Insecurity

Geront. 801, Seminar II

Total Hours

36-39

*Thesis must be aging related.

Examinations

Students electing the thesis program in sociology must pass an oral defense of the thesis.

Sociology

Courses for Graduate/Undergraduate Credit

501. Sociological Statistics. (3). Generally offered only in the fall semester. Statistical application to sociological problems including parametric measures and nonparametric measures (such as binomial expansion and chi-square). Prerequisites: Soc. 1110 and Math. 3310 or equivalent. A 25 501 0 2208

502. Older People and Organizations. (3). Cross-listed as Geront. 502. This course examines the agencies and organizations that deal with or are comprised of the elderly. The relationship between various social networks and the participation of the elderly is emphasized. A new role is examined. Prerequisite: Soc. 1110 or instructor's consent. A 25 502 0 2208

510. Field Research Methods. (3). An examination of various qualitative research tools and techniques used by sociologists. As part of the learning experience, students will be involved in direct field observation in natural social environments. Prerequisite: Soc. 1110. A 25 510 0 2208

511. Applied Quantitative Research. (3). Emphasis is placed on applying quantitative designs to sociological problems including survey design, sampling, collection of data and interpretation of results. Prerequisite: Soc. 212 and a course in statistics. A 25 511 0 2208
513. Sociology of Aging. (3). Cross-listed as Geron. 513. Analysis of the social dimensions of old age, including changing demographic structures and role changes and their impact on society. Prerequisite: Soc. 1110. A 25 513 0 2208

515. Sociology of the Family. (3). Analysis of American family behavior, including the selection of marriage partners, the husband-wife and parent-child relationships, and the relation of these patterns of behavior to other aspects of American society. Prerequisite: Soc. 1110. A 25 515 0 2208

516. Sociology of Sex Roles. (3). Cross-listed as WS 516. A course analyzing the institutional sources of man's and woman's roles, the source of changes in these roles, the consequent ambiguities and conflicts. Prerequisite: Soc. 1110. A 25 516 0 2208

517. Intimate Relations. (3). This course is designed to examine the social dimensions of intimacy. The course will include an analysis of intimacy in different types of relationships, i.e., romantic, friendship, marriage. Theory and research in the area will be reviewed with a special focus on the place of intimacy in social interaction. Prerequisite: Soc. 1110. A 25 517 0 2208

523. Sociology of Law. (3). The study of law and legal institutions within their social context. Prerequisite: Soc. 1110. A 25 523 0 2208

526. Political Sociology. (3). Social basis and consequences of political behavior. Also included are the study of power and authority, problems in the development and maintenance of viable democratic political structures and the role changes of leaders and the source of changes in these roles, the consequent ambiguities and conflicts. Prerequisite: Soc. 1110. A 25 526 0 2208

527. Violence and Social Change. (3). The analysis of the causal processes and functions of extreme and violent political behavior, i.e., revolutionary, insurrectionary and protest movements. The course includes an analysis of consequences for social change. Prerequisite: Soc. 1110. A 25 527 0 2208

534. Urban Sociology. (3). Urban population, urban organization, urban institutions and programs of city planning. Prerequisite: Soc. 1110. A 25 534 0 2208

537. The Social Consequences of Disability. (3). Cross-listed as Geron. 537. An eclectic survey of the social aspects of disability, showing the impact of social values, institutions and policies upon adults with disabilities. Appropriate for both students of sociology and the service professions. Prerequisite: Soc. 1110. A 25 537 0 2208

538. Medical Sociology. (3). An analysis of social and cultural factors related to physical and mental illness. Also included are the dynamics of communication and role relationships among patients and medical personnel and social research and theory relevant to the health professions. Prerequisite: Soc. 1110. A 25 538 0 2208

539. Juvenile Delinquency. (3). The factors related to juvenile delinquency and the measures of treatment and prevention. Prerequisite: Soc. 1110. A 25 539 0 2208

540. Criminology. (3). The extent and nature of criminal behavior and societal reactions to it. Prerequisite: Soc. 1110. A 25 540 0 2208

541. Contemporary Corrections. (3). Histori­
cal and contemporary programs for the treatment of offenders, viewed as societal reactions to criminal behavior. Prerequisite: Soc. 539 or 540. A 25 541 0 2208

596. Internship. (1-6). A course used to supervise persons involved in internship placements in the community where credit can be given. Prerequisite: departmental consent. A 25 598 2 2208

600. Selected Topics in Sociology. (3). Study in a specialized area of sociology, with emphasis on student research projects. Areas covered include deviant behavior, political sociology, the family and others. Repeatable for a maximum of 6 hours credit. Prerequisites: Soc. 1110, instructor's consent and substantive area course. A 25 600 0 2208

645. History of Sociological Theory. (3). Analysis of emergence of sociological theory. Prerequisites: 9 hours of sociology. A 25 645 0 2208

646. Principles and Concepts of Sociology. (3). Critical evaluation of major principles and concepts, their derivation and relationship to systematic theory. Prerequisite: 9 hours of sociology. A 25 646 0 2208

651. Directed Research. (3). Designed to give the student further research skills in an area of special interest. Prerequisites: 30 credits toward the degree and written approval of the research project. A 25 651 1 2208

670. Independent Reading. (1-3). Designed for the advanced student capable of doing independent research in an area of special interest. Prerequisite: 15 hours of sociology and instructor's consent. A 25 670 0 2208

687. Introduction to Urban Affairs. (3). Cross-listed as Pol. Sci. 687 and Econ. 687. An introduction to the study of the metropolis as a social, political, and economic system. Prerequisites: Econ. 210 and Soc. 1110 or a course in political science. A 25 687 0 2208

750. Sociology Workshop. (1-3). A course designed to provide specialized instruction, using a variable format, in a sociologically relevant subject. A 25 750 2 2208

Courses for Graduate Students Only

800. Research Methods in Sociology. (3). The application of research methods in sociology. Includes research design, collection of data, development of questionnaires, schedules and scales, interpretation, analysis of data and summary. Prerequisites: Soc. 501 and 510 or 511 or departmental consent. A 25 800 9 2208

805. Seminar in Qualitative Methodology. (3). An in-depth examination of selected qualitative methods of analysis in sociological research. Prerequisites: Soc. 510 or departmental consent. A 25 805 9 2208

815. Seminar on the Family. (3). Review of recent research on the family, and the theoretical implications thereof. Prerequisites: Soc. 515 or departmental consent. A 25 815 9 2208

820. Seminar in Social Movements. (3). Analysis of the elements in social movements as factors in social and cultural change. Prerequisite: departmental consent. A 25 820 9 2208

822. Seminar in Deviant Behavior. (3). In depth examination of recent theory, methodology and research in the area of deviance. Implies a commitment to future research. Prerequisite: departmental consent. A 25 822 9 2208

825. Seminar in Organizational Analysis. (3). Exploration of selected problems in organizational theory based on major theoretical and empirical approaches, both classical and contemporary. Prerequisite: departmental consent. A 25 825 9 2208

830. Seminar in Stratification and Power Structure. (3). Analysis of the forms and dynamics of social inequality as a socio-political phenomenon. Class, status and power segments of contemporary urban society are examined, with reference to their spheres of influence and structural persistence and/or change. Prerequisites: Soc. 526 or departmental consent. A 25 830 9 2208

834. Seminar in Urban Sociology. (3). Independent research projects in urban sociology. Prerequisite: departmental consent. A 25 834 9 2208

839. Seminar in Juvenile Delinquency. (3). A study of juvenile delinquency from a number of theoretical frameworks, accentuating the contemporary context of the subject matter. The course covers topics of academic and practical interest related to delinquency, i.e., causes of delinquency, recent research, delinquency vs. social justice system, juvenile law and juvenile corrections. Special interest is given to the changing face of delinquency in America today. Student research, through utilization of community resources, is encouraged. Prerequisite: Soc. 539 or departmental consent. A 25 839 9 2208

841. Advanced Seminar in Theories of Correctional Treatment. (3). Evaluation of the range of contemporary theories of individual and group techniques of correctional treatments, with special emphasis upon the literature related to process research and outcome research. Prerequisite: 15 hours of sociology and departmental consent. A 25 841 9 2208

845. Seminar in Sociological Theory. (3). A course emphasizing continuities between European and American social theory. The perspectives are both historical and analytical, spanning the 18th, 19th and 20th centuries, and concluding with the works of representative contemporary theorists. Prerequisites: Soc. 643 or 646 or departmental consent. A 25 845 9 2208

847. Seminar in Recent Developments in Sociology. (3). Major issues, new theories, new techniques of research, new areas of research and new applications that are especially applicable for credit but not to exceed 6 hours. Prerequisites: 15 hours of sociology and departmental consent. A 25 847 9 2208

851. Directed Research. (1-3). Designed for the advanced student who wants to achieve research competence in a specific area. Each student is directed by a member of the graduate faculty in the development of a project in research not leading to a thesis research. Prerequisites: Soc. 800 and instructor's consent. A 25 851 4 2208
650. Social Welfare Policy and Services I. (3). Descriptive approach to the social welfare system, emphasizing its structural and local community service-delivery system. Prerequisites: SW 2000 and Soc. 212. A 25 500 0 2104

501. Social Work Practice I. (3). Focus on social work helping methods including: historical development of the social work profession, identification of basic social work theory and introduction to social work practice methodology. Prerequisites: SW 2000 and Soc. 212. A 25 501 0 2104

550. Social Welfare Policy and Services II. (3). Analytic approach to social work problems, policies, programs and issues, including an analysis of the influence of values on the formation of social welfare policy. Indepth examination of selected issues in public and voluntary areas and alternative methods for dealing with them are included. Prerequisite: SW 500. A 25 550 0 2104

551. Independent Studies. (1-3). Individual projects designed for social work students who are capable of doing independent work in areas of special interest. Repeatable for credit not to exceed 6 hours. Prerequisite: instructor's consent. A 25 551 3 2104

560. Personal Human Interaction Within Society. (3). This course provides students with a beginning theoretical framework within which the integration of prior knowledge can be made regarding physical, mental and social development of the human being, percepts on American culture and subcultural variations and their effect on human adaptability in the social environment, and the relationship of those entities to beginning professional social work practice. Prerequisites: SW 200 and 6 hours from a list of social and behavioral science courses approved by the social work faculty and selected in consultation with a social work adviser. A 25 560 0 2104

570. Internships in Social Work. (3-6). To provide specially designed field experience for social work students who need or desire training that will enhance their professional abilities and for whom academic credit is appropriate. It is also designed to meet experiential learning needs of special designated students for whom academic credit is appropriate. Repeatable for credit not to exceed a total of 6 hours. Prerequisite: instructor's consent. A 25 570 2 2104

601. Social Work Practice II. (3). Advanced practice theory, with special emphasis on becoming a knowledgeable and skilled worker applying theory to practice. The focus of this course will be on developing a clear understanding of concepts, principles, techniques and processes of social work practice and the role they relate to individuals, families and groups and to the larger community. This course is to be taken concurrently with SW 602 except by departmental consent. Prerequisites: SW 501 and departmental consent. A 25 601 0 2104

602. Practicum I. (4). Placement in community social welfare agencies for supervised periods of observation and direct service assignments, with special emphasis on performance of basic practice skills and understanding of the social welfare agency and its role in the community service network. This course is to be taken concurrently with SW 601 except by departmental consent. Prerequisites: SW 501 and departmental consent. A 25 602 2 2104

603. Topics in Social Work. (2-3). Selected topics in practice, research, administration, social policy and human behavior in the social environment. Prerequisites: SW 200Q and instructor's consent. A 25 603 0 2104

604. Seminar on Practice Issues. (3). A critical look at professional work issues, including social work research. The course analyzes current social work practice, as well as its future direction. Prerequisite: SW 605 to be taken concurrently except by departmental consent. Prerequisite: SW 601. A 25 604 0 2104

605. Practicum II. (5). Placement in community social welfare agencies for supervised direct service assignments, with emphasis on formulation of appropriate goals. The selection of various social work roles and in-depth development of techniques and skills common to practice in the social welfare field is included. Prerequisite: SW 604 to be taken concurrently except by departmental consent. Prerequisite: SW 602. A 25 605 2 2104

610. Aging: Personal, Social and Professional Perspectives. (3). Cross-listed as Geron. 610. A realistic look at the comprehensive role of social work practice and the helping professions in aging. Provides a focus on work with individuals, groups, and community organizations. Links social with economic and political factors. Highlights current and future developments in social policy, human service practice, and demography as the total life cycle is conceptualized. Prerequisite: departmental consent. A 25 610 0 2104

750. Social Work Workshops. (1-5). Specialized instruction using a variable format in a social welfare relevant subject. This course may be offered together with SW 15. Prerequisite: instructor's consent. A 25 750 2 2104

Speech Communication
Graduate Faculty
Professors: Leslie M. Blake, Philip J. Mohr, Richard C. Weisbacher
Associate Professors: Joyce P. Cavanozzi, Bella Kiralyfalvi (chairperson), Audrey Needles, Robert A. Vartabedian

Assistant Professors: Judith Babnich, Donald Fry, Virginia Fry, Francis L. Kelly, Laurel Klinger-Vartabedian, Judith Pfer, Robert M. Smith, Arden Weaver, L. Keith Williamson (graduate coordinator)

Master of Arts in Communications
The speech communication department participates extensively with other departments in the multidisciplinary Master of Arts in communications (MA) program. The graduate coordinator in the department is also the program coordinator of the MA in communications program. (See requirements for the MA program in General Programs, Communications section of the Graduate School Bulletin.)

Master of Education
The following courses may apply toward a Master of Education (MED) with intensive study in secondary education and content specialization in speech and drama, offered by the Department of Instructional Services, College of Education. Prospective candidates are advised jointly by representatives of the Department of Instructional Services and the Department of Speech Communication. (See requirements for the MED in the College of Education section of the Graduate School Bulletin.)

These courses may also apply toward other master's degree programs or may be taken by students in nondegree status if approved by the faculty advisers, the chairperson of the Department of Speech Communication and the dean of the Graduate School.

General Courses for Graduate/Undergraduate Credit

650. Instructional Communication. (3). The study and development of instructional communication concepts, processes, technologies, and strategies related to formal instruction and learning outcomes. By means of structured experiences, students develop competencies in (1) determining appropriate instructional goals, (2) designing instructional strategies to achieve learning outcomes, (3) utilizing visual, vocal, and verbal communication skills to implement instructional strategies, and (4) assessing the proficiency of communication skills used for instruction. Course flexibility in planning and emphasis provides for the utilization of instructional communication across disciplines and educational levels as well as in most professional and training settings. A 27 650 0 1599

660. Seminar in Speech. (2-3). Special seminars designed to treat current areas of interest or problems in: (a) rhetoric and communication, (b) theater, (c) radio-television-film or (d) speech education. Repeatable for credit in different topics only. A 27 660 9 1599

661. Directing the Forensics Program. (3). A study of the methods and procedures in judging and directing competitive and collegiate forensics programs (debate and individual events). The future teacher is made aware of the literature and professional organizations in the field. A 27 661 0 1599
655. Communicative Disorders. (3).
Cross-listed as CDS 705. A survey of speech, language and hearing disorders: their identification and treatment; and consideration of the effects of hearing and educational problems in the total habilitative process. Background in normal communicative structures, processes and situations is provided for understanding communicative disorders. Areas introduced include language disabilities in children, adult aphasia, articulation disorders, voice disorders, cleft palate, laryngectomy, stuttering, cerebral palsy and hearing impairment. A 27 665 0 1200

675. Directed Study. (2-4). Individual study or projects. Repeatable for credit with departmental consent. Prerequisite: departmental consent. A 27 675 3 1599

750. Workshops in Speech. (2-4). A 27 750 2 1599

Radio—Television—Film
Courses for Graduate/Undergraduate Credit

500. Documentary and Propaganda Films. (3). An investigation into the evolution, theories, and techniques of documentary and propaganda films. Emphasis is placed upon the role of film in formulating and affecting public opinion and attitudes in modern society. A 27 500 3 1599

509. Directed Projects in Instructional Television. (2). Practical assignments in instructional television and cablecasting. Activities include 6 hours per week in campus television exercises. Prerequisites: Speech 504 and instructor's consent. A 27 509 0 0603

522. Advanced Broadcast News. (3). Cross-listed as Journ 522. A course in the techniques of preparing news for radio and television presentation, with emphasis on actual work in radio and television newsrooms. Prerequisite: Speech 322 or Journ 322. A 27 522 1 0603

604. Advanced Television Production and Direction. (3). Application of television equipment and techniques for expression of ideas and concepts. Execution of visual and audio impact in relation to effective communication. Prerequisite: Speech 504 or instructor's consent. A 27 604 2 0603

605. Radio and Television Station Management. (3). The organization and management of radio and television stations, including administrative, programming, technical and sales problems, and physical facilities. Prerequisite: departmental consent. A 27 605 0 0603

606. Broadcasting and the Law. (3). Explores legal forces operating in the broadcast industry emanating from laws, rules and regulations of various federal agencies, industry self-regulation and citizen action. Emphasis is on the underlying philosophy and trends in influencing various events in broadcast regulatory history. A 27 606 0 0603

607. Radio and TV Programming. (3). Planning, developing and scheduling based upon audience and market analysis, program ratings, principles of evaluation and criticism. A 27 607 0 0603

609. Educational and Instructional Broadcasting. (3). Investigation and application of production techniques for educational and instructional broadcasting, with emphasis on television. Prerequisite: Speech 504. A 27 609 0 0603

Rhetoric and Communication
Courses for Graduate/Undergraduate Credit

612. Contemporary Theories of Oral Communication. (3). Conceptual models useful in the scientific study of speech and application from selected areas of psychology, sociology, anthropology and other related fields. A 27 612 0 1506

613. Advanced Theories of Argumentation. (3). Intensive examination of the principles and practice of reasoned discourse. A 27 613 0 1506

615. Language and Symbolic Processes. (3). Application of the theoretical framework of general semantics, linguistics and psychology to an analysis of oral language behavior. Analysis of language usage that leads to conflict, confusion, and misdirection and development of methods of accuracy and precision in language usage. A 27 615 0 1506

632. American Public Address. (3). Cross-listed as Amer. Stud. 632. A detailed study of notable American speakers and their public utterances. Their impact on the political, economic and social history of this nation from colonial times to the present is assessed. A 27 632 0 1506

635. Leadership Techniques for Women. (3). Cross-listed as WS 635. A course designed to prepare women for decision in an environment of changing values and to improve skills in leadership through role playing and exercise in group dynamics. A 27 635 0 1599

636. Advanced Public Speaking. (3). Theory and practice in the various forms of platform speaking for the academically trained student. Course includes such special forms as the after-dinner speech, speeches of goodwill, tribute, keynote and courtesy. A 27 636 0 1506

637. Theories and Effects of Mass Persuasion. (3). An analysis of the classical, contemporary and home-market theories of mass persuasion. Mass-communicated persuasion compared to persuasion in other audience settings. Conceptual models, typological effects and contributory agents of mass persuasion. Differential persuasive powers and advantages attributed to the several media. Effects of message content on mass audiences are explored. A 27 637 0 1506

672. Practicum in Audience Measurement. (3). Application of research techniques to practical problems in audience measurement. Also included are the identification of specific problems, the construction of measuring instruments (e.g., questionnaires), sampling techniques, collection of data, tabulation, analysis, and reports of findings. Prerequisite: Speech 770 or departmental consent. A 27 672 2 1599

712. Advanced Interpersonal Communication. (3). Advanced exploration of concepts and variables in interpersonal communication through the study of different theories as well as practical experiences in dyadic and small group communication. Prerequisite: Speech 112 or instructor's consent. A 27 712 1 0150

770. The Audience. (3). Analysis of speech audiences, including those of radio, television, public address and theater. Demographic and psychosocial dimensions and characteristics, quantitative and qualitative techniques of audience measurement, and evaluations thereof are included. A 27 770 0 1599

Theater
Courses for Graduate/Undergraduate Credit

516 & 517. Playwriting I and II. (3). Cross-listed as Eng. 517 and 518. The writing of scripts for performance. Emphasis is on both verbal and visual aspects of playwriting. If possible, the scripts will be performed. Prerequisites: 259 and instructor's consent. A 27 516 0 1007 & A 27 517 0 1007

542. Advanced Acting. (3). Continued development of methods established in Speech 243Q, with additional emphasis on contemporary vocal and movement techniques. Prerequisites: Speech 243Q and sophomore standing. A 27 542 0 1506

544. Advanced Stagecraft. (3). R. L. arr. A study of the principle design techniques and lighting applied to the stage with consideration of the elements of design and composition, light and shadow, as employed in scene design. All elements of advanced stagecraft: new materials and scenic techniques are considered in this study. Students complete practical studio work in the design of settings for a variety of productions. They must complete at least one project design including elevation drawing, water-color perspective, scaled model and a complete set of working drawings. Prerequisite: Speech 244. A 27 544 0 1007

559. Directing II. (3). R; L. Staging and rehearsal techniques, with emphasis on the problems of the period and stylized play. Prerequisites: Speech 259 or departmental consent and junior standing. A 27 559 0 1007

610. Musical Theater for the Public School Teacher. (2). Provides an interdisciplinary course, utilizing interdepartmental expertise (speech and music) to teach the student in both areas how to produce a musical in the secondary schools. Prerequisite: concurrent enrollment in Mus. Ed. 610. A 27 610 0 1007

621. Advanced Oral Interpretation. (3). Intensive study and analysis of various forms of literature, the techniques of effective oral communication and the building of the individual performance. Includes workshops and festivals. Prerequisites: Speech 221 and junior standing. A 27 621 0 1507

622. Academic Theater Practicum. (2). The investigation and exploration of the theatrical act in the classroom situation within the university community. This course is designed to reinforce the research, writing, directing and performing skills. Enrolled students, functioning as a company, produce and perform for various disciplines on campus. Repeatable once for credit. A 27 662 2 1007

623Q. Development of the Theater I. (3). The history of theatrical activity as a social institution and an art form, from its beginning to the present. The development of the dramatic, the history and development of the various branches of the art. The writing of plays, methods of staging and theatrical architecture of various periods are included. A 27 623Q 0 1007

624Q. Development of the Theater II. (3). From the 17th century to the present. A 27 624Q 0 1007
625. Dramatic Theory. (3). Critical examination of selected aesthetic theories of the theatrical arts and the relationship of the theories to major dramatic works and theatrical periods. Prerequisite: Speech 6230 or 6240 or departmental consent. A 27 625 0 1007

628. Playscript Analysis. (3). The course is designed to develop students' ability to analyze playscripts from the point of view of those who face the task of staging them. The focus is on studying and testing practical methods of analysis developed by outstanding theatre directors, teachers, and critics. Collective analysis and individual projects are part of the course work. Prerequisite: Speech 6230 or 6240, or English 324. A 27 628 0 1007

643. Styles in Acting. (3). Training in, and development of, the special techniques required for period or stylized plays, with special emphasis on Greek, Shakespearean, Restoration and modern nonrealistic styles. Prerequisites: Speech 2430, 542 and junior standing. A 27 643 0 1007

644. Scene Design. (3). Fundamentals of design. Practical work on University Theatre and Experimental Theatre productions is included. A 27 644 1 1007

645. Stage Lighting. (3). R; L arr. Lighting equipment and light design and its relation to scenery design. Emphasis is upon the problems in schools and colleges. Practical work on University Theatre and Experimental Theatre productions is included. Prerequisite: Speech 244 with a grade of C or better. A 27 645 1 1007

653. History of Costume. (3). R; L arr. Historical survey and individual research of dress from ancient Egypt to present day with emphasis on social, political, economic and religious influences. Theories and practice of adapting period styles to the stage. Prerequisite: Speech 253 or departmental consent. A 27 653 0 1007

Courses for Graduate Students Only

620. Investigation and Conference. (2-3). Directed research and experimentation for graduate students in some phase of (a) public address, (b) theater history and production, (c) radio-television or (d) the teaching of speech. Repeatable for credit up to a total of 6 hours. A 27 820 3 1199

623. History of Dramatic Criticism. (3). A survey and analysis of major critical theories from Aristotle to the present. A 27 623 0 1007

624. Development of Modern Theater Styles. (3). An examination of the major movements in the modern theatre since 1870. Emphasis is on both literary and physical elements of styles. A 27 824 0 1007

630. Theories of Rhetoric: Classical. (3). Cross-listed as Eng 825. An intensive study of the rhetorical theories of classical writers from 450 B.C. to the decline of Roman oratory. Principal emphasis is on Isocrates, Plato, Aristotle, Quintilian, Cicero and Longinus. A 27 830 0 1506

631. Theories of Rhetoric: Medieval, Renaissance and Modern. (3). Cross-listed as Eng 826. A study of the emerging patterns of rhetoric from the Second Sophistic to modern times. Analysis is made of the rhetorical systems associated with such figures as Augustine, Ficino, Buonarroti, Savonarola, Steven, Rushe, John Quincy Adams, Blair, Campbell and Whately. A 27 831 0 1506


860. Seminars in Speech. (2-3). Special seminars designed to treat problems in: (a) public address, (b) drama, (c) radio-television or (d) speech education. Repeatable for credit. A 27 860 9 1199

865. Organizational Communication. (3). Cross-listed as Mgmt 865. An analysis of communication models with emphasis on their applications to communication problems in organizations. Social-psychological processes underlying persuasion in interpersonal relations and through the mass media are explored. Communication systems and techniques within formal organizations are analyzed. A 27 865 0 1506

867. Trends in Speech Education. (3). To provide advanced speech students with a background for a philosophy of speech education. Readings and seminar discussion concern the philosophical rationales that underlie speech and drama as academic disciplines. Included also are the history of speech education, analysis of theories and methods, and comparative study of speech curricula today and projects to the future. A 27 867 0 1599

General Programs

Communications—Keith Williamson, coordinator

Gerontology—William C. Hays, director

Liberal Studies—Supervisory Committee, Martin Reif, chairperson

Public Administration—Joseph P. Pisciotte, director

Women's Studies—Dorothy Walters, coordinator

Communications

Graduate Faculty

Professor: Phillip J. Mohr

The graduate program in communications at Wichita State University is designed to provide students with a multidisciplinary foundation in human verbal communication that will serve a broad spectrum of interests and needs in many fields of endeavor. The program is based upon integration and synthesis of academic resources in communications in several departments and disciplines throughout the University.

A program administration committee composed of representatives from participating units provides direction for the Master of Arts in communications program.

Master of Arts in Communications and Areas of Specialization

The Master of Arts in communications (MA) program permits a generalist or specialist approach to any one of five areas of emphasis: (1) communication theory; (2) cross-cultural communications; (3) mass communication; (4) theater and drama; or (5) general communication. Students are provided with a thesis option (30-hour minimum) or a nonthesis option (36-hour minimum) in each area of emphasis except general communication. The latter provides a nonthesis program only.

Admission Requirements

In addition to the general Graduate School admission requirements, applicants' backgrounds must reflect competence in any one or more of the several communications areas. Such competence, based upon academic training or equivalent professional/vocational experience, will be evaluated by the coordinator of graduate studies and graduate faculty who comprise the Communications Program Admissions Committee. Students may be admitted to the program with deficiencies in background, but these deficiencies must be overcome by course work not to exceed 9 credit hours within the first academic year as stipulated by the admissions committee. In no case will courses taken to fulfill deficiencies be counted toward the minimum credit hour degree requirements.

Degree Requirements

Program Core (Required) Courses. All students enrolled in the MA in communications program must take the courses listed below, except as noted.

The following abbreviations are used in the course descriptions: L stands for lecture and L for laboratory. For example, 3R, 3L means 3 hours of lecture and 3 hours of lab.
Comm. 801, Introduction to Communication Research  2 hours
Comm. 802, Historical and Qualitative Methodologies in Communication Research  2 hours
Comm. 803, Empirical/Quantitative Research Methodology in Communication  2 hours
Comm. 870, Directed Research (non-thesis students)  2 or 3 hours
Comm. 875-876, Thesis (thesis students)  2-3 hours

Area Core (Required) Courses: In addition to the program core courses just listed, students must take certain required courses in their area of emphasis.

Communication Theory
- Speech 612, Contemporary Theories of Oral Communication  3 hours
- Speech 865, Organizational Communication  3 hours
- Both Comm. 802 and 803 (see program core above)  2 hours

Note: All communication theory majors in the non-thesis option will be required to take 3 hours of Comm. 870 (see program core above)

Cross-Cultural Communications
- Min. Stud. 540, Advanced Multicultural Cross-Cultural Communications  3 hours
- Min. Stud. 545, Cross-Cultural Communications Theory  3 hours
- Min. Stud. 725, Concepts of Cross-Cultural Communications  3 hours

Mass Communication
- Jorn. 720, Dimensions of Mass Communication  3 hours
- Speech 637, Theories and Effects of Mass Persuasion  3 hours
- Speech 700, the Audience  3 hours
- Min. Stud. 725, Concepts of Cross-Cultural Communications  3 hours

Theater and Drama
- Speech 623, Development of the Theater I  3 hours
- Speech 624, Development of the Theater II  3 hours
- Speech 625, Dramatic Theory  3 hours
- Speech 823, History of Dramatic Criticism  3 hours

General Communication
- At least one core course in each of the other four areas of emphasis  12 hours

Other Courses. In addition to the required program and area core courses, students in each area of emphasis, with advice and consent of their graduate faculty adviser, must select courses to complete the Plan of Study, as discussed in the Graduate School section at the beginning of the Graduate School Bulletin. The Plan of Study will be individually designed to accommodate a student's background, interests and needs and must include a minimum of 12 hours at the 700-800 level.

Examinations
Written comprehensive examinations will be administered to all candidates during the final semester of their degree program. In addition, those enrolled in thesis options will present an oral defense of the thesis. Examining committees will consist of the adviser, acting as chairperson, and three or four other members of the graduate faculty in communications, at least one of whom shall be from a discipline or area other than the student's area of emphasis.

Master of Education
The MEd program provides extensive study in secondary education with concentrations in speech communication, including rhetoric and public address, theater, broadcasting, and speech education. The course of study is a 36-hour, nonthesis program, and the Plan of Study includes 18 prescribed courses for graduate students only.

Courses for Graduate Students Only
801. Introduction to Communications Research (2). An integrative approach to an understanding of the nature and scope of communication research as it applies to communication theory, mass communication, cross-cultural communication, and theater/drama. An overview of the current status of research in these areas will be provided. Students will be instructed in the basic steps of research: availability of library and other resources, bibliographical search, computer access, and methodologies in communication research. The course emphasizes historical, critical, and observational research with particular emphasis on those forms of research common to communication studies. Prerequisites: Comm. 801 and Comm. 802 or 803. A 32 870: 3 1599
875-876. Thesis (2-3). Directed research culminating in a written research paper on a specific investigation, project, or production. Supervised by a committee of three graduate faculty members, with the examining committee acting as "instructor of record" and awarding the grade. Required of all Master of Arts in Communications (MAC) students who select the non-thesis option. Study should be in the student's area of emphasis. Course should be taken after completion of 24 hours of graduate work approved in the plan of study. Not renewable for credit nor available to students taking Comm. 875-876. Prerequisites: Comm. 801 and Comm. 802 or 803. A 32 875: 4 0601
875-876. Thesis (2-3). Directed research culminating in a written research paper on a specific investigation, project, or production. Supervised by a committee of three graduate faculty members, with the examining committee acting as "instructor of record" and awarding the grade. Required of all Master of Arts in Communications (MAC) students who select the non-thesis option. Study should be in the student's area of emphasis. Course should be taken after completion of 24 hours of graduate work approved in the plan of study. Not renewable for credit nor available to students taking Comm. 875-876. Prerequisites: Comm. 801 and Comm. 802 or 803. A 32 875: 4 0601

Gerontology
Graduate Faculty
Professors: Lowell Holmes (anthropology), Melvin Kahn (political science), Roger Kasten (communication disorders and sciences), Robert McCroskey (communication disorders and sciences), Harry Round (biological sciences)
Associate Professors: William Hays (gerontology), Wayne Parris (anthropology), Ram Pratap Singhal (chemistry), James Snyder (psychology), Samuel Yeager (public administration)
Assistant Professors: Elwin Barrett (social work), Elena Basile (sociology), Nancy Brooks (sociology), Marc Dicker (physician assistant), Lyndon Drew (gerontology), Helen Halstead (nursing), Timothy Harshorne (counseling and school psychology), Ellen Holmes (gerontology), Bernice Hutcherson (social work), Carla Lee (health science), Gregory Meissen (psychology), Nancy Snyder (public administration), James Traym (instructional services)

The gerontology program offers courses of study leading to the Master of Arts (MA) in gerontology. Because gerontology is concerned with gaining and applying knowledge about all aspects of aging in a wide range of professional settings, it is by nature, multidisciplinary.

The graduate degree program in gerontology at Wichita State draws upon the biological sciences, psychology, economics, sociology, the health professions, anthropology, and political science.

Master of Arts
The gerontology program offers two options leading to the MA, the generalist option and the specialist option. Both options require a minimum of 30 hours for the thesis track and 36 hours for the nonthesis track.
The generalist option is designed for students with little or no previous training in gerontology, among them professionals in such areas as logopedics, recreation, physical or occupational therapy, the ministry, counseling, social work, adult education, and mental health, where older people make up a significant and increasing proportion of the client population and where professionals with gerontological training are presently scarce.

The specialist option is designed for students who have undergraduate courses in gerontology. Since employment in the area of aging often demands the combination of knowledge and skills found in a particular discipline such as public administration, social work or mental health, the specialist option combines graduate course work in gerontology with an emphasis (12 hours) in another department or discipline.

**Admission Requirements**

In addition to the Graduate School admission requirements, applicants must have a grade point average of 3.00 (on a 4.00 scale) and must submit three letters of reference. Students desiring to pursue the generalist option must have an undergraduate degree in an applied or professional area or have work experience with older persons. Those who wish to pursue the specialist option must have completed course work in each of the following four areas: biology or physiology of aging, psychology of aging, economics of aging, or sociology of aging. They must have maintained a 3.00 average in these courses. These students must also meet the admission requirements of the department in which the area of specialization is being taken.

**Degree Requirements**

Students must take certain required core courses, as well as courses in the generalist or specialist option, with a minimum total of 30 hours for the thesis and 36 hours for the nonthesis track.

**Core (Required) Courses**

- All students enrolled in the MA program in gerontology must take the following courses:
  - Geron. 800, Seminar in Gerontology 3 hours
  - Geron. 801, Field Research in Gerontology 3 hours
  - Geron. 801, Field Research in Gerontology 3 hours
  - Geron. 802, Policy Making for Gerontologists 3 hours
  - Geron. 810, Advanced Gerontology Internship 6 hours
  - Thesis (if option selected) 3 hours

**Written comprehensive exams are required of all students who pursue the nonthesis program option.**

**Generalist Option**

In addition to the core courses, students pursuing the generalist option must take the following courses:

- Geron. 731, Growth and Development IV: Adults and Aging
- Geron. 604, Developmental Psychology (advisor's consent required) 3 hours
- Geron. 663, Economic Security 3 hours
- Two of the following three courses: 6 hours
  - Geron. 513, Sociology of Aging
  - Geron. 514, Anthropological Perspectives on Aging
  - Geron. 5180, Biology of Aging

**Specialist Option**

In addition to the core courses, students pursuing the specialist option are required to take a minimum of 12 hours offered by the department in the area of specialization. These courses must meet the approval of the graduate coordinator or department chairperson in the department of specialization.

**Elective gerontology courses 3-9 hours**

The internship and thesis, if specialist option selected, must be related both to gerontology and to the area of specialization. The Plan of Study required by the Graduate School must also be approved by the gerontology program and the outside department.

**Gerontology Emphasis**

The gerontology emphasis is a 12- to 15-hour concentrated core in gerontology taken as part of a master's degree program in another department. Students who wish to pursue the gerontology emphasis must fulfill the requirements of the degree granting department as well as the designated gerontology core.

**Courses for Graduate/Undergraduate Credit**

**501. Internship in Gerontology. (3-6).** To provide a specially designed field experience for students who need or desire training that will enhance their professional abilities and skills in gerontology, and for whom academic credit is appropriate. As part of the internship, students collectively meet one hour weekly with the field placement supervisor. Repeatable for credit not to exceed a total of 6 hours. Prerequisite: instructor's consent. P 15 501 2 2201

**502. Old People and Organizations. (3).** Cross-listed as Soc. 502. This course examines the agencies and organizations that deal with or are comprised of the elderly. The relationship between various social networks and the participation of the elderly as they develop new roles is examined. Prerequisite: Soc. 2110 or instructor's consent. P 15 502 0 2200

**506. Politics of Aging. (3).** Cross-listed as Pol. Sci. 506. P 15 506 0 2207

**512. Issues in Minority Aging. (3).** Cross-listed as Min. Stud. 512. Prerequisites: Min. Stud. 100, Geront. 1000, Soc. 211, or instructor's consent. P 15 512 0 4999

**513. Sociology of Aging. (3).** Cross-listed as Soc. 513. P 15 513 0 2206

**514. Anthropological Perspectives in Gerontology. (3).** Cross-listed as Anthro. 514. P 15 514 0 2202

**518. Biology of Aging. (3).** Cross-listed as Biol. 518. P 15 518 0 0410

**537. The Social Consequences of Disability. (3).** Cross-listed as Soc. 537. P 15 537 0 2208

**550. Selected Topics in Gerontology. (1-6).** Study in a specialized area of gerontology with the focus upon preprofessional programs and current issues in the field of aging. Emphasis is on knowledge and skills in applied areas of gerontology as they relate to an emerging area of research and application. Repeatable up to 6 hours. Prerequisite: instructor's consent. P 15 550 0 2201

**590. Legal Aspects of Health Care Administration. (3).** Cross-listed as HAE 590. P 15 590 0 2202

**604. Developmental Psychology. (3).** Cross-listed as Psych. 604. P 15 604 0 2009

**610. Aging: Personal, Social, and Professional Perspectives. (3).** Cross-listed as SW 610. P 15 610 0 2104

**653. Economic Insecurity. (3).** Cross-listed as Econ. 263. P 15 653 0 2201

**663. Independent Readings in Gerontology. (1-3).** Directed study in a specialized topic in gerontology. Repeatable up to 6 hours. Prerequisite: 12 hours of gerontology credit or advisor's consent. P 15 663 0 2201

**731. Growth and Development IV: Adults and Aging. (3).** Cross-listed as IS 731. P 15 731 0 0322

**750. Workshop in Gerontology. (1-3).** A course designed to provide specialized instruction, using a variable format, in a gerontologically relevant subject. Repeatable for credit. P 15 750 2 2201

**781. Cooperative Education. (3-6).** Same as Geront. 801. P 15 801 0 2201

**798. Multidisciplinary Perspectives on Aging. (3).** Cross-listed as SW 798. For students enrolled in the MA program in gerontology, among them professionals in such areas as activities therapy, the ministry, counseling, social work, adult education, and mental health, where older people make up a significant and increasing proportion of the client population and where professionals with gerontological training are presently scarce.

The specialist option is designed for students who have completed undergraduate courses in gerontology. Since employment in the area of aging often demands the combination of knowledge and skills found in a particular discipline such as public administration, social work or mental health, the specialist option combines graduate course work in gerontology with an emphasis (12 hours) in another department or discipline.

**Admission Requirements**

In addition to the Graduate School admission requirements, applicants must have a grade point average of 3.00 (on a 4.00 scale) and must submit three letters of reference. Students desiring to pursue the generalist option must have an undergraduate degree in an applied or professional area or have work experience with older persons. Those who wish to pursue the specialist option must have completed course work in each of the following four areas: biology or physiology of aging, psychology of aging, economics of aging, or sociology of aging. They must have maintained a 3.00 average in these courses. These students must also meet the admission requirements of the department in which the area of specialization is being taken.

**Degree Requirements**

Students must take certain required core courses, as well as courses in the generalist or specialist option, with a minimum total of 30 hours for the thesis and 36 hours for the nonthesis track.

**Core (Required) Courses**

- All students enrolled in the MA program in gerontology must take the following courses:
  - Geron. 800, Seminar in Gerontology 3 hours
  - Geron. 801, Field Research in Gerontology 3 hours
  - Geron. 802, Policy Making for Gerontologists 3 hours
  - Geron. 810, Advanced Gerontology Internship 6 hours
  - Thesis (if option selected) 3 hours

Written comprehensive exams are required of all students who pursue the nonthesis program option.

**Generalist Option**

In addition to the core courses, students pursuing the generalist option must take the following courses:

- Geron. 731, Growth and Development IV: Adults and Aging
- Geron. 604, Developmental Psychology (advisor's consent required) 3 hours
- Geron. 663, Economic Security 3 hours
- Two of the following three courses: 6 hours
  - Geron. 513, Sociology of Aging
  - Geron. 514, Anthropological Perspectives on Aging
  - Geron. 5180, Biology of Aging

**Specialist Option**

In addition to the core courses, students pursuing the specialist option are required to take a minimum of 12 hours offered by the department in the area of specialization. These courses must meet the approval of the graduate coordinator or department chairperson in the department of specialization.

**Elective gerontology courses 3-9 hours**

The internship and thesis, if specialist option selected, must be related both to gerontology and to the area of specialization. The Plan of Study required by the Graduate School must also be approved by the gerontology program and the outside department.

**Gerontology Emphasis**

The gerontology emphasis is a 12- to 15-hour concentrated core in gerontology taken as part of a master's degree program in another department. Students who wish to pursue the gerontology emphasis must fulfill the requirements of the degree granting department as well as the designated gerontology core.

**Courses for Graduate/Undergraduate Credit**

**501. Internship in Gerontology. (3-6).** To provide a specially designed field experience for students who need or desire training that will enhance their professional abilities and skills in gerontology, and for whom academic credit is appropriate. As part of the internship, students collectively meet one hour weekly with the field placement supervisor. Repeatable for credit not to exceed a total of 6 hours. Prerequisite: instructor's consent. P 15 501 2 2201
sion to graduate school. Not open to students with an undergraduate major or minor in gerontology. P 15 796 0 2201

800. Seminar In Gerontology I. (3). Advanced study of the theories of aging from a multidisciplinary perspective with emphasis upon social gerontology. Prerequisite: Geront. 756 or 12 hours of gerontology or instructor's consent prior to registration. P 15 796 0 2201

801. Field Research In Gerontology. (3). An examination of the methods of participant observation and interview as approaches to understanding aging and the aged. Students gain practical experience in these methods through individual fieldwork projects. Prerequisites: Geront. 796 or 12 hours of gerontology or instructor's consent prior to registration. P 16 801 0 2201

802. Policymaking for Gerontologists. (3). The making of policy by gerontologists through analysis, planning, and implementation. This course assumes knowledge of aging programs. Prerequisite: Geront. 796 or 12 hours of gerontology or instructor's consent prior to registration. P 16 802 0 2201

810. Advanced Gerontology Internship. (3-6). The internship is designed to integrate academic gerontology and practical experience with an emphasis upon application of research findings. Students are assigned to an agency or organization engaged in planning, administering, or providing direct services to older people. As part of the internship, the intern is required to submit and be examined upon a comprehensive internship paper. Prerequisite: 12 hours of gerontology and instructor's consent prior to registration. P 16 810 2 2201

820. Thesis. (1-3). Repeatable, but total credit hours shall not exceed 4 hours. P 16 820 4 2201

Liberal Studies

Supervisory Committee: Jeneva Brewer (mathematics), Ginette Adamson (French), Robert Knapp (psychology), Martin Reif (graduate studies coordinator for the program), Gayle Davis (women's studies)

The Master of Arts in Liberal Studies (MALS) program is designed for persons who wish to pursue a particular topical or interdisciplinary interest at the graduate level, but find the existing programs either too specialized or insufficiently individualized. The liberal studies program offers students an opportunity to design their own program of study to answer their particular needs and interests.

Admission Requirements

Applicants should have a baccalaureate degree from an accredited institution and, generally, have a grade point average of 2.75 or better. Usually no more than 6 hours of graduate credit from another program may be transferred into the liberal studies program.

When submitting an application to the Wichita State Graduate School, students should include a brief essay describing their reasons for selecting the liberal studies program as opposed to a regular master's level program.

At least three graduate faculty representing at least two of the departments in which the student's work will be concentrated should be selected as advisors and program supervisors. A written statement from one graduate faculty member who has agreed to serve as the student's primary adviser and to chair the student's committee must be submitted to the graduate studies coordinator.

The Liberal Studies Supervisory Committee may request that the applicant submit Graduate Record Examination scores (verbal and quantitative).

Students meeting standards for admission to the program will be admitted on a conditional basis, pending final approval of their Plan of Study.

Before completing the first 12 hours of graduate work in the program, the student must:

1. Complete selection of members of the faculty advising committee and inform the graduate studies coordinator.
2. With the assistance of this committee, prepare a Preliminary Plan of Study.
3. Secure approval of the Plan of Study from the MALS Supervisory Committee, which will forward its recommendation to the Graduate School.

Once accepted by the Graduate School, the Plan of Study becomes the student's individualized curriculum, and any changes to it must be approved by the Student's Advisory Committee and the MALS Supervisory Committee.

Degree Requirements

The structural framework for the degree is a Plan of Study, developed by the student in consultation with faculty in the program. It must include:

1. A minimum of 36 semester hours of credit from at least three disciplines
2. No more than 12 semester hours from any one department (exclusive of the terminal project)
3. A maximum of 12 hours in a college other than liberal arts and sciences
4. At least 12 of the 36 total hours in courses numbered 700 or above

The terminal project, required of all students, may be a master's report for 4 hours credit, a master's thesis for 6 hours credit, a practicum or internship for either 3 or 6 hours, or a comprehensive examination covering all course work and related activities and carrying no credit hours. The specific nature of the terminal project must be prescribed in the Plan of Study.

Courses for Graduate Students Only

875. Thesis. (1-6). A course for students who are finishing the Master of Arts in Liberal Studies (MALS). The student writing a thesis must be enrolled in this course until the thesis is completed and all theses requirements have been satisfied. Prerequisite: consent of student's advisory committee and instructor. A 33 865 4 4999

885. Terminal Project. (2-6). A course for students who are near the end of their MALS program and involved in a Terminal Project. The Terminal Project may have many aspects such as field work, practicum, internship, research report, or any other individualized activity, but the scope of it must be approved by the student's advisory committee. The student involved in a project must be enrolled in this course until the project is completed and all project requirements have been satisfied. A 33 865 4 4999

Public Administration

Graduate Faculty

Professors: Daniel D. Ahlberg, Joe P. Pisciotta (director, Center for Urban Studies)

Associate Professors: H. Edward Fintel (associate professor, Center for Urban Studies), James M. Platt, Samuel J. Yeager

Assistant Professors: Mark A. Gasser, Nancy McCarthy Snyder

Graduate Faculty in Administration

Professors: Robert D. Alley (education), John J. Hartman (sociology)

Associate Professors: Richard G. Hays, Jr. (sociology/gerontology and director, University Gerontology Center), Don E. Malzahn (industrial engineering), Gerald S. McDougall (chairperson, economics), I. N. Yoon (economics)

Assistant Professor: Edward Fagerlund (economics)

Master of Public Administration

The Master of Public Administration (MPA) degree at Wichita State University is designed to prepare students for professional careers in public and quasi-public organizations. The program is interdisciplinary in nature and is structured to respond to the unique clientele of an urban university.

The philosophy underlying the MPA degree is that interdisciplinary approaches are essential for understanding the changing urban environment and for effective performance in management and staff positions in government. In their degree programs students have the opportunity for exposure to the methods and perspectives of the social and behavioral sciences, engineering and technology, and the humanities. A link between these disciplines and the problems of public management is emphasized through methods which include use of practitioners in the class-
Areas of Specialization

The degree allows students to develop a specialization in areas of career interest through selection of up to 18 hours of course work from related offerings of the University. Students are required to have developed specializations in public finance, health care administration, gerontology, real estate and land use planning, and program analysis, evaluation, among others.

Completion Options

Students may complete the degree program in one of three ways:

- Internship Option—This option is for students without professional work experience, and 6 credit hours may be earned in the process of completing an internship. Students must write and publish a research paper relevant before being granted internship credit. Intern positions are remunerative and are awarded on a competitive basis; however, they cannot be guaranteed.

- Applied Research Option—Students may choose the applied research option for completion of the degree and earn 3 credit hours. In this option, the student conceptualizes and researches a policy relevant question and delivers a finished product with policy application. Students must successfully defend the paper before a faculty committee.

- Thesis Option—This option is designed for students planning graduate work beyond the MBA or careers in research. Six credit hours may be earned in writing an acceptable thesis. Candidates must pass an oral defense of the thesis.

Financial Assistance

The Board of Trustees of Wichita State University through the Graduate School and the Center for Urban Studies offers a number of graduate assistantships on a competitive basis. Recipients receive a stipend for the academic year plus a partial tuition waiver. Graduate assistants work 20 hours per week with faculty in the Center's teaching, research, and public service activities.

The Center for Urban Studies also designates two outstanding graduate assistants as Hugo Wall Fellows. Each Fellow is granted a $500 per semester stipend and in addition to the regular graduate assistantship remuneration.

Internship positions, while not guaranteed, are remunerative and are awarded on a competitive basis. For 1982, the City of Wichita internships and the Governor's Fellows (Kansas) received stipends of approximately $15,000 for a full calendar year.

The following abbreviations are used in the course descriptions: P stands for lecture and L for laboratory. For example, 3P, 4L means 3 hours of lecture and 4 hours of lab.

Courses for Graduate/Undergraduate Credit

700. Urban Affairs. (3). A study of the process of urbanization from a multidisciplinary point of view. Prerequisite: enrollment in either urban affairs program or instructor's consent. P 13 700 0 2214

702. Urban Research Methods. (3). This course is designed to acquaint the student with the principles of systems analysis and the topics by which these principles can be applied. Example applications are taken from urban problems. Emphasis is on the formulation of realistic models and solutions. Computer techniques are developed in class and applied to case studies. Prerequisite: instructor's consent. P 13 720 0 2214

710. Scope of Public Administration. (3). Cross-listed as Pol. Sci. 710. Review of the scope of the field of public administration including a survey of key concepts and schools of thought underlying the field and identification of critical issues shaping the future development of the field. P 13 710 0 2214

720. Urban Systems. (3). Cross-listed as IE 720. This course develops the principles of systems analysis and the topics by which these principles can be applied. Example applications are taken from urban problems. Emphasis is on the formulation of realistic models and solutions. Computer techniques are developed in class and applied to case studies. Prerequisite: instructor's consent. P 13 720 0 2214

730. Decision Making. (3). Course includes theories of decision-making ability under varying degrees of uncertainty. Content coverage includes such topics as theoretical frameworks of decision making, environment for stimulating creativity, cognitive inhibitions to problem identification, alternative decision-making techniques, decision implementation and utilization of quantitative tools in decision making. Prerequisite: instructor's consent. P 13 730 0 2214

755. Special Topics In Urban Affairs. (3). Provides students with an opportunity to engage in an advanced study of urban topics that are of immediate concern and arise only occasionally. The content varies with issues that arise, student needs and faculty expertise. Directed to Master of Public Administration students. May be repeated if topics are different. Prerequisite: instructor's consent. P 13 755 0 2214

Courses for Graduate Students Only

875-876. Thesis. (3-3). Prerequisite: advisor's consent. P 13 875 0 2214; P 13 876 0 2214

890. Urban Affairs Internship. (3-6). The internship is designed to integrate academic programs and practical experience. Students admitted to the internship are assigned to work in an approved government, community or business organization for a period of 3 to 12 months. As a part of the internship experience, the intern is required to submit and be examined upon an internship paper. Prerequisites: completion of all urban affairs core courses and 6 hours of additional graduate credit courses. P 13 890 2 2214

899. Applied Research Paper. (3). The applied research paper is an opportunity for a faculty committee to develop and measure competency in the areas of writing,
research, and policy conceptualization. Each paper will address a policy relevant question and the delivery of a finished product with policy application. This course is to be taken in the last semester of course work. P 13 898 4 2214

**Women's Studies**

**Graduate Faculty**

**Associate Professor:** Dorothy Walters (director)

**Assistant Professors:** Elena Bastida (sociology), Dorothy Billings (anthropology), Gayle Davis (women's studies), Sally Kitch, Carol Konek, Elsie Shore (psychology), Anita Skeen (English), Jacqueline Snyder (assistant vice president for academic affairs)

Students may earn a master's degree in several areas with an emphasis in women's studies. These include instructional services, counseling and school psychology, sociology, and cross-cultural communications. Women's studies may be included as one of two or three areas of interest under the MA in Liberal Studies, an individually designed graduate program. In other areas, such as the community program in psychology, students may orient course electives and thesis research to accommodate an interest in women's studies. The following courses are available for graduate credit.

**Courses for Graduate/Undergraduate Credit**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>516</td>
<td>Sociology of Sex Roles. (3)</td>
<td>Cross-listed as Soc. 516</td>
<td>A 10 516 0 2208</td>
</tr>
<tr>
<td>530</td>
<td>The American Woman in History. (3)</td>
<td>Cross-listed as Hist. 530</td>
<td>A 10 530 0 2208</td>
</tr>
<tr>
<td>533</td>
<td>Women and the Law. (3)</td>
<td>This course is an introduction to the legal aspects of women's rights, including the equal rights amendment to the U.S. Constitution; right to choose a name; sex discrimination in employment, education and credit; welfare and criminal justice. Consideration will also be given to women in the field of law, such as lawyers and legislators.</td>
<td>A 10 533 0 4903</td>
</tr>
<tr>
<td>534</td>
<td>Psychology of Women. (3)</td>
<td>Cross-listed as Psych. 534</td>
<td>A 23 534 0 2001</td>
</tr>
<tr>
<td>535</td>
<td>Images of Women in Literature. (3)</td>
<td>Cross-listed as Eng. 535</td>
<td>Women characters as stereotypes, archetypes and fully developed human beings in the works of various authors.</td>
</tr>
<tr>
<td>536Q</td>
<td>Writing by Women. (3)</td>
<td>Cross-listed as Eng. 536</td>
<td>The work of major women writers, both British and American, in poetry and prose.</td>
</tr>
<tr>
<td>542</td>
<td>Women in Other Cultures. (3)</td>
<td>Cross-listed as Anthro. 542</td>
<td>A 10 542 0 2202</td>
</tr>
<tr>
<td>570</td>
<td>Directed Readings. (1-3)</td>
<td>This course is designed for students who wish to pursue special reading or research projects not covered in course work. A 10 570 3 4903</td>
<td></td>
</tr>
<tr>
<td>580</td>
<td>Special Topics. (1-3)</td>
<td>This course will focus on advanced topics of interest to women's studies. A 10 580 0 4903</td>
<td></td>
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<tr>
<td>580B</td>
<td>History of Women's Culture. (3)</td>
<td>This course will survey the contributions of American women to visual arts and crafts, poetry and music from the late 18th century until the emergence of the 20th century women's art movement. A 10 580B 0 4903</td>
<td></td>
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<tr>
<td>580C</td>
<td>Contemporary Women's Art. (3)</td>
<td>This course looks at works by women in the visual arts, music and poetry since the 1960s. A 10 580C 0 4903</td>
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<tr>
<td>580D</td>
<td>Theories of Feminism. (3)</td>
<td>This course examines various approaches taken by theorists both of the women's movement and of the cultural status of women. A 10 580D 0 4903</td>
<td></td>
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<tr>
<td>589</td>
<td>Seminar in Women's Issues. (3)</td>
<td>Designed to give students experiential learning in interdisciplinary skill development related to women's issues in law, psychology, sociology, economics and literature and to offer independent study and field work in the students' area of specialization related to women. A 10 589 0 4903</td>
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<tr>
<td>635</td>
<td>Leadership Techniques for Women. (3)</td>
<td>Cross-listed as Speech 635</td>
<td>A course designed to provide the woman student experience in decision making and to improve skills in leadership through role playing and exercise in group dynamics. A 10 635 0 4903</td>
</tr>
<tr>
<td>750</td>
<td>Current Concerns of Women. (2-3)</td>
<td>Workshop. P 14 750 0 4903</td>
<td></td>
</tr>
</tbody>
</table>
Graduate Faculty—1984-85
Full Membership

Date or dates following title refer to time of initial and successive appointments. Faculty listed have academic rank.


Ahlborg, Clark D., University Professor (1968). BA, Wichita State University, 1939; MA, Syracuse University, 1942; PhD, 1951; LL.D, 1969; LHD, St. Lawrence University, 1981.

Alexander, David R., Associate Professor of Physics and Director of Lake Alton Public Observatory (1971). BS, Kansas State University, 1967; AM, Indiana University, 1968; PhD, 1971.

Allen, Annette S., Associate Professor of Chemistry (1964). Candidate for Ryksuniversiteit te Nijmegen, 1963; BS, Portland State University, 1952; PhD, Tulane University, 1965.

Alley, Robert D., Professor of Secondary Education (1967). BS, Iowa State University, 1957; ME, University of Montana, 1960; EdD, Arizona State University, 1965.

Anderson, Robert E., Professor of Educational Administration (1967). BA, University of Iowa, 1962; MA, 1963; EdD, University of Nebraska, 1970.


Arteaga, Lucilo, Professor of Mathematics and Statistics (1968). BA, University of Zaragoza, Spain, 1942; MS, Dalhousie University, 1959; PhD, University of Saskatchewan, 1964.

Bajaj, Prem N., Associate Professor of Mathematics and Statistics (1968). BA, Punjab University, 1951; MA, 1954; MS, Case Western Reserve University, 1967; PhD, 1969.

Ballenger, Marcus T., Associate Professor of Elementary Education (1970). BS in Ed, North Texas State University, 1958; MED, Texas Tech University, 1963; EdD, 1970.

Bastida, Elena M., Assistant Professor of Sociology (1981). BA, Kansas State University, 1970; MA, 1972; PhD, University of Kansas, 1979.

Bateman, Morita M., Associate Professor of Decision Sciences (1966). BSME, University of South Carolina, 1946; MS, University of North Carolina, 1950; PhD, Oklahoma State University, 1967.

Belt, John A., Associate Professor of Management (1971). BA, University of Southern California, 1956; PhD, Texas Tech University, 1971.


Benningfield, Lloyd M., Professor of Electrical Engineering and Dean for Graduate Students and Research (1973). BSSE, Oklahoma State University, 1951; MSEEE, University of Missouri, 1957; PhD, Purdue University, 1967.


Berg, J. Robert, Professor of Geology (1940). BA, Antioch College, 1936; MS, University of Iowa, 1940; PhD, 1942.

Bernhart, Walter D., Professor of Aeronautical Engineering (1984, 1984). BSCE, Kansas State University, 1950; MS, Wichita State University, 1955; PhD, Oklahoma State University, 1964; Licensed Professional Engineer—Kansas.

Bezzi, Diodato R., Associate Professor of Elementary Education (1959). BA, Michigan State University, 1954; EdD, 1956.

Billings, Dorothy K., Assistant Professor of Anthropology (1968). BA, University of Wisconsin, 1953; PhD, University of Sydney, 1972.

Biskesee, Donald J., Associate Professor of Anthropology (1968). BA, University of Wisconsin-Milwaukee, 1975.

Black, Donald L., Assistant Professor of Administration of Justice (1976). BA, Northern Illinois University, 1967; MA, 1970; PhD, Michigan State University, 1976.


Born, John S., Professor of History (1965). BA, University of Texas, 1952; MA, University of Houston, 1958; PhD, University of New Mexico, 1963.

Bosresen, C. Robert, Associate Professor of Psychology (1965). BS, Northwestern University, 1953; AM, University of Missouri, 1958; PhD, 1969.


Bowyer, James M., Professor and Chairperson of the Department of Mechanical Engineering (1964). BS, Kansas State University, 1942; MS, 1949; PhD, University of California, 1956; Licensed Professional Engineer—California.

Boyd, John David, Associate Professor of Landscape Architecture (1972). BA, California State University, Long Beach, 1966; MFA, Cranbrook Academy of Art, 1971.

Brady, Stephen W., Associate Professor of Mathematics and Statistics (1967). AB, Indiana University, 1963; AM, 1965; PhD, 1968.

Bravo-Elizondo, Pedro, Associate Professor of Spanish (1965). B.S., Universidad Tecnica del Estado, Chile, 1957; MA, Education, Catholic University, Valparaiso, Chile, 1964; MA, University of Iowa, 1971; PhD, 1974.

Breazeale, John B., Professor of Physics, Vice President for Academic Affairs and Dean of Faculties (1969). BS, Millsaps College, 1947; MS, University of Alabama, 1951; PhD, University of Virginia, 1955.


Brooks, Nancy F., Assistant Professor of Sociology (1972, 1975). BA, Wichita State University, 1965; MA, 1967.

Brown, Karen Lee, Assistant Professor of Biological Sciences (1982). BA, Miami University-Oxford, Ohio, 1974; MS, 1976; PhD, University of Georgia, 1981.


Burke, Kenneth W., Professor of Communicative Disorders and Sciences (1971). BA, University of Iowa, 1953; MA, University of Kentucky, 1955; PhD, Purdue University, 1962.


Burke, Michael J., Assistant Professor of Health Sciences (1984). BS, University of Akron, 1978; MS, Medical College of Wisconsin, 1981; PhD, 1984.

Bush, Martin H., Associate Professor of History and Vice President for Academic Development (1970). BA, State University of New York at Albany, 1953; MA, 1959; PhD, Syracuse University, 1956.


Cargill, Charles A., Associate Professor of Religion (1957). BS, University of Notre Dame, Indiana, 1958; MA, Boston College, 1966; PhD, 1969.


Carroll, Jeri Ann, Assistant Professor of Elementary Education (1982). BME, University of Kansas, 1965; MS, 1973; PhD, 1980.

Cassar, James J., Endowment Associate Distinguished Professor of Music (1970). BS, Case Western Reserve University, 1940; PhD, 1945.

Castagno, Leon M., Professor of Education and Dean of College of Education (1967). BA, Hiram College, 1951; MED, Kent State University, 1952, PhD, Ohio State University, 1961.

Chakrapani, N., Assistant Professor of Computer Science (1962). BS, University of Madras, 1960; MS, 1968.


Chang, Dae H., Professor of Administration of Justice (1975). BA, Michigan State University, 1957; MA, 1960; PhD, 1966.

Cheng, Lai-Cheung, Associate Professor of Mechanical Engineering (1976). BS, National Taiwan University, 1945; MS, 1948; PhD, University of Illinois at Chicago, 1955; Licensed Professional Engineer—Kansas.

Childs, David T., Associate Professor of Music Theory and Chairperson of Department of Musicology—Composition (1956). BM, Houghton College, 1960; MM, George Pea...
body College for Teachers, 1961; BD, Vandervilt University, 1965; PhD, George Peabody College for Teachers, 1967.

Daley, Joseph M., Associate Professor of Economics (1972). BA, Seattle National University, Seoul, Korea, 1965; MA, Wayne State University, 1969; PhD, University of Illinois, 1977.

Chopra, Dharam V., Professor of Mathematics and Statistics (1967). BA, Punjab University, India, 1950; MA, 1953; MA, University of Michigan, 1961; AM, 1963; PhD, University of Nebraska, 1968.

Chung, Kae H., Professor and Chairman of Department of Management (1970). BA, Seoul National University, Seoul, Korea, 1959; MBA, Louisiana State University, 1965; PhD, 1969.

Ciboski, Kenneth N., Associate Professor of Political Science (1968). BA, University of Kansas, 1963; MA, 1965; PhD, University of Washington, 1971.


Collins, George W., Associate Professor of Economics (1968). BA, Northwestern University, 1948; MA, 1950; PhD, University of Colorado, 1965.


Collison, Brooke B., Associate Professor of Counseling and School Psychology (1969). BS, University of Kansas, 1956; MEd, 1962; PhD, University of Missouri, 1969.


Cornelius, Richard D., Associate Professor of Chemistry (1977). BA, Carleton College, 1969; PhD, University of Iowa, 1974.

Cress, Allan M., Professor of German (1953). AB, University of Illinois, 1942; MA, 1948; PhD, 1952.

Crow, Tanya D., Assistant Professor of Mathematics and Statistics (1962). BA, University of Wisconsin, 1956; MSW, 1957; PhD, Florida State University, 1965.


Cullum, Dorothy E., Assistant Professor of Vocational Education (1969). BA, Bangor College, 1966; MW, Western Kentucky University, 1969; DMA, University of Colorado, 1977.

Cutler, Brian, Associate Professor of Mathematics and Statistics (1962). BA, University of Wisconsin, 1961; MS, 1963; PhD, University of Illinois, 1972.


Daley, Joseph M., Associate Professor of Marketing and Small Business and Director of Aviation Management Program (1982). BSBA, University of Alabama, 1968; MS, University of Arkansas, 1971; PhD, 1977.


Davis, Gayle R., Assistant Professor of Women's Studies (1982). BA, Muskingum College, 1968; MA, Michigan State University, 1975; PhD, 1981.


Decker, Jay C., Professor of Music and Director of Orchestras (1971). BMED, Wichita State University, 1965; MS in Music Education, University of Illinois, 1962; DMA, University of Missouri at Kansas City, 1971.

DeSilva, Dharme, Associate Professor of Mathematics (1969). BA, University of Evansville, 1957; MS, Southern Illinois University, 1969; PhD, Indiana University, 1968.


Dey, Glen R., Professor of Counseling and School Psychology and Chairperson of Department of Personnel Services (1967). BS, Indiana University, 1974; MS, 1975; PhD, 1981.

Dijkstra, Donald A., Associate Professor of Biological Sciences (1963). BA, University of Louisville, 1962; MS, 1965; PhD, University of Kansas, 1966.

Dooren, Stephen E., Assistant Professor of Administration of Justice (1977). BA, Ottawa University, 1962; MS, University of New Mexico, 1974; PhD, Louisiana State University, 1978.

Douglas, Donald M., Associate Professor of History (1965). BA, Kansas State University, 1961; MA, 1963; PhD, University of Kansas, 1973.


Dreyfus, John E., Associate Professor of History (1970). BS, Bowling Green State University, 1965; MA, 1966; PhD, Kent State University, 1970.

Duell, Dennis C., Associate Professor of Economics, Associate Dean of College of Business Administration and Director of the Center of Business and Economic Research (1967). BA, Kansas State University, 1961; MA, 1963; PhD, University of Illinois, 1969.

Duell, Orpha K., Associate Professor of Educational Psychology (1967). BS, Kansas State University, 1963; MS, University of Illinois, 1965; PhD, 1967.

Dunlop, William R., Assistant Professor of Administration of Justice (1961). BS, Iowa State University, 1952; MS, 1959; PhD, 1964.


Egbert, Robert I., Assistant Professor of Electrical Engineering (1960). BSEE, University of Missouri at Rolla, 1972; MSEEE, 1973; PhD, 1976; Licensed Professional Engineer—Missouri, Kansas.

Ewing, Elizabeth, Assistant Professor of Biological Sciences (1971). BS, University of Illinois, 1963; MS, 1964; PhD, University of Iowa, 1969.

Eyer, Alan R., Professor of Mathematics and Statistics (1967). BS, New Mexico State University, 1966; MA, Indiana University, 1965; PhD, 1970.


Fagin, James, Assistant Professor of Administration of Justice (1974). BA, University of North Carolina, 1948; Southern Illinois University, 1972; PhD, 1977.

Faires, Wesley L., Assistant Professor of Chemistry (1965). BA, Wichita State University, 1955; MA, 1956; PhD, 1965.

Farnsworth, David N., Professor of Political Science (1956). BA, Washington University, 1977; PhD, 1977.


Fisher, Glenn W., Regents' Professor of Urban Affairs and Professor of Economics (1970). BA, University of Iowa, 1948; MA, University of North Carolina, 1950; PhD, University of Wisconsin, 1954.


Flint, Henry, Associate Director of Urban Studies and Associate Professor of Urban Affairs (1979). BS, Emporia State University, 1964; MA, George Washington University, 1965; PhD, University of Kansas, 1970.

Foley, David, Assistant Professor of Communication Studies (1980). BA, St. Mary's College, 1964; MS, Northern Illinois University, 1966; PhD, Illinois Institute of Technology, 1975.


Forster, Donald L., Assistant Professor of Mathematics (1971). BA, Michigan State University, 1959; MA, 1963; PhD, University of Washington, 1974.
and chairperson of Department of Physics (1966). BA, Reed College, 1957; PhD, University of Colorado, 1963; MA, University of Oklahoma, 1964; MS, University of Texas, 1965.

Fox, Raymond L., Professor and Chairperson of the Department of Biological Sciences (1979). BA, University of California, Santa Barbara, 1963; PhD, 1967.

Fremont, Theodore S., Associate Professor of Educational Psychology (1970). BA, Nebraska Wesleyan University, 1965; MS, Fort Hays State University, 1966; EdD, Oklahoma State University, 1970.


Frey, Donald L., Assistant Professor of Speech Communication (1983). BA, Bowling Green State University, 1965; MA, Wichita State University, 1968; PhD, Ohio State University, 1971.

Fry, Virginia H., Assistant Professor of Speech Communication (1983). BS, Bixby College, 1969; MA, Bowling Green State University, 1978; PhD, Ohio State University, 1983.


Gast, Susan K., Associate Professor of Nursing (1970). BA, Mission Baptist University, 1970; MS, University of Virginia, 1973; PhD, Kansas State University, 1981.

Gauthier, Don, Assistant Professor of Chemistry (1975). BA, University of California, 1975; MS, 1976; Ph.D, 1980.

Gauld, Delbert, Associate Professor of Chemistry (1975). BS, University of Wisconsin, 1970; MS, 1972; PhD, 1975.


Gillespie, Lawrence, Associate Professor of Psychology (1969). BA, Western Kentucky University, 1967; MA, University of Kentucky, 1971.

Gillespie, Louis J., Jr., Professor of Biological Sciences (1981). BA, New Mexico Highlands University, 1976; MA, University of Colorado, 1979; PhD, 1981.

Gillespie, Margaret, Associate Professor of Biology (1970). BS, University of Wisconsin, 1964; MA, University of California at Los Angeles, 1965; PhD, University of Minnesota, 1968.


Ginn, John A., Associate Professor of Geology (1971). BS, University of Wyoming, 1962; MS, 1965; PhD, University of Texas, 1970.


Griego, Viola M., Assistant Professor of Biological Sciences (1983). BA, New Mexico Highlands University, 1971; MA, University of Texas at Arlington, 1975; MS, 1976; PhD, University of Chicago, 1979.

Griot, John, Associate Professor of Political Science (1970). BA, Wichita State University, 1947; MFA, 1954; PhD, University of Chicago, 1967.


Guillette, Louis J., Jr., University of Southern California, 1970; MPA, 1974; PhD, 1978.

Gunsberg, Susan K., Associate Professor of Biological Sciences (1981). BA, New Mexico Highlands University, 1976; MA, 1979; PhD, 1983.

Hardy, James Lynn, Professor of Medical Science (1968). BS, University of California at Los Angeles, 1965; MS, 1969; PhD, University of Kentucky, 1970.

Hackett, Donald W., Associate Professor of Marketing (1973). MBA, University of Oregon, 1973; MS, 1974; PhD, 1976.


Hartshorne, Timothy S., Associate Professor of Psychology (1969). BA, New Mexico Highlands University, 1969; MA, 1971; PhD, University of Kansas, 1973; EdD, 1976.

Harmsberger, John L., Associate Professor of Economics (1965). BS in Ed, Southwest Missouri State University, 1965; MS, 1967; PhD, 1970.


Hathaway, Jeanine M., Associate Professor of English (1974). BA, University of California at Los Angeles, 1973; MS, 1974; PhD, 1975.

Hathaway, Jeanine M., Assistant Professor of English (1974). BA, University of California at Los Angeles, 1973; MS, 1974; PhD, 1975.

Hawley, Donna J., Associate Professor of Nursing and Director of Graduate Education (1981). BSN, University of Iowa, 1970; MA, University of Missouri at Kansas City, 1971; MN, University of Kansas, 1980; EdD, 1980.


Hayes, William C., Associate Professor of Sociology (1980). MS, University of California, 1973; BS, Ball State University, 1967; MA, PhD, University of Missouri, 1973.

Heerman, David T., Professor of Psychology (1949). AB, Indiana University, 1940; MA, 1942; PhD, 1947.

Heilmey, Myrla A., Associate Professor of Educational Psychology (1979). BA, Tabor College, 1951; MS, Emporia State University, 1965; PhD, Kansas State University, 1980.

Ho, James C., Professor of Physics (1971). BS, National Taiwan University, 1959; MS, University of California at Berkeley, 1960; PhD, 1965.

Hoag, Gerald B., Associate Professor of English (1967). AB, Loyola University, New Orleans, 1951; MA, Tulane University, 1955; PhD, 1965.

Holm, Robert M., Professor of Physical Education (1976). BFA, University of Kansas, 1941; MS, 1946; PhD, University of Iowa, 1954.


Holmes, Lowell D., Professor and Chairperson of Department of Anthropology (1981). BS, Northwestern University, 1950; PhD, 1957.

Hommerzheim, Donald L., Associate Professor and Graduate Coordinator of Industrial Engineering (1976). BA, Friends University, 1965; MS, Wichita State University, 1970; PhD, University of Arkansas, 1978.

Homa, W. William, Associate Professor of Aeronautical Engineering (1984). BS, University of Alabama, 1967; MS, University of Texas, 1972; PhD, Licensed Professional Engineer—Texas.

Hosseini-Ardehali, Jinoos, Assistant Professor of Decision Sciences (1982). BBA, University of Tehran, 1979; MS, University of Michigan, 1981; MS, University of Arizona, 1980; PhD, 1981.


Huckstadt, Alice A., Associate Professor of Nursing (1975). BS, Winchion State University, 1975; MS, 1978; PhD, Kansas State University, 1981.


Hustad, Ronald G., Associate Professor and Chairperson of Department of Administration of Justice (1973). BS, Colorado State University, 1965; MS, 1967; PhD, University of Connecticut, 1972.

souri at Kansas City, 1948; MA, 1950; PhD, 1952. Professor of Electrical Engineering (1979).

SBE, University of Alexandria, 1973; MS, 1974; PhD, 1977. Licensed Professional Engineer-Kansas.

Schad, Jasper G., Professor of Library Science, University Librarian, and Dean of Libraries and Media Resources Center (1971). BA, Occidental College, 1954; MA, Stanford University, 1957; MLS, University of California at Los Angeles, 1961.

Schlesier, Karl, Professor of Anthropology (1962). PhD, University of Bonn, 1946; MSEE, 1945; PhD, 1948.


Sheffield, James F., Associate Professor of Political Science (1974). BA, Mississippi State University, 1969; MS, Florida State University, 1970; PhD, 1973.

Shirley, William M., Assistant Professor of Chemistry (1982). BA, Vanderbilt University, 1971; PhD, North Carolina State University, 1976.

Shore, Elsie Rochelle, Assistant Professor of Psychology (1981). BA, Brooklyn College, 1967; MA, University of Nebraska—Lincoln, 1970; PhD, 1981.

Singhal, Ram P., Associate Professor of Chemistry (1981). BSc, University of Lucknow, India, 1958; MSc, 1960; DEA, Université de Lille, France, 1964; PhD, 1967.


Skeen, Anita C., Associate Professor of English (1972). BS in Ed, Concord College, 1968; MA, Bowling Green State University, 1970; PhD, 1976.

Smith, Bert L., Professor and Chairperson of Department of Aeronautical Engineering and Coordinator of Composite Materials (1966). BSME, University of Missouri at Rolla, 1953; MSME, 1960; PhD, Kansas State University, 1966.

Smith, Robert M., Assistant Professor of Speech Communication and Associate Dean of Fairmont College of Liberal Arts and Sciences and Associate Dean of University College and Continuing Education (1966). BA, Wichita State University, 1967; MA, Ohio University, 1968; PhD, Temple University, 1976.

Snyder, Jacqueline J., Assistant Professor of American Studies and Associate Vice President for Academic Affairs (1975). BA, College of St. Catherine, 1963; MA, Indiana University, 1966; DA, University of Oregon, 1980.

Snyder, James J., Associate Professor of Psychology (1977). BA, Loras College, 1966; MA, Southern Illinois University, 1974; PhD, 1977.

Snyder, Melvin H., Jr., Professor of Accounting (1947). BSME, Carnegie-Mellon University, 1947; MS, Wichita State University, 1950; PhD, Oklahoma State University, 1967; Licensed Professional Engineer—Kansas.


Sobin, Anthony G., Associate Professor of English (1970). BA, Tulane University, 1966; MFA, University of Iowa, 1969; PhD, University of Utah, 1973.

Sodhi, Rajpal S., Assistant Professor of Mechanical Engineering (1962). BS, Thapar Institute of Engineering and Technology—India, 1971; MS, Union College, 1976; PhD, University of Houston, 1980.


Soles, David E., Assistant Professor and Chairperson of Department of Philosophy (1974, 1982). BA, University of Pittsburgh, 1969; PhD, The Johns Hopkins University, 1976.


Sowards, J. Kelley, Distinguished Professor of Humanities (1968) BA, Wichita State University, 1947; MA, University of Michigan, 1948; PhD, 1952.

Stanga, John E., Jr., Associate Professor of Political Science (1968). BA, Southeastern Louisiana University, 1961; MA, Louisiana State University, 1963; PhD, University of Wisconsin, 1971.


Struble, Nancy B., Assistant Professor of Physical Education (1973). BS, Auburn University, 1956; MED, 1963; EdD, University of Tennessee, 1968.

Sudermann, Frederick, Assistant Professor of Political Science and Director of Research and Coordinated Programs and Governmental Relations (1964). BA, Wichita State University, 1958; MA, 1960.

Sutterlin, Peter G., Professor of Geology (1963). BS, McMaster University, 1953; PhD, Northwestern University, 1958.


Sweney, Arthur B., Professor of Management (1968). BS, University of Illinois, 1947; MSW, 1949; PhD, University of Houston, 1956.

Tahir, Syed M. A., Associate Professor of Physics (1968). BSc (Hons.), Nagpur University, Nagpur, India, 1948; PhD, 1954; PhD, Ohio State University, 1957.

Talaty, Erach R., Professor of Chemistry (1969). BSc (Honors), Nagpur University, Nagpur, India, 1948; PhD, 1954; PhD, Ohio State University, 1957.

Terfllnger, Curtis D., Associate Professor of Management Law and Assistant Professor of Business Law and Legal Assistant Program (1957). BA, University of Kansas, 1953; JD, 1956.

Terwilliger, Curtis D., Associate Professor of Business Law and Legal Assistant Program (1957). BA, University of Kansas, 1953; JD, 1956.

Terwilliger, Gordon B., Professor of Music and Dean of College of Fine Arts (1946). BME, Northwestern University, 1942; MA, Columbia University, 1946; EdD, 1952.


Thomas, James H., Associate Professor and Interim Chairperson of American Studies (1976). BA, Wichita State University, 1971; ME, 1975; PhD, Oklahoma State University, 1981.

Thomas, Phillip D., Professor of History and Dean of Fairmont College of Liberal Arts and Sciences (1973). BA, Bay State University, 1969; MA, University of New Mexico, 1964; PhD, 1965.

Thomson, John William, Associate Professor of Music Theory-Composition and Director of Jazz Ensembles (1976). BM, Wichita State University, 1963; MM, 1965; DMA, University of Missouri at Kansas City, 1968.


Tilford, Michael, Associate Professor of Secondary Education and Associate Dean for Graduate Studies (1967). BS, Langston University, 1957; MA, The Johns Hopkins University, 1958; EdD, Oklahoma State University, 1976.


Tramill, James L., Assistant Professor of Educational Psychology (1980). BA, Austin Peay State University, 1967; MA, 1977; PhD, University of Southern Mississippi, 1981.


Urung, Henry, Jr., Professor of Physics (1961). BA, Wichita State University, 1950; MS, Kansas State University, 1952; PhD, Case Western Reserve University, 1960.

Vartabedian, Robert A., Assistant Professor of Speech Communication and Director of Forensics (1981). BA, California State University, Fresno, 1974; MA, Wichita State University, 1980; PhD, University of Oklahoma, 1981.


Walters, Dorothy J., Associate Professor of English and Director of Center for Women's Studies and Programs (1967). BA, University of Oklahoma, 1948; BA in LS, 1951; PhD, 1967.

Weaver, Arden, Assistant Professor of Speech Communication and Theater (1977). BA, Emporia State University, 1971; MA, 1974; PhD, University of Texas, 1977.


Stevens, Mary Martha, Assistant Professor and Chairperson of Dental Hygiene (1972, 1977). BS, University of Missouri at Kansas City, 1967; MS, Kansas State University, 1975.

Tanner, James L., Assistant Professor of Sociology (1981). BA, Wichita State University, 1977; MA, 1979; PhD, University of Illinois, Urbana, 1982.


Vahdat, Pari, Associate Professor of Psychology (1967). AB, Indiana University, 1963; AM, 1957; PhD, 1964.

Vickery, W. Dean, Assistant Professor of Administration and Assistant Dean for Student Affairs in College of Business Administration (1971). BA, Wichita State University, 1954; MS, 1966.

Vincent, Michael, Assistant Professor of French (1980). BA, St. John's University, 1972; Diplôme de langue et de civilisation française, Université de Paris, 1973; MA, University of Wisconsin, 1974; PhD, 1979.

Webb, Edgar L., Assistant Professor and Chairperson of Department of Industrial Education (1959). BA, Wichita State University, 1959; MS, Pittsburg State University, 1961.


Widener, Russell D., Assistant Professor of Trombone/Low Brass (1981). BM, Baylor University, 1968; MM, Catholic University, 1972.
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