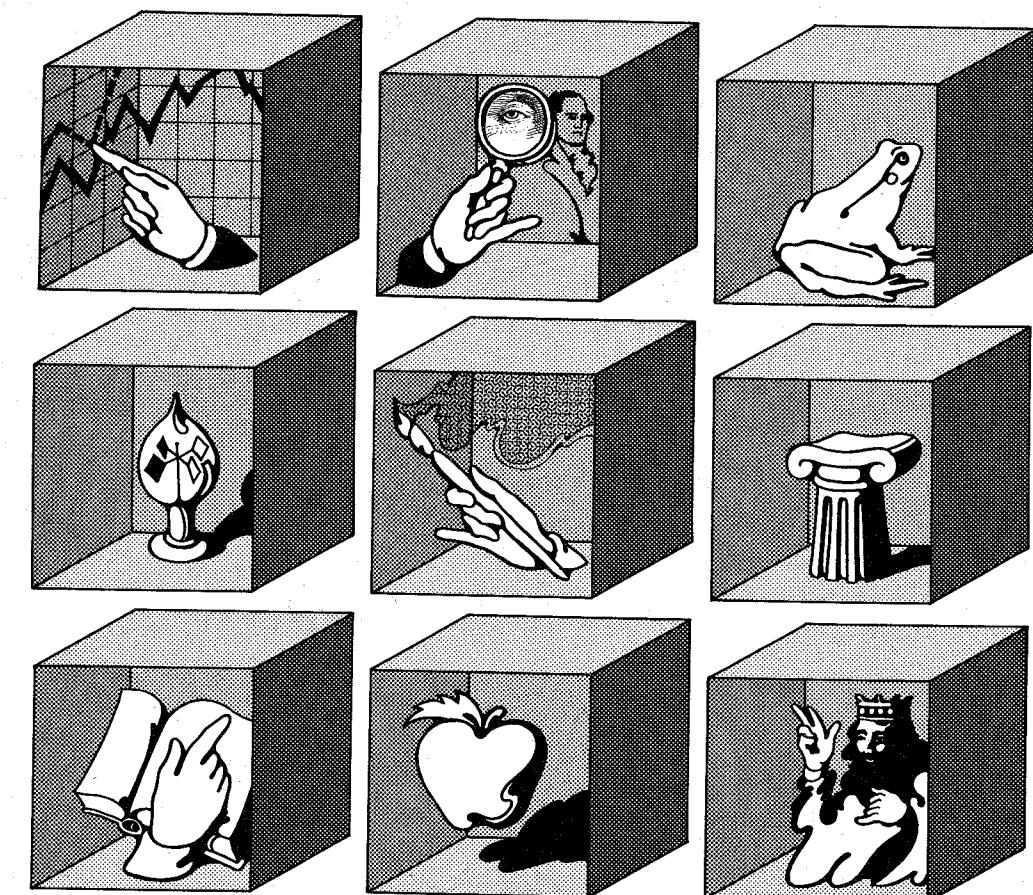




WESTERN KENTUCKY UNIVERSITY

# Western Kentucky University Bulletin

## 1974-75



GRADUATE COLLEGE ISSUE

**Western Kentucky University**

is accredited by:

Southern Association of Colleges and Schools

National Council for Accreditation of Teacher Education

National Association of Schools of Music

National League for Nursing

American Chemical Society

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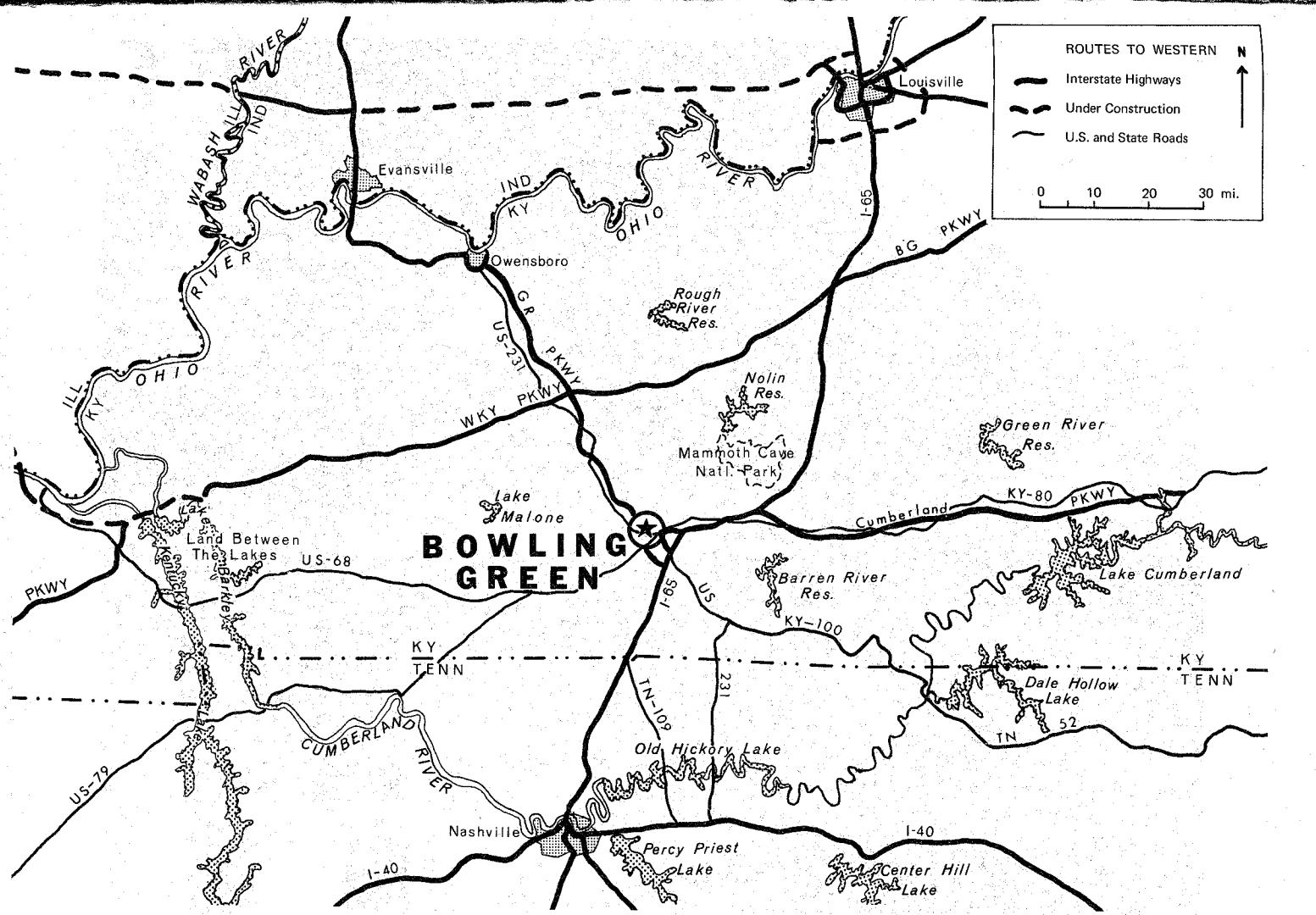
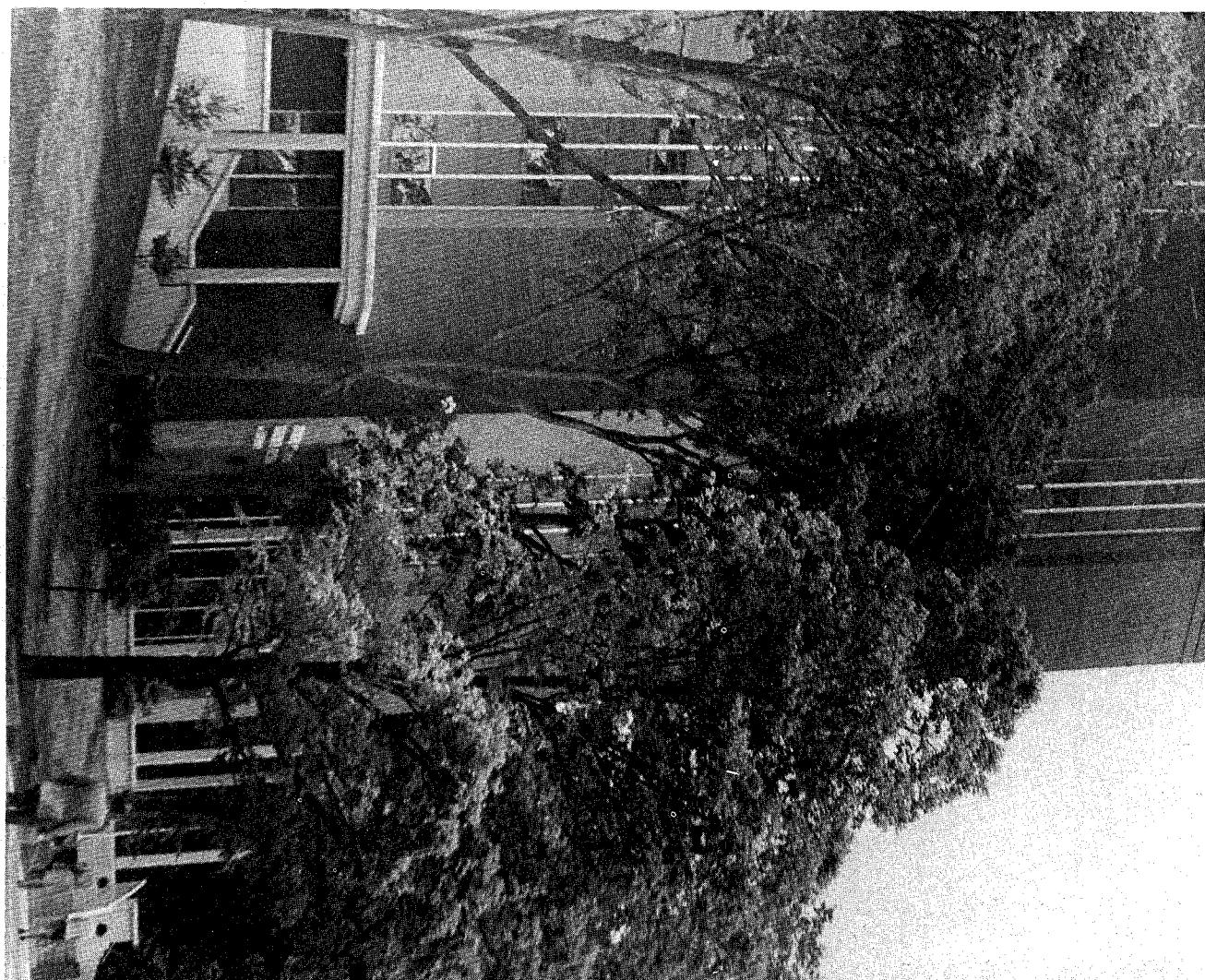
American Association of Colleges for Teacher Education

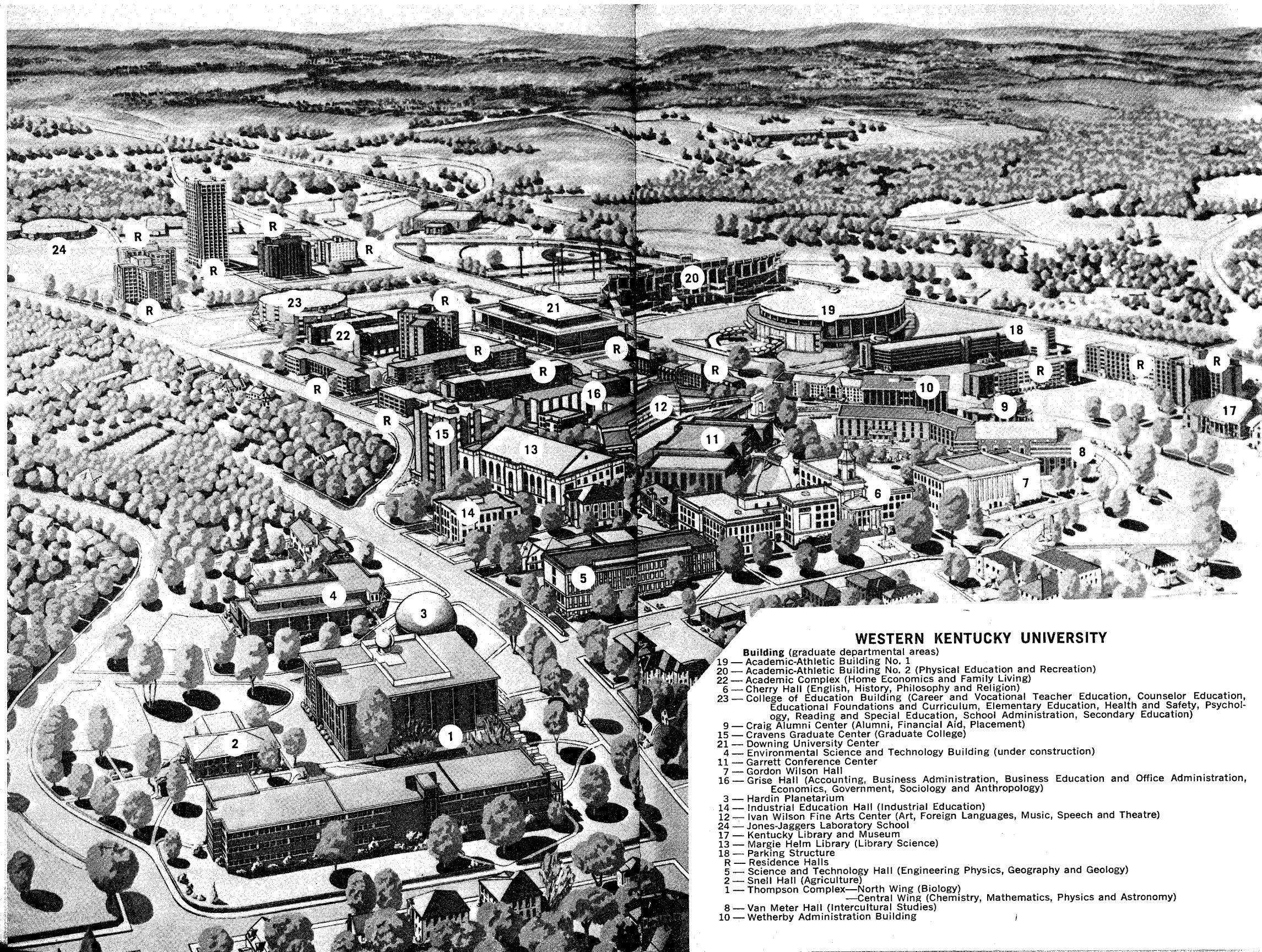
American Association of University Women

American Council on Education



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## WESTERN KENTUCKY UNIVERSITY

### Building (graduate departmental areas)

- 19 — Academic-Athletic Building No. 1
- 20 — Academic-Athletic Building No. 2 (Physical Education and Recreation)
- 22 — Academic Complex (Home Economics and Family Living)
- 6 — Cherry Hall (English, History, Philosophy and Religion)
- 23 — College of Education Building (Career and Vocational Teacher Education, Counselor Education, Educational Foundations and Curriculum, Elementary Education, Health and Safety, Psychology, Reading and Special Education, School Administration, Secondary Education)
- 9 — Craig Alumni Center (Alumni, Financial Aid, Placement)
- 15 — Cravens Graduate Center (Graduate College)
- 21 — Downing University Center
- 4 — Environmental Science and Technology Building (under construction)
- 11 — Garrett Conference Center
- 7 — Gordon Wilson Hall
- 16 — Grise Hall (Accounting, Business Administration, Business Education and Office Administration, Economics, Government, Sociology and Anthropology)
- 3 — Hardin Planetarium
- 14 — Industrial Education Hall (Industrial Education)
- 12 — Ivan Wilson Fine Arts Center (Art, Foreign Languages, Music, Speech and Theatre)
- 24 — Jones-Jaggers Laboratory School
- 17 — Kentucky Library and Museum
- 13 — Margie Helm Library (Library Science)
- 18 — Parking Structure
- R — Residence Halls
- 5 — Science and Technology Hall (Engineering Physics, Geography and Geology)
- 2 — Snell Hall (Agriculture)
- 1 — Thompson Complex—North Wing (Biology)
- Central Wing (Chemistry, Mathematics, Physics and Astronomy)
- 8 — Van Meter Hall (Intercultural Studies)
- 10 — Wetherby Administration Building

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## **HISTORY OF WESTERN KENTUCKY UNIVERSITY**

Western Kentucky University, located in Bowling Green, was established by act of the 1906 Kentucky General Assembly. Prior to 1906, there had existed in Bowling Green the Southern Normal School and Bowling Green Business University, whose president was Dr. Henry Hardin Cherry. In 1907 the Southern Normal School was transferred to the state, and Dr. Cherry was selected as the first president of Western Kentucky State Normal School. In 1922 the Kentucky Legislature changed the school's name to Western Kentucky State Normal School and Teachers College and empowered the College to award degrees to its graduates. In 1930 the school's name was changed to Western Kentucky State Teachers College, and in 1948 to Western Kentucky State College.

In 1964 the Bowling Green College of Commerce was organized into an academic division of Western, and the Graduate Division was changed to the Graduate School. In 1965 Western's Board of Regents approved the formation of three new colleges, the College of Education, the Potter College of Liberal Arts, and the Ogden College of Science and Technology. In 1969 the name of the Graduate School was changed to the Graduate College, and the college of Applied Arts and Health was added, creating a total of six colleges in the structure of Western. In 1972 the Bowling Green College of Commerce was renamed the Bowling Green College of Business and Public Affairs, and the Potter College of Liberal Arts was renamed Potter College of Arts and Humanities. The Kentucky General Assembly in 1966 designated Western as a University and changed the name to Western Kentucky University.

## **FACILITIES AND CULTURAL PROGRAMS**

**Computing Facilities.** The Area of Research and Computer Services in the Office of Institutional Research provides consultative services for students and faculty using University computing facilities. Most of the computer applications in research conducted by faculty and students and instructional applications other than data processing and computer science instructional programs use a batch terminal connected to a large remote computer. The University also maintains a small, stand-alone business computer and a small, scientifically oriented conversational time-sharing system which are used primarily for data processing and computer science instructional programs. The University's general purpose computer is used mainly for administrative applications, but is also

available for academic use. Most data analysis requirements can be met with the wide variety of programs and statistical packages maintained by the Area of Research and Computer Services. Although primary responsibility for research design rests with the individual user, the Area does provide methodological, programming, and related services which aid students and faculty in the use of the computer facilities. Most facilities are operated on an open lab basis during periods roughly corresponding to normal library hours:

**Cultural Opportunities.** The Department of Music sponsors a number of musical presentations including special seasonal concerts. In addition, many faculty and student recitals are given throughout the year.

The Department of Speech and Theatre and the Western Players present a series of programs during the academic year. Summer Theatre programs are also scheduled during the summer sessions. A small fee is charged for admission to major productions; however, there is no admission charge for one act plays produced by the Department.

The Department of Art has a gallery in the Ivan Wilson Fine Arts Building where a display is usually on exhibit.

**Hardin Planetarium.** The Hardin Planetarium is a circular unit adjacent to the Thompson Science Complex. The Planetarium contains a Projection Hemisphere Room and a roof-top observatory which houses a 12½-inch Cassegrain reflector and associated photoelectric equipment.

**Lecture Series.** The Rodes-Helm Lecture Series was endowed in 1961 by Mr. and Mrs. Harold Helm of Montclair, New Jersey. The lecture series is named in honor of the late Judge John B. Rodes, father of Mrs. Helm, and in honor of Miss Margie Helm, sister of Mr. Helm and former Director of Library Services at Western. The endowment fund is to be kept intact and the income from it is to be devoted to bringing distinguished lecturers to the Western campus.

The University Lecture Series brings to the campus three or four nationally known lecturers each school year. Students, faculty, and the general public are admitted to all lectures free of charge.

Numerous other opportunities for cultural development are available at Western through the University and the city of Bowling Green. These include library societies, religious organizations, civic clubs, and special-interest colloquiums.

**Recreational Opportunities.** Encouragement is given to students and faculty to use the Athletic Complex facilities regularly. Facilities for swimming, dancing, tumbling, gymnastics, table tennis, judo, karate,

wrestling, basketball, volleyball, badminton, tennis, weight training, conditioning, handball, squash tennis, and archery are available. Equipment is made available on a non-charge basis to students, faculty, and staff.

**Religious Life.** Western Kentucky University is a state-supported institution and therefore non-denominational, but it is distinctly interested in the religious life of its students. The Western Religious Council serves as the coordinating organization for religious activity on campus.

**Summer Quarter in Mexico.** Western Kentucky University has a contract with the University of the Americas whereby qualified students from Western and other institutions may participate in various summer programs on the campus of the University of the Americas in Puebla, Mexico. The basic programs are the Summer Quarter (nine weeks) and Workshops (four and one-half weeks each) in the Mexican Way of Life and in Mexican Culture. Additional programs may be added if the demand arises. Graduate students may obtain from six to ten semester hours (or more, with special permission) resident credit at Western Kentucky University under the present programs in several areas of study.

Information about specific graduate courses and programs in any of the areas of international education may be obtained from Dr. Paul Hatcher, Coordinator of International Education and Chairman of the committee for admission to the Summer Quarter in Mexico Program.

## UNIVERSITY LIBRARIES AND RESOURCE CENTERS

**Helm-Cravens Library.** The main library complex is located near the center of the campus and is housed in two adjoining buildings, the Margie Helm Library and the Raymond Cravens Graduate Center and Library. Together, these buildings have a book capacity of 800,000 volumes and provide seating for 2,400 students.

The divisional arrangement of resources allows maximum benefits for research and reference service among the 500,000 volumes and 2,500 journal titles within the library. A completely computerized on-line circulation system with video displays facilitates the location of materials by the library patron. The Cravens Library has individual carrels for students engaged in thesis or research projects and rooms are provided for graduate seminars.

The library offers aid to researchers through extensive bibliographies, indexing and abstracting services, and interlibrary loans. The Li-

brary is a depository for federal, state and selected United Nations documents. Significant collections of research material in several fields are available in various forms of micro-reproductions. Under the terms of a cooperative arrangement between the University and the Warren County Bar Association, the Warren County Law Library is housed in the Library. The Library subscribes to various computer-based research services, and retrieval of these primary resources is accomplished through cooperation with the University Computer Center.

**Science Library.** The Science Library, located in the Kelly Thompson Science Complex, provides books, periodicals, and services necessary for instruction and research in the subject areas of agriculture, astronomy, biology, chemistry, engineering technology, mathematics, and physics. The collection includes 18,000 volumes and over 800 journals, abstracts, and indexes.

**Kentucky Library.** The Kentucky Library, located in the east wing of the Kentucky Building, contains research materials in all phases of Kentuckiana. There are 22,000 books, a large number of early newspapers and periodicals, state documents, broadsides, photographs, maps, microfilm, original cartoons, oral tapes, and art prints. Also available are church records, clippings, sheet music, and scrapbooks.

There are a number of outstanding collections in the manuscript division, such as the Lewis-Starling papers, the Joseph R. Underwood papers, the Procter Knott collection, the Calvert-Younglove collection, the Frank Chelf collection, the Helm-Carson family papers, and the Janice Holt Giles manuscripts, among others. Notable also are the Courtney Ellis river collection, the H. O. Potter Daviess County collection, and the Lilly Bland Carter poetry collection.

The Kentucky Library also houses the Gordon Wilson Linguistic Study of the Mammoth Cave area, the Allan Trout Collection, and the South Union Shaker materials.

**Educational Resources Center.** This center, located on the third and fourth floors of the Educational Complex, provides research materials and instructional resources which support the curricula of the several departments in the College of Education and the Teacher Training Program.

**Kentucky Museum.** The Kentucky Museum, located on two floors of the Kentucky Building houses items of natural history, Civil War relics, furniture, art, musical instruments, toys, jewelry, and textiles as well as

pioneer relics, early types of lighting, tools and weapons, and models of Kentucky forts and historic homes.

The Museum holdings have been donated by individuals interested in preserving Kentucky history and making it available for educational purposes. Trees and shrubs native to Kentucky are found on the Kentucky Building grounds.

**University Archives.** The University Archives, established in April, 1972, is housed in the Helm Library and administered by a professional librarian. The purpose of the Archives is to collect, preserve, and organize for appropriate use the records of the University which are required for administrative functions and are essential for the historical study of the institution, including its genealogical antecedents. Such records include correspondence, reports, minutes, tapes, photographs, scrapbooks, publications, and other items, such as clippings and articles about the University and its personnel. Reference service is available.

## SERVICES

**Academic Services.** The purpose of Academic Services is to provide support to the research and instructional programs of the University. This support is accomplished through the activities and programs of Library Services, Media Services, Institutional Research, Grant and Contract Services, and the University Archives. It is the purpose of these activities and programs to increase utilization of the educational resources and services of the University. For additional information, consult appropriate persons listed under Administrative Staff (pp. 194-5).

**Housing Facilities.** Residence hall application with advance payment should be sent to Director of Housing, Western Kentucky University, Bowling Green, Kentucky 42101.

Residence halls are assigned according to student preference and availability of space on the date the application is received by the Housing Office. A double room can be assigned as a single for one and one-fourth times the double occupancy fee. Sheets and pillow cases are provided by the University. Each room is equipped with a telephone. Compact refrigerators are available on a lease basis.

**Food Service.** The University maintains a variety of food services on the campus including: two cafeterias on the first floor of the Paul L. Garrett Conference Center and one in the Dero Downing University Center. Other facilities include a Snack Bar in the Garrett Conference Center, and in the Downing University Center contains a Grill. Vending and self-service facilities are available in all dormitories.

## FEES

### Fees for Graduate Work

Full-time Students		Part-time Students (per credit hour)		
Registration Date	Resident	Non-Resident	Resident	Non-Resident
1973-74	235.00	500.00	27.00	56.00
1974-75	235.00	500.00	27.00	56.00

Note: Graduate students are considered to be full-time students if they are taking 9 or more hours during the regular semester or 5 or more hours during the summer session.

Fees are subject to change without advance notice.

## FINANCIAL ASSISTANCE

The following financial aid programs are available:

### Loans:

**National Direct Student Loan.** This loan is designed to assist the student whose family income and total assets place limitations upon other resources (bank loan, family savings, etc.) from which he can make educational funds available. This is a long-term loan, interest free while in school with three percent interest charged during the repayment period. In addition to the interest-rate advantage during the repayment period, a borrower may discount 15 percent of the loan each year, up to 100 percent of the total loan, by teaching in an elementary or secondary school in an economically deprived area.

**Federally Insured Bank Loan.** This is a long-term loan which may be secured through the student's local bank. Student applicants who do not qualify for interest subsidy begin paying interest upon receipt of the loan. The interest rate on student loans is seven to ten percent. Applications (available in the Student Financial Aid Office) are completed by the student, certified by the Student Financial Aid Office, and presented to the bank by the student.

**College Heights Foundation Loan.** This is a program of borrowing with a low-interest rate usually repayable on a short-term basis. Applications are available in the College Heights Foundation Office, W. J. Craig Alumni Center.

### Workships:

The University participates in both a work-study and a regular program of employment whereby a student may work 15 hours per week during the regular term of study, providing such work is needed to balance his college expense budget. Summer employment is offered through the work-study program whereby a student may work 40 hours per week. Eligibility to participate in a work-study program is based on family income. Assistance in obtaining off-campus employment is also available.

### How to Apply:

Obtain an Application for Financial Assistance from:  
Office of Student Financial Aid  
Western Kentucky University  
Bowling Green, Kentucky 42101

### When to Apply:

The following deadlines must be observed for maximum consideration of Financial Aid Applications:  
March 15—Fall Semester only  
March 15—Fall and Spring Semesters Combined  
December 1—Spring Semester only  
March 15—Summer Session only

Applications received after these dates can be considered only if available funds are not exhausted. Early applications are encouraged.

### Veterans Administration Benefits:

**G.I. Bill.** Students who served actively with the Armed Forces more than 180 days after January 31, 1955, or less than 181 days but were discharged for service-connected disability with an honorable discharge, are eligible for educational assistance under the Veterans Readjustment Benefits Act of 1966. Applications are made directly to the Veterans Administration, 600 Federal Place, Louisville, Kentucky. Application forms are available in the Student Financial Aid Office. War Orphans and Widows of Deceased Veterans and Children and Wives of Disabled Veterans should contact the Veterans Administration nearest their hometown for determination of eligibility for educational assistance.

## GRADUATE ASSISTANTSHIPS

Graduate assistantships are available in various departments to well-qualified students. Stipends vary depending upon the student's qualifications and duties assigned. In addition to the remuneration in the form of the stipend, the out-of-state portion of the graduate assistant's fees is awarded in the form of a scholarship.

Assistants are permitted to carry a maximum of 12 hours per semester, and some departments require graduate assistants to attend seminars in teaching. Graduate assistants have a dual role as graduate student and member of the University instructional staff. As a member of the instructional staff, they have professional responsibilities to the University. They are expected to familiarize themselves with University policies and responsibilities and to faithfully fulfill their obligation in this respect. Stipends are paid at the middle of each working month.

To be eligible for a graduate assistantship, the student must meet all criteria for admission to the Graduate College except for the Graduate Record Examination which may be taken during the period of first enrollment. The student must have a minimum 2.5 (4.0) undergraduate grade point average to be considered for an assistantship. Applications, including the formal application and three letters of recom-

mendation (to be requested by the student, not the Graduate College), must be sent to the Dean of the Graduate College. Appointments are based upon the recommendation and approval of the head of the department and the dean of the college in which the assistantship is granted. To receive maximum consideration, the application for an assistantship must be in the Graduate Office by February 1.

## **ACADEMIC YEAR, REGISTRATION PROCEDURES, AND SCHEDULE CHANGES**

**Academic Year.** The University provides a year-round instructional program consisting of the fall and spring semesters, May term, and summer term. A wide offering of graduate courses is available to students during the regular semesters and summer term; a limited offering of graduate courses is available during the May term.

**Registration Procedures.** The process of registering for classes at Western is completed with the aid of the Computer Center. It is therefore necessary that a student wishing to register for a class on campus follow the designated procedures for getting a registration packet. For regular semesters and summer terms, registration packets will be prepared without request for those students who were enrolled on campus either full-time or part-time during the preceding summer term, preceding May term, or during one or more of the three most recent semesters. Packets will not be prepared automatically for persons who have taken only Western extension courses prior to the spring semester of 1972. Students who do not qualify for a packet under the above conditions or students who complete a degree at the end of a term and plan to continue taking courses should obtain a packet request form from the Office of the Dean of the Graduate College. This form must be completed by the student and returned to the Graduate College.

Registration packets for the May term are provided only on request by the student. Students enrolled on campus may obtain the May term registration packet at the Office of the Registrar. Students not enrolled on campus may obtain the registration packet by contacting the Office of the Dean of the Graduate College. May term registration may be completed by mail.

**Registration for extended campus classes does not require a packet.** The instructor of the extended campus class will provide the necessary materials and registration will be completed in the class.

**Schedule Changes.** The University reserves the privilege at all times of

cancelling any course for which the enrollment is not sufficient to justify its continuation and to make any other adjustments in the schedule that seem necessary.

## **FOREIGN STUDENTS**

Foreign students having adequate preparation for graduate study are invited to apply for admission to the Graduate College. In addition to general requirements and major-department requirements, all students from non-English-speaking countries must submit evidence of adequate training in the use of English. An acceptable score on the Test of English as a Foreign Language (TOEFL) is required as a condition for admission.

(For information regarding non-academic matters, write Mr. Robert Wurster, Advisor to Foreign Students.)

## **GRADUATE COLLEGE**

**History.** Western began offering the Master of Arts Degree in 1931. This program was discontinued from 1936 to 1941 but was resumed in 1941 and has enjoyed continuous growth since. The granting of University status in 1966 gave the Graduate School increased opportunity both to strengthen the present programs and to offer an even wider choice of program areas as faculty and resources became available. The name was changed in 1969 from Graduate School to Graduate College to be consistent with the other colleges in the University.

**Organization.** The Dean of the Graduate College is charged with the administration of policies regulating and relating to graduate studies. It is his responsibility to certify that candidates have fulfilled requirements for advanced degrees.

The Graduate Council recommends and reviews policies pertinent to the operation of the Graduate College. In addition, it reviews and makes recommendations regarding new graduate programs and alteration of existing programs.

The Graduate Faculty consists of faculty members recommended by department heads, college deans, and the Graduate Council, and approved by the Vice President for Academic Affairs.

## **GRADUATE DEGREES AVAILABLE AT WESTERN**

Western Kentucky University has been authorized to offer the following degrees: Master of Arts, Master of Arts in Education, Master of

Arts in College Teaching, Master of Science, Master of Business Administration, Master of Music, Master of Public Service, and Master of Science in Engineering Physics.

**Master of Arts** degrees are offered in the following fields: child development and family living, economics, English, folk studies, government, history, humanities, psychology, sociology, Spanish, and speech.

**Master of Arts in Education** degrees permit majors in the following fields: agriculture, biology, business education and office administration, chemistry, counselor education, economics, elementary education, English, English and allied language arts area, French, geography, German, government, history, home economics, industrial education, library science, mathematics, math-science area, music, physical education, psychology, science area, secondary education, social science area, Spanish, special education, speech, and student personnel services.

This degree permits minors in the following areas: agriculture, art, biology, business education and office administration, chemistry, economics, English, folk studies, French, geography, German government, health, health and safety, history, home economics, industrial education, library science, mathematics, music, physical education, physics, psychology, secondary education, sociology, Spanish, speech, and theatre.

**Master of Arts in College Teaching** degrees are offered in the following fields: biology, chemistry, geography, history, mathematics, and Spanish.

**Master of Science** degrees are offered in the following fields: agriculture, biology, chemistry, geography, library science, mathematics, physical education, and physics.

**Master of Business Administration** (see Department of Business Administration).

**Master of Music** (see Department of Music).

**Master of Public Service** degrees are offered with options in: administration, agriculture, child development and family living, city and regional planning, counseling, recreation and park administration, and regional development.

**Master of Science in Engineering Physics** (see Department of Physics and Astronomy)

**Specialist Degrees** The Specialist Degree in Education is available in counselor education, elementary education, school administration, and secondary education. The Specialist Degree in College Teaching is offered in English and history.

**Doctoral Degrees:** Western participates in joint-doctoral programs in Education with the University of Kentucky and in a cooperative doctoral program in aquatic biology with the University of Louisville.

#### **OUTLINE OF REQUIREMENTS FOR GRADUATE DEGREES**

Some graduate degrees offer both Plan A (with thesis) and Plan B (without thesis). This point is clarified in the departmental description of degrees.

##### **Requirements for the Master of Arts, Master of Arts in College Teaching, and Master of Science Degrees:**

**Admission:** In addition to the meeting the requirement of a good standing admission to the Graduate College, the student in these degree programs must possess at least a minor or its equivalent in the department in which he intends to study with a point standing of approximately 2.7 (some departments require a 3.0).

**Coursework:** A total of 30 hours is required.

**Research Tool:** The student may meet the research tool requirement by either: (1) demonstrating a reading ability sufficient to do scholarly research in a foreign language appropriate to his major area, or (2) demonstrating that he has mastered appropriate research techniques that have been recommended by his departmental advisor(s) and approved by the Dean of the Graduate College. Some departments, however, require a foreign language. No course credit earned in meeting research tool requirements will apply toward the credit hours required for the degree.

**Thesis:** Some departments offer both Plan A (with thesis) and Plan B (without thesis). If Plan A is chosen, the thesis topic must be approved by the student's advisor and the head of the department. The thesis carries six hours of credit and must conform to basic research indicating evidence of a judicious use of source materials.

**Teaching:** Since the emphasis in the Master of Arts in College Teaching is on preparation to teach in junior colleges or at the lower levels of senior colleges, the students must do some supervised college teaching under the direction of a member of the department involved.

**Final Examination:** A final examination over courses, thesis

(if chosen), and related materials must be satisfactorily passed.

#### Requirements for the Master of Arts in Education Degree:

**Admission:** All candidates for the Master of Arts in Education must meet state requirements for certification in the appropriate area. The requirements for the degree and for certification must be satisfied by either Plan A (with a thesis) or by Plan B (without a thesis).

**Coursework:** All candidates for the degree under Plan A must complete a minimum of thirty semester hours of graduate credit 24 of which must be in course work. All candidates for the degree under Plan B must complete a minimum of 30 hours of course work. In both Plans A and B at least nine hours (exclusive of credit for research) must be in professional education. The candidate must have no fewer than 29 semester hours of credit in professional education at the undergraduate and/or graduate level. The remainder of the coursework required for the degree will be determined by the University in terms of the needs of the student. All students pursuing this degree must complete Education 500, Research Methods.

All candidates must have a major and a minor. The student may choose to take a minimum of nine hours (under the Secondary Education program) or a maximum of 18 hours in Education and a minimum of 12 or a maximum of 21 hours in a subject-matter area.

**Research Tool:** Students under this degree program are not required to demonstrate proficiency in a research tool.

**Thesis:** Students under Plan A must register for research credit to a maximum of six semester hours in his major field. Research culminating in the writing of a satisfactory thesis upon a topic approved by the student's Graduate Advisory Committee is required. Students under Plan B may substitute six hours of coursework for the thesis, thus making a total of 30 semester hours of coursework.

**Final Examination:** A final examination over courses, thesis (if chosen), and related materials must be satisfactorily passed. In some areas a written examination is required.

#### Requirements for the Master of Public Service Degree:

**Admission:** The student must submit evidence of sufficient background in the area of the option being pursued.

**Coursework:** A minimum of 30 hours is required, of which nine or 12 hours must be selected from a core area common to all options.

**Research Tool:** No research tool is required.

**Thesis:** The thesis is optional.

**Final Examination:** A final examination over the option and the core must be satisfactorily completed.

**Other Degrees:** The Master of Business Administration, Master of Music, and Master of Science in Engineering Physics are summarized in their respective departments.

#### Requirements for Specialist Degree:

- A. A minimum of 30 semester hours of graduate credit in a planned program beyond the master's degree, or its equivalent, must be completed.
- B. A minimum of 15 semester hours must be full-time residence credit.
- C. A minimum of nine semester hours of residence credit must be completed before admission to candidacy and a minimum of 15 semester hours of credit must be completed after admission to candidacy.
- D. Candidates may transfer a maximum of six semester hours, approved by the student's advisory committee, from an institution with an accredited advanced graduate program.
- E. At least 21 semester hours must be in courses numbered 500 or above.
- F. Minimum full-time residence requirements may be met through two semesters, or a semester and a summer, or two summers.
- G. The specialist project is considered to be an integral part of the specialist program. It shall carry three to six hours of credit with the exact number of hours to be determined by the student and his graduate committee. The project shall be planned with reference to the student's field of specialization and professional goals. It may take the

form of a field project, a creative study, or a more formal research study. Regardless of the form of the project, the study shall culminate in a written, scholarly report. This report must be approved by the student's graduate committee and by the Graduate College. Copies of the written report will be bound and retained by the Graduate College and the University Library.

H. The time limit for the completion of all requirements for the specialist degree is four years from the date of first registration in the specialist degree program.

## POLICIES AND PROCEDURES

### Admissions\*

**Non-Degree Students** Any person who holds a bachelor's or master's degree from a college or university of recognized standing is eligible for admission to graduate study on a non-degree basis at Western.

**Master's Degree Students** Applicants for graduate study with the objective of earning a master's degree must meet the following requirements:

- A. The applicant must hold a bachelor's degree from a college or university of recognized standing.
- B. He must have adequate preparation in the field of specialization in which he proposes to study (adequacy of preparation will be determined by the departmental admissions committee).
- C. He must (1) have an overall grade point average of not less than 2.5, or (2) have a grade point average of 2.5 on his last sixty semester hours of undergraduate study, or (3) score not less than 700 on the aptitude test of the Graduate Record Examination (verbal and quantitative combined). Requirements for admission to certain programs, however, may be higher than these minimum standards.

**Specialist Degree Students** An applicant for a Specialist Degree program must meet the following requirements:

- A. He must hold a master's degree from an accredited college or university.
- B. He must have adequate preparation in the proposed field of specialization (to be determined by the appropriate department).
- C. He must score not less than 800 on the aptitude test (verbal and quantitative combined) of the Graduate Record Examination.

\*Application Form (Form A) \_\_\_\_\_ following Index

- D. He must hold a grade point average of not less than 3.25 on his master's program.
- E. He must present to the Graduate College three letters of recommendation from graduate faculty and/or professional associates.

### Doctoral Students

#### Cooperative-Doctoral Program with the University of Louisville

Admission to the cooperative program in Aquatic Biology requires concomitant admission to the Graduate School of the University of Louisville and the Graduate College of Western Kentucky University. Eligibility for admission to the cooperative program is dependent upon:

- A. the transmission of one official transcript to each Graduate College Office,
- B. the transmission of copies of two letters of recommendation to each Graduate College Office,
- C. achievement of a combined score on the Aptitude Section of the Graduate Record Examination of at least 1,000 (to be sent to the University of Louisville),
- D. achievement of a score on the Miller Analogies Test at or above 40 (to be sent to the University of Louisville),
- E. (Foreign Students only) Satisfactory completion of the (TOEFL) Test of English as a Foreign Language (to be sent to the University of Louisville),
- F. approval by the graduate faculty members in Biology at both institutions,
- G. completion of the appropriate application forms at each institution and the payment of a non-refundable fee of five (\$5.00) dollars for application to the University of Louisville.

**Joint-Doctoral Program with the University of Kentucky** To be eligible for admission to this program a student must be admitted to the Graduate College at Western and to the Graduate School and doctoral program at the University of Kentucky. These admission forms are available from the Graduate College Office at Western, and upon completion are returned to the Dean of the Graduate College, Western Kentucky University. If the student is considered clearly qualified, his credentials will be forwarded to the University of Kentucky.

Specific application requirements include the following:

- A. Test scores:
  - (1) Graduate Record Examination (1,000 combined on verbal and quantitative sections of the Aptitude test)

- (2) Miller Analogies Test (required if G.R.E. verbal score is below 600)
- B. Personal references
- C. Transcripts of all work
- D. Statement of education goals and brief autobiography.

**Admission from Non-Accredited Institutions** Applicants from non-accredited institutions may be admitted conditionally provided they have an undergraduate grade point average of 2.5 or better and present a score of 800 or above on the combined aptitude section of the Graduate Record Examination. Upon the completion of twelve hours of graduate credit with a grade point average of above 3.0, the conditional status may be removed.

**Admissions Procedures** Students desiring admission to the Graduate College must obtain Form A (Application for Admission)\* from the Graduate College. This form must be completed and returned to the Dean of the Graduate College. Applicants who are graduates of Western Kentucky University are not required to request transcripts of their work at Western. Graduates of other institutions must forward to the Graduate College two official transcripts from the degree-granting institution showing the completed degree. Those applicants who have not completed their undergraduate degrees should forward only one official transcript at the time of application and two official transcripts after the degree is completed.

Transient students who are working toward a degree at another institution must complete Form A, but they are not required to have transcripts forwarded. Transient students must obtain Form H from the Graduate College and have it completed by an appropriate official at the institution where the student is pursuing a degree. This form must be completed and returned to the Dean of the Graduate College at Western prior to enrollment.

Special students, who are not seeking an advanced degree at Western, must complete Form A and, if not a Western graduate, have one official transcript of the undergraduate degree work forwarded to the Graduate College.

**Application for Degree** A degree application form is necessary to initiate a degree check for graduation. The candidate is expected to complete and return a degree application to the Graduate College by February 1 for a degree to be awarded at the May commencement, and by May 1 for a degree to be awarded at the summer commencement.

\*Application Form (Form A) following Index

#### **Candidate's Graduate Committee**

**Master of Arts in Education Degree** Upon admission to the Graduate College the candidate is assigned a graduate advisor from his major area of study and an advisor from his minor area of study. These advisors assist the student in the development of his graduate program of study. In cases where the candidate writes a thesis or takes an oral comprehensive examination in lieu of the written examination, the two advisors, along with a third member chosen from the major area of study by the major advisor, become the candidate's graduate committee.

**Master of Arts Degree** At the time of admission, the major department will select three members of that department to serve as the candidate's graduate committee.

**Master of Science Degree** Same as Master of Arts Degree.

**Master of Arts in College Teaching Degree** Same as Master of Arts Degree.

**Master of Public Service Degree** At the time of admission, the department offering the option will select the major advisor who will assist the candidate in the preparation of the graduate degree program. Prior to admission to candidacy, the advisor will select two additional members, one from the option area and one from the core area to serve as the graduate committee.

**Master of Business Administration Degree** Same as Master of Arts Degree.

**Master of Music Degree** Same as Master of Arts Degree.

**Master of Science in Engineering Physics** Same as Master of Arts Degree.

**Doctor of Philosophy (Consult Biology Department)**

#### **Course Load**

A. The number of semester hours of credit which may be earned during a given term may not exceed the number of weeks of instruction except in the summer term in which nine semester hours may be earned in eight weeks. Exceptions must be approved by the Graduate Dean. A full-time graduate student may earn a maximum of 15 hours. (12 hours for a graduate assistant) during a regular semester. Maximum hour limitation include courses taken for graduate, undergraduate, or audit credit.

B. A minimum of nine hours during a regular semester and six hours during a summer session are required to be a full-time student.

**Degree Candidacy** After having been admitted to graduate study with a degree objective, the student must apply for and be admitted to degree candidacy. This may be done by completing Form D, Admission to Candidacy, which may be obtained from the graduate advisor or from the Graduate College. Degree candidacy is subject to the following requirements.

- A. The student must have a degree plan on file in the Graduate College.
- B. At the time of degree candidacy, any provisional or conditional status must have been removed.
- C. The student must have completed at least 12 and not more than 20 semester hours on his program of study at Western.
- D. The student's advisors and/or graduate committee must sign the candidacy form.
- E. The Graduate Council must approve all applications for candidacy.

**Degree Plans** All degree candidates are required to file an approved degree plan, Form C, prior to or upon completion of nine hours of graduate credit or prior to the completion of the first semester of enrollment if enrolled in more than nine hours. The Graduate College reviews all degree plans to determine that only approved graduate courses are included.

- A. All 400-level courses that have been approved for graduate credit are identified with a "G". No 300-level courses will be accepted unless accompanied by a letter of justification signed by the department head, dean of the academic college, and approved by the Dean of the Graduate College prior to enrollment in the course.
- B. The planned program must include at least 15 semester hours of courses at the 500- and/or 600-level. (The Specialist degree requires 21 semester hours of courses at the 500 and/or 600 level.)
- C. The master's and specialist degree programs may not include more than six hours of transfer credit (see Transfer Credit p. 21).

**Examinations, Written and Oral** All graduate degree programs require either a written or an oral examination to be completed during the candidate's last period of enrollment prior to graduation.

- A. **Written Examinations.** Some programs within the Master of Arts in Education degree require a written comprehensive examination.

Candidates for this degree should contact the College of Education for information regarding comprehensive examinations.

- B. **Oral Examinations.** Most other degree programs including the Specialist degree require an oral examination.
  - (1) The scheduling of the oral examination is the responsibility of the candidate's major advisor.
  - (2) The examining committee will consist of the graduate committee appointed from the major department at the time of admission. In the case of the Master of Arts in Education the examining committee will consist of the major advisor, the minor advisor, and one additional member selected from the major department by the major advisor.
  - (3) The major advisor will arrange a time and place acceptable to both the student and the committee for the examination. He will notify the Graduate College of the results of the examination through the use of Form E which provides for the signature of each committee member.

#### **Grades**

- A. Candidates for graduate degrees are required to have an average grade of "B" in all courses applicable to the degree, and a minimum grade of "B" on the thesis. Grades lower than "C" do not contribute any quality points and may not be used in meeting degree requirements.
- B. Candidates for the Specialist degree are required to obtain at least a "B" grade in all courses used to meet degree requirements.
- C. Courses to be transferred from another institution must carry a grade of "B" or better.

#### **Graduate Courses**

- A. Courses numbered 500 and above are open to graduate students only.
- B. Courses numbered at the 400-level are open to seniors and to graduate students if the course (1) has been approved by the Graduate Council and (2) is taught by a member of the Graduate Faculty. In classes open to both graduates and undergraduates, graduate students are expected to complete additional course requirements to be prescribed by the instructor.
- C. Courses numbered at the 300-level are considered to be undergraduate courses and will not be accepted for graduate credit unless the request to enroll in a 300-level course is accompanied by a letter of

justification from the department head and the college dean and approved in advance of enrollment by the Graduate Dean.

- D. At least 15 hours of the master's degree program must be earned in courses open only to graduate students.
- E. Graduate Credit is not given for correspondence study.
- F. The Specialist's degree requires a minimum of 21 hours of graduate course work open only to graduate students.

**Graduate Record Examination** All students pursuing master's degrees are required to complete 20 hours after completion of the Graduate Record Examination. Students pursuing the Specialist degree must complete the Graduate Record Examination prior to admission.

**Guidelines for obtaining a second Master's Degree:**

A student pursuing a second Master's Degree from Western Kentucky University will:

- A. Be required to satisfy admissions requirements of the new degree if it differs from the previous one.
- B. Be required to satisfy all requirements for the new program except as indicated below.
- C. Be required to earn a minimum of 12 hours of new course work toward the degree.
- D. Write a thesis or satisfy any option used in lieu of a thesis (six additional hours).
- E. If the previous masters was earned at another university, transfer regulations must be followed.

**Procedures for changing from one graduate degree program to another:**

A student wishing to change from one degree program to another will:

- A. Be required to satisfy the admissions requirements of the new program if they differ from those of the previous program.
- B. Be required to satisfy all requirements for the new program except as indicated below.
- C. Be allowed to use all applicable courses if the change is made before the halfway point, or if the change is made after the halfway point but before the program is completed, the student's advisor will work out with him the coursework from the previous program which will be accepted.

**Seniors Earning Graduate Credit** Seniors at Western may enroll in graduate courses during the last semester of enrollment provided: (1) they have a minimum of 2.5 undergraduate grade point average at the time of application, (2) they complete a formal application for graduate study, (3) they do not need the courses designated as graduate credit to apply to the undergraduate degree, and (4) the combined undergraduate and graduate course load does not exceed 15 hours.

**Thesis** The thesis in final form and approved by the student's Graduate Committee must be submitted to and approved by the Dean of the Graduate College at least two weeks prior to the date of graduation. Guidelines for the Preparation of Theses are available in the Graduate College.

**Transfer Credit**

Six hours of transfer work may be accepted toward meeting degree requirements provided:

- A. the course work was taken for graduate credit at an accredited institution
- B. the course grade is A or B
- C. the course work does not exceed the five-year time limit for the master's degree or the four-year time limit for the specialist's degree
- D. the hours are appropriate to the degree program being pursued. The student's graduate advisory committee determines appropriateness of transfer work for metting degree requirements, and the request for transfer is approved by the Graduate Dean.

## AREAS OF STUDY

### ACCOUNTING

**Graduate Faculty:**

Professor: Lange (Head of Department)

Associate Professor: Cloud

Accounting is an integral part of the Master of Business Admin-

## *Accounting*

istration curriculum. In addition, graduate courses in accounting are significant supporting areas in other graduate programs.

### **Graduate Courses in Accounting:**

#### **518. Investigations in Accounting. Three hours.**

Designed primarily for secondary education teachers of bookkeeping. Provides an updating of terminology and practice in accounting.

#### **560. Controllership. Three hours.**

An examination of the control function in corporate enterprise. Accounting and financial control concepts and techniques as applied to current and long-term assets are emphasized. Control measures for production and marketing decisions are examined in terms of their financial consequences. Risk and uncertainty in the decision-making process are considered briefly.

**The following 400-level courses may be taken for graduate credit:**

#### **420G. Managerial Cost Analysis. Three hours.**

Prerequisite: Accounting 310.

Provides more advanced theories and developments in the area of cost accounting, especially in the area of standard costs, and broadens knowledge in this specialized field.

#### **421G. Advanced Tax Accounting. Three hours.**

Prerequisite: Accounting 311.

Forwards the student's understanding and knowledge of the federal tax structure as it applies to the corporation and other specialized areas of taxation. Emphasis is placed upon the use of the Tax Services in researching tax problems.

#### **422G. Advanced Accounting. Three hours.**

Prerequisite: Accounting 219.

Provides the students of accounting with the practice of applying knowledge of accounting theory and techniques acquired in earlier courses to a variety of specialized problems in accounting.

#### **423G. Advanced Accounting Theory. Three hours.**

Prerequisite: Accounting 218.

Broadens students' concept and understanding of accounting into a meaningful discipline. Emphasis is on current theory and research in accounting.

#### **431G. Auditing. Three hours.**

Prerequisite: Accounting 422 or 423.

Provides the student with the basic knowledge of auditing standards and practices and their application in the specialized area of auditing.

## *Agriculture*

### **AGRICULTURE**

#### **Graduate Faculty:**

Professors: Brown (Head of Department), Gray, Hourigan, Johnson, Stroube

Associate Professors: McGuire, Normand, Zimmer

Assistant Professors: Jones, Worthington

#### **Degrees Offered:**

Master of Science in Agriculture; Master of Arts in Education (Agriculture major or minor); Master of Public Service (Agriculture option); Specialist Degree in Education (Vocational Agriculture)

#### **Master of Science in Agriculture**

Applicants for this degree should have an undergraduate major in agriculture or related science. There is no language requirement for this degree, but the student must satisfy the research tool requirement by demonstrating competency in research techniques as recommended by his Graduate Committee and approved by the Dean of the Graduate College. There are two plans by which the requirements for this degree may be satisfied:

Plan A. A minimum of 30 hours of approved graduate course work, including six hours of thesis credit, must be earned. The thesis consists of the report of the findings of an approved research project conducted under the direction of the student's Graduate Advisory Committee. Students who expect to continue graduate work toward an advanced degree should pursue this program.

Plan B. This program is designed for those students who desire additional training in agriculture or agriculturally-related professions. Admission and other requirements are the same as those for Plan A, except that no thesis is required. Students must complete six hours of course work in lieu of the thesis.

#### **Master of Arts in Education (Agriculture major or minor)**

This program provides additional graduate coursework in agriculture while being designed to meet certification requirements. The student shall take a minimum of 18 hours in the major area. The student minoring in agriculture shall take a minimum of 12 hours in agriculture and related areas as designated by the Graduate Advisory Com-

## Agriculture

mittee. A minimum of nine hours of approved coursework will be taken in professional education.

### Master of Public Service (Agriculture option)

This program is designed to meet the needs of students in, or planning to enter, agricultural or agriculturally oriented professions that are involved in public service. For example, the program may serve those individuals engaged in agricultural extension, conservation, administration of governmental agricultural programs, and agricultural representatives of banks and other financing organizations.

The student should have an undergraduate major in agriculture or a closely related area or be engaged in an agriculturally related profession of the public service nature.

*All candidates for the Master of Public Service degree (regardless of the option chosen) are required to complete a core area of nine to twelve hours including Government 540—Public Administration (which is required of all).*

The remaining hours of the core may be selected from the following courses:

- Economics 550—Government Financial Policy and Administration
- Geography 580—Problems in Urban Geography
- Government 511—Seminar in State and Local Government
- Sociology 565—Studies in the Community
- Psychology 551—Social Psychology of Organizations

In addition to the core, 15 of the remaining hours in the thirty-hour program should be in agriculture or in related departments approved by the student's graduate committee. At least eight hours of the 15 in agriculture should be in courses open only to graduate students.

### Graduate Courses in Agriculture:

#### 514. Advanced Plant Breeding. Three hours.

Prerequisites: Agriculture 414 and 491 or consent of instructor. Problems and methods of improvement of cereal, forage, fiber, vegetables and other crop species, pathological and physiological relationships. Lecture and recitation, three hours.

#### 529. Quantitative Genetics. Three hours.

Prerequisites: Agriculture 491, Biology 327 or consent of instructor. Genetic and biometric principles underlying genetic characters which exhibit continuous variation. Lecture, three hours.

## Agriculture

#### 533. Physiology of Lactation. Three hours.

Prerequisites: Agriculture 243, 330 or Biology 430 or consent of instructor. Anatomy of the mammary gland, hormonal control of mammogenesis, initiation and maintenance of milk secretion, factors affecting level and composition of milk, synthesis of milk, physiology and mechanics of the milking process. Lecture, two hours; laboratory, two hours.

#### 545. Ruminant Nutrition. Three hours.

Prerequisites. Ag. 448, Biology 446 or equivalent, or consent of instructor. Rumen development and function, products of fermentation, nutrient requirements, absorption and metabolism, symptoms of deficiency and toxicity, basic principles of ruminant nutrition and their application to the production of milk, meat and wool. Lecture, three hours.

#### 546. Advanced Animal Breeding. Three hours.

Prerequisites: Agriculture 446 and 428 or consent of instructor. Application of population genetics to the economic improvement of farm animals, phenotypic and genetic relationships, selection aids and role of selection in changing populations, systems of mating, formulation and application of breeding plans. Lecture, two hours; laboratory, two hours.

#### 547. Advanced Animal Nutrition. Three hours.

Prerequisites: Agriculture 448, Biology 446 or equivalent, or consent of instructor. A study of the individual nutrient requirements of monogastric animals, structure, metabolism and function of each nutrient class, interrelationship of nutrient classes, deficiency and toxicity symptoms, practical application to current nutritional problems. Lecture, three hours.

#### 550. Advanced Soil Chemistry. Three hours.

Prerequisites: Ag. 450, Chemistry 212 and 230 or consent of instructor. Chemical and mineralogical properties of soil colloids; ion exchange and soil reaction; nature of soil organic matter and biochemical transformations. Lecture, two hours laboratory, two hours.

#### 551. Advanced Soil Fertility. Three hours.

Prerequisite: Agriculture 351 or consent of instructor. Evaluation of soil fertility and fertilizers, theory and application; soil-plant relationships; composition and properties of soil in relation to ion intake, nutrition and growth of plants. Lecture, three hours.

#### 553. Soil Genesis, Morphology and Classification. Three hours.

Prerequisites: Ag. 453 and Geology 111 or consent of instructor. Genesis and morphology of soils as related to classification systems; functional analysis of soil characteristics, categories, genetics and interrelationships; geographical distribution of soils of the world. Lecture, two hours; laboratory, two hours.

#### 561. Agricultural Production Economics. Three hours.

An economic analysis of agricultural production including production functions, cost functions, programming and decision-making principles, and the

application of these principles of resource allocation in Agriculture. Lecture, three hours.

**583. Curriculum Development and Determining Content in Vocational Agriculture. Three hours.**

For beginning teachers of Vocational Agriculture who have a teaching contract. Consists of principles of curriculum development, a local survey, and development of a course of study.

**589. Special Problems in Agriculture Education. One to three hours.**

Prerequisite: Student teaching completed or concurrent.

Supervised individual study in selected fields of vocational agriculture education. May be repeated to a maximum of six hours.

**590. Experimental Design and Data Analysis. Three hours.**

Prerequisite: Agriculture 491 or consent of instructor.

Statistical considerations in design of experiments; covariance, multiple regression, factorial experiments, individual degrees of freedom, incomplete block designs, experiments repeated over space and time; tests of reliability, significance and confidence levels. Lecture, three hours.

**598. Seminar. One hour.**

Reports and discussion of problems and research in agriculture. Required of all graduate students, may be repeated to a maximum of three credits.

**599. Special Problems in Agriculture. One to three hours.**

Prerequisite: Graduate standing and permission of the instructor.

Supervised individual study in selected fields of agriculture. May be repeated to a maximum of nine credits.

**675. Advanced Topics in Agriculture. One to three hours.**

Prerequisites: Graduate standing and permission of the instructor.

Special topics to acquaint the advanced student with the more significant problems and scientific developments of current interest in agriculture. Special topic titles assigned. Lecture and assignments variable with credit. May be repeated to a maximum of ten credits. May be repeated with change in title and content.

**699. Research. One to six hours.**

Prerequisite: Consent of graduate advisor.

Directed research on approved projects investigating selected fields of agriculture. May be repeated with permission.

The following 400-level courses may be taken for graduate credit:

**400G. Plant Physiology. Three hours.**

Prerequisites: Biology 248, 249 and two semesters of chemistry.

A study of the function of plant systems. Lecture, two hours; laboratory, two hours.

**410G. Crop Protection. Three hours.**

Prerequisites: Chemistry 107 or equivalent; two plant science courses.

General principles applicable to the control of insects, weeds, diseases, and

animal pests which reduce the yields or values of Kentucky crops. Cultural, biological, and other means of control are included.

**411G. Turfgrass Management. Three hours.**

Prerequisites: Agriculture 110.

A study of turfgrass, including adaptation, identification, uses and fundamental principles essential for establishing and maintaining quality turf in lawns and recreational areas.

**412G. Modern Fruit Science. Three hours.**

Prerequisite: Agriculture 311 or 312 or permission of instructor.

This course analyzes selected problems in planting, management, production and varieties of deciduous fruits and nuts for the student.

**413G. Principles and Practices of Plant Propagation. Three hours.**

Prerequisite: Biology 248 or Agriculture 312 or instructor's consent.

This course provides the fundamental principles and basic techniques to plant propagation.

**414G. Plant Breeding. Three hours. (Also, Biology 414)**

Prerequisite: Biology 327 or consent of instructor.

A study of the methods and techniques used in the application of genetic principles to the improvement of crop plants.

**418G. Landscaping For Modern Living. Three hours.**

Prerequisite: Agriculture 312 or instructor's consent.

This course has something for everyone. It offers a way to take house and garden, building materials and plant materials, the open sky and the stars at night, and blend them all to create a deeply satisfying space for everyday living.

**419G. Vegetable Production. Three hours.**

Prerequisites: Agriculture 110 and 250, Biology 148.

A study of the production and utilization of vegetable crops with emphasis on the environmental factors influencing the growth and handling of vegetables.

**421G. Forage Crops. Three hours.**

Prerequisites: Agriculture 110, 250 and Biology 148.

Distribution, improvement, establishment, production and storage of forage crops, soil-plant-animal complex as it relates to the morphology, physiology and utilization of forage.

**422G. Field Crops. Three hours.**

Prerequisites: Agriculture 110 and 250, Biology 148 or consent of instructor.

Distribution, improvement, morphology, culture, harvesting, and utilization of field crops.

**428G. Population Genetics. Three hours. (Also, Biology 428).**

Prerequisite: Biology 327 or equivalent.

Application of statistical principles to biological populations in relation to give frequency, zygotic frequency, mating systems and the effects of selection, mutation and migration on equilibrium population.

## Agriculture

### **430G. Dairy Technology. Three hours.**

Prerequisite: Agriculture 140.

The course is a study of dairy cattle in a modern agriculture. The course deals with the nutrition, breeding and management of dairy cattle with practical application to commercial dairy herds.

### **438G. Dairy Microbiology. Four hours.**

Prerequisites: Biology 207 or equivalent, or consent of instructor.

Microbiological principles and their application to production and processing of milk and milk products; identification, enumeration and control of micro-organisms important in dairy products.

### **443G. Physiology of Reproduction in Domestic Animals. Three hours.**

Prerequisites: Agriculture 243 or Biology 330 or instructor's consent.

Physiology and endocrinology of reproductive systems; anatomical, physiological, and biochemical basis of reproduction; factors affecting means of improving efficiency of reproduction, artificial breeding, synchronized estrus and related topics.

### **446G. Animal Breeding. Three hours.**

Prerequisites: Agriculture 140 and Biology 148.

Application of genetic and statistical principles to breeding and improvement of farm animals; the role of selection in changing populations effect of different mating systems upon improvement of farm animals.

### **448G. Principles of Animal Nutrition. Three hours.**

Prerequisite: Agriculture 345.

This course deals with the principles of nutrition basic to animal feeding, the chemical and physiological aspects of nutrition, the nutrient requirements for normal body functions, techniques used in nutrition research and reading in current literature.

### **449G. Laboratory Methods and Techniques in Animal Nutrition. Three hours.**

Prerequisites: Agriculture 448, Chemistry 122 or equivalent or instructor's consent.

Demonstration and Practical experience in laboratory methods for determining major minerals and vitamins in feeds, proximate analysis of feeds, digestion and balance studies with laboratory animals, products of fermentation, feed residues and contamination. Lecture, one hour; laboratory, four hours.

### **450G. Soil Chemistry. Three hours.**

Prerequisites: Agriculture 250, Chemistry 107 or 122 or consent of instructor.

Analytical techniques used in soil chemistry and soil fertility studies and nutrient determination; colloidal systems; chemical properties related to plant nutrition.

### **452G. Soil Microbiology. Four hours.**

Prerequisites: Agriculture 250 and Biology 207 or consent of instructor.

Soil microbial populations and systems and their influence on plant nutrition.

## Agriculture

Soil organic matter, its decomposition and associated microorganisms; oxidation-reduction process; nitrogen fixation.

### **453G. Soil Formation, Classification and Mapping. Three hours.**

Prerequisite: Agriculture 250.

Soil origin; methods of soil survey; classification schemes; profile description, mapping and interpretation of soil survey information with primary emphasis on Kentucky soils.

### **454G. Land-Use and Conservation. Three hours.**

Prerequisites: Agriculture 250 or consent of instructor.

Economic utilization of land for agricultural recreation and public purposes based on location and capability characteristics; interpretation and application of soil conservation, public and industrial use; practice in designing land-use maps.

### **455G. Soil Physics. Three hours.**

Prerequisites: Agriculture 250, Physics 201 and 207 or consent of instructor.

Relation of physical properties of soil to plant growth; particle-size distribution, soil structure, clay minerals, soil moisture, rheological properties and soil temperature.

### **460G. Agricultural Policy. Three hours.**

Prerequisite: Agriculture 260.

This course analyzes the principles underlying agricultural policy; the place of agriculture in the national economy; objectives of agricultural policy and the means of reaching them; appraisal of current and proposed agricultural programs; legislation for economic action.

### **461G. Advanced Farm Management. Three hours.**

Prerequisite: Agriculture 361 or instructor's consent.

Emphasizes identification, analysis, and solution of problems of farm organization and operation; how to evaluate and incorporate innovations into new or ongoing operations; case studies and field trips to situation farms in South Central Kentucky. Lecture, two hours; laboratory, two hours.

### **463G. Agricultural Finance. Three hours.**

Prerequisite: Agriculture 361 or consent of instructor.

This course is a study of farm finance problems, credit institutions, capital requirements, investment decisions, budgeting techniques, operation of lending agencies and alternative means of acquiring capital.

### **470G. Agricultural Materials Handling. Three hours.**

Prerequisite: Agriculture 374 or consent of instructor.

The investigation of principles of operation, the functional analysis of, and the design of agricultural handling systems from harvesting to the utilization of the crop. Includes conveyance, drying, sizing, mixing and sorting machines used for the handling of farm crops and animals.

### **471G. Farm Machinery. Three hours.**

Prerequisite: Agriculture 270 or consent of instructor.

A study of the design, principles, operation, selection and management of agricultural tillage and harvesting equipment.

**478G. Geography of Agriculture. Three hours.**

Prerequisite: Geography 250 or Agriculture 260 or consent of instructor. A study of the regional patterns of world agricultural production. Ecological and economic factors and cultural preferences are used in explaining the spatial patterns of crops and agricultural types. Present and potential production are evaluated in terms of regional and world needs.

**480G. Professional Field Experiences in Agriculture. Two to four hours.**

Prerequisite: major or minor in Agriculture or instructor's consent. Internship for agriculture majors and minors to give supervised experience in sales, management, production, logistics, and other phases of agri-business.

**482G. Development of Agricultural Resources for Rural Recreation. Three hours.**

Principles in developing physical facilities for various recreational enterprises. Topics to include enterprise selection, program planning, site selection, financing, and construction of facilities.

**486G. Agriculture Sales and Service. Three hours.**

Exploration, investigation, and application of principles and concepts of sales and service applied to agriculture. A credit and personal improvement course designed for agri-business and educators working with sales and service of agricultural inputs and products.

**487G. Methods in Teaching Vocational Agriculture. Three hours.**

Course organization, methods, farming programs, employment training, and Future Farmers of America activities. Departments are visited to observe programs and results.

**488G. Young Farmer and Adult Education in Agriculture. Four hours.**

Organization and program planning for classes in post-high school vocational agriculture and technical programs for young and adult farmers.

**491G. Data Analysis and Interpretation. Three hours.**

Prerequisite: Mathematics 100 or consent of instructor. Basic concepts of statistical models and use of samples, variation, statistical measures, distributions, tests of significance, analysis of variance and elementary design, regression, correlation and chi square as related to interpretation and use of scientific data.

## ART

### Graduate Faculty:

Professors: Monroe, Peterie

Associate Professors: Shelton (Head of Department), Forrester, Schieferdecker, Wallace.

Assistant Professors: Fernandez, Weaver.

**Master of Arts in Education (Art minor)**

This program provides additional graduate coursework in art while being designed for the public school teacher. The student following this program must meet all requirements for Standard High School certification. The student minoring in art may take as few as 12 hours and as many as 15 hours in art while the remaining hours are to be taken in professional education.

Art areas from which courses may be selected include art education, art history, and studios. No studio area may be selected if the student has not had undergraduate experience in it.

**Graduate Courses in Art:**

**500. History of Architecture and Sculpture. Three hours.**

A study which attempts to build through investigation upon the student's general background knowledge of art history. Art history 312 or its equivalent is a prerequisite.

**501. History of Painting. Three hours.**

A study which attempts to build through investigation upon the student's general background knowledge of art history. Art history 323 or its equivalent is a prerequisite.

**511. Investigations in Art Education. Three hours.**

Both Art 511 and 512 are designed specifically to direct the student deeply into the literature of this field and are entirely research in nature.

**512. Investigations in Art Education. Three hours.**

Art Education 511 is a prerequisite.

The following 400-level courses may be taken for graduate credit:

420G, 421G, 422G Ceramics

450G, 451G, 452G Printmaking

460G, 461G, 462G, Painting

470G, 471G, 472G Sculpture

480G, 481G, 482G Weaving

490G, 491G Special Problems

## BIOCHEMISTRY

### Graduate Faculty:

Associate Professors: Farina, Hartman, Toman

Assistant Professor: Houston

The departments of Biology and Chemistry jointly administer

## Biochemistry

course work and research programs with emphasis in biochemistry. Students interested in graduate study in biochemistry are advised to consult the department of major emphasis for specific details.

### 562. Intermediary Metabolism. Three hours.

Prerequisites: Biology (Chemistry) 466 or Biology (Chemistry) 446 and consent of instructor.

An intensive study of the metabolic pathways for carbohydrates, lipids, and proteins. Lecture, three hours. (Offered Fall '73 and alternate years). Hartman

### 580. Plant Biochemistry. Three hours.

See Department of Biology.

### 598. Graduate Seminar. One hour.

See either Department of Biology or Chemistry.

### 675. Advanced Topics. One to three hours.

See either Department of Biology or Chemistry.

### 699. Thesis Research. One to six hours.

See either Department of Biology or Chemistry.

The following 400-level courses may be taken for graduate credit:

### 400G. Plant Physiology. Three hours.

See Department of Biology.

### 411G. Cell Biology. Three hours.

See Department of Biology.

### 446G. Biochemistry. Three hours.

Prerequisites: Chemistry 314 or 340.

A study of biochemical compounds and their role in intermediary metabolism. Special topics include biochemical energetics and coenzyme mechanisms. Three lecture hours per week. (Offered Spring and Fall). Toman and Hartman

### 447G. Biochemistry Laboratory. One hour.

Corequisite or Prerequisite: Biology 446.

A basic laboratory study involving selected experiments which illustrate biochemical principles including separation, identification, and chemical properties of carbohydrates, lipids, proteins, and enzymes. Six laboratory hours per week. (Offered Spring Semester). Toman and Hartman

### 462G. Bioinorganic Chemistry. Four hours.

Prerequisite: Chemistry 314.

A study of the coordinating properties and reactivity of metal ions in living organisms. Metal ion toxicity and detoxification, clinical uses of metal chelates in biological systems, and functions of various metalloenzymes will be discussed. Three lecture hours per week. (Offered Fall Semester). Farina

### 467G. Biochemistry II. Three hours.

Prerequisites: Biochemistry 466 or Biochemistry 446 and consent of instructor.

A study of the reactions of living systems and an introduction to the mechanisms and energetics of metabolism. Three lecture hours per week. (Offered Spring Semester). Hartman

## Biology

## BIOLOGY

### Graduate Faculty:

Professors: Bailey (Head of Department), Beal, Puckett, Shadowen

Associate Professors: Dillard, Elliott, Ford, Hoyt, Jenkins, Nicely, Prins, Skean, Toman, Winstead, Yungbluth

Assistant Professors: Gleason, Houston

Adjunct Professor: L. Lockwood

### Graduate Degrees Offered:

The Department of Biology offers both masters and doctoral programs of study. The masters level degrees are as follows: Master of Science (with or without thesis); Master of Arts in College Teaching; and the Master of Arts in Education (with either a biology major or minor). The doctoral program of study (in cooperation with the University of Louisville) is restricted to specialization in Aquatic Biology.

Admission to departmental programs typically requires the equivalent of an undergraduate major in biology including two laboratory courses each in inorganic chemistry and physics and one course in organic chemistry. Exceptions are made on admissions in favor of superior students whose undergraduate degrees are in allied subject-matter fields.

### Master of Science

#### Plan A (with thesis)

The program leading to the M.S. degree (with thesis) is designed for those students whose vocational goals require specialization within biology and a related research experience.

Candidates must complete at least 30 semester hours of course work, excluding the research tool. A maximum of six hours in Thesis Research (Biology 699) may be applied toward the degree. The thesis is based upon original research performed under the direction of a member of the Graduate Faculty of the Department of Biology.

A research tool, the exact nature of which is determined by the candidate's Graduate Advisory Committee with approval of the Dean of the Graduate College, is required. Examples of a research tool are the demonstration of a reading knowledge of a foreign language, competency in statistical methodology, computer programming, or electron microscopy.

## Biology

### Plan B (without thesis)

This program leading to the M.S. degree (without thesis) is designed for those students who desire additional training to acquire a higher level of competence in biological or biologically related professions before or after entering their field of employment. The program must be organized under the direction of a member of the Graduate Faculty of the Department of Biology.

Candidates must complete at least 30 semester hours of course work in biology or related subject-matter fields, excluding the research tool. A research tool, as outlined in the preceding description of the M.S. (Plan A), is required.

Although a thesis is not required and credit in Biology 699 is not allowed, M.S. (Plan B) candidates are required to take two to three hours of Investigations in Biology (Biology 516) as an introduction to research.

### Master of Arts in College Teaching

The program leading to the M.A.C.T. in Biology is designed especially for the preparation of community and junior college teachers.

Candidates must complete at least 30 semester hours of course work, excluding the research tool, of which a minimum of 24 must be in biology. The remaining hours may be selected from the graduate offerings of other departments. A research tool, as outlined in the preceding description of the M.S. (Plan A), is required.

Although a thesis is not required and credit in Biology 699 is not allowed, M.A.C.T. candidates are required to take two to three hours of Investigations in Biology (Biology 516) as an introduction to research.

All M.A.C.T. candidates are required to have teaching experience as a part of their program. This requirement is usually met by supervised instruction through Internship in College Instruction (Biology 600) in a general biology course.

### Master of Arts in Education (Biology Major or Minor)

The program leading to the M.A. in Ed. with a major or minor in Biology is designed for the preparation and strengthening of secondary school science teachers.

To qualify for a subject-matter major in biology, the M.A. in Ed. candidate must complete a minimum of 21 hours of course work in biology and nine hours in professional education courses. Students in

## Biology

the M.A. in Ed. program minoring in biology must complete 12 to 15 hours of course work in biology and 15 to 18 hours in professional education courses.

Students who desire a breadth of course work in the sciences may major in the Science Area of Concentration under the M.A. in Education program. The courses in biology those students take must be approved by the chairman of the Department of Biology.

There is no thesis or research tool requirement for the M.A. in Education in Biology.

### Doctor of Philosophy

A cooperative graduate program leading to the Doctor of Philosophy with specialization in Aquatic Biology is administered by the departments of biology of Western Kentucky University and the University of Louisville. Interested students may obtain detailed information about the program from Dr. E. O. Beal; Department of Biology; Western Kentucky University or from Dr. B. L. Monroe; Department of Biology; University of Louisville; Louisville, Kentucky.

### TECH AQUA BIOLOGICAL STATION

Western Kentucky University is a charter member of the Tech Aqua Development Consortium which operates a biological station on Center Hill Lake near Cookeville, Tennessee. A variety of field biology courses is offered during two five-week sessions each summer. Interested students should contact Dr. J. Winstead of the Department of Biology for additional information about the Tech Aqua Program.

### Graduate courses in Biology:

#### 505. Biogeography. Three hours.

See Department of Geography and Geology.

#### 511. Limnology. Four hours.

Prerequisite: Consent of instructor.

A study of the physical, chemical, and biological aspects of bodies of freshwater with emphasis on water as a biological environment. Lecture, two hours; laboratory, four hours. (Offered Fall '74 and alternate years). Prins hours; laboratory, four hours. (Offered Fall '74 and alternate years). Prins

#### 515. Plant Ecology. Four hours.

Prerequisites: Biology 248 and consent of instructor.

A study of ecological concepts and their application to experimental approaches for studying the interaction of plants with their environment. Emphasis will be on population studies involving biochemical, physiological,

and phenological approaches. Lecture, two hours; laboratory, four hours. (Offered Spring '74 and alternate years). Winstead

**516. Investigations in Biology. One to three hours.**  
Prerequisite: Consent of research project director.  
A study for graduate students involving a research project under faculty supervision (not applicable to M.S. Plan A). (Offered every semester and Summer). Staff

**527. Advanced Genetics. Four hours.**  
Prerequisite: Biology 327 or consent of instructor.  
A study of advanced Mendelian principles and post-Mendelian genetics with emphasis on recently developing areas of research. Lecture, two hours; laboratory, four hours. (Offered Spring '75, Summer '74 and alternate years). Yungbluth

**540. Algal Systematics and Ecology. Four hours.**  
A study of the systematics and ecology of freshwater algae with an emphasis on the composition, periodicity, and succession of regional phytoplankton and periphyton communities. Lecture, two hours; laboratory, four hours. (Offered Fall '74 and alternate years). Dillard

**550. Aquatic Invertebrates. Three hours.**  
Prerequisite: Biology 408 or consent of instructor.  
A study of the taxonomy and ecology of invertebrates in lakes, ponds, and streams. Lecture, one hour; laboratory, four hours. (Offered summers on campus on demand or at Tech Aqua). Prins

**560. Advanced Parasitology. Four hours.**  
Prerequisite: Biology 460 or consent of instructor.  
An intensive study on the culture, determination of physiological requirements, experimental infection of hosts, and host-specificity of parasites. Lecture, two hours; laboratory, four hours. (Offered Spring '75 and alternate years). Gleason

**562. Intermediate Metabolism. Three hours.**  
See Biochemistry.

**570. Immunology. Four hours.**  
Prerequisite: Consent of instructor.  
An introduction to the biology of the immune response. Deals with the mechanism, manipulation, and effects of this major means by which higher animals maintain their organic integrity. Lecture, two hours; laboratory, four hours. (Offered Spring '74 and alternate years). Skean

**580. Plant Biochemistry. Three hours.**  
Prerequisite: Chemistry 314 or 342.  
A study involving the occurrence, properties, function, and metabolism of many organic compounds found in plants; includes a detailed study of enzymes, carbohydrates, plant pigments, photosynthesis, nitrogen metabolism, and plant growth regulators. Lecture, three hours. (Offered Summer '75 and alternate years). Toman

**591. Aquatic Biology. Four hours.**  
Prerequisite: Consent of instructor.  
An ecological and systematic study of the plant and animal communities of freshwater lotic and lentic habitats. Lecture, two hours; laboratory, four hours. (Offered Fall '73 and alternate years). Prins

**592. Freshwater Ecology. Four hours.**  
Prerequisite: Consent of instructor.  
A study of the principles of ecology employing the aquatic ecosystem as the area of investigation. Hoyt

**598. Graduate Seminar. One hour.**  
A study of special topics in Biology with student participation. (Offered every semester). Staff

**600. Internship in College Instruction. One hour (may be repeated).**  
A course designed for students in the M.A.C.T. program in Biology, in which the student is directed by a member of the staff in preparation of lectures, giving of lectures, and analyses of presentations and techniques. (Offered every semester and Summer). Staff

**675. Advanced Topics in Biology. One to three hours.**  
A course of study at the graduate level covering special or selected topics in Biology. (Offered on demand). Staff

**699. Thesis Research. One to six hours.**  
A course in which the graduate student is directly engaged in research leading to completion of the thesis requirement for the M.S. (Plan A) in Biology. (Offered every semester and Summer). Staff

**The following 400-level courses may be taken for graduate credit:**

**400G. Plant Physiology. Three hours.**  
Prerequisites: Biology 248, 249 and two semesters of Chemistry.  
A study of the functioning of plant systems. Lecture, two hours; laboratory, two hours. (Offered Fall '73 and alternate years). Toman

**404G. Techniques and Theory of Electron Microscopy. Three hours.**  
No prerequisites at graduate level.  
A course in the fundamentals of electron microscopy including basic theory, techniques for specimen preparation and photography and operation of the electron microscope. An independent research project is required which necessitates interpretation of data obtained by using the electron microscope. Lecture, two hours; laboratory, two hours. (Offered every semester and summer). Beal

**407G. Virology. Three hours.**  
Prerequisites: Biology 158 and 159 or consent of instructor.  
A study of bacterial, animal and plant viruses with special emphasis on the chemistry and replication of bacterial viruses. Three lecture hours per week. (Offered Spring '74, Summer '75 and alternate years). Ford

**408G. Invertebrate Zoology. Four hours.**

Prerequisites: Biology 258, 259.

A survey of the phyla of invertebrate animals, including their taxonomy, morphology, physiology, development and evolution. Lecture, two hours; laboratory four hours. (Offered Spring semester). Prins

**411G. Cell Biology. Three hours.**

Prerequisites: Biology 148, 149 and Organic Chemistry.

A lecture series emphasizing the morphological and chemical make-up of cells, the physical and chemical properties of the cell and the modern techniques for investigation of cellular functions. Three lecture hours per week. (Offered every semester and Summer). Houston

**416G. Systematic Botany. Four hours.**

Prerequisite: Biology 348 or consent of instructor.

A study of variation, phylogeny and classification of flowering plants including consideration of the major processes of plant speciation and the application of modern biosystematic procedures for obtaining and utilizing taxonomic data. Lecture, two hours; laboratory, four hours. (Offered Summer '74 and alternate years). Nicely

**425G. Medical Entomology. Three hours.**

Prerequisites: Biology 258 and 259 or consent of instructor.

A study of the structure, identification and control of insects and other arthropods which create pathological conditions in man, either directly or through transmission of disease-producing organisms. Lecture, two hours; laboratory, two hours. (Offered Spring '75 and alternate years). Gleason

**428G. Population Genetics. Three hours.**

See Department of Agriculture.

**431G. Radiation Biophysics. Four hours.**

See Department of Physics and Astronomy.

**432G. Advanced Animal Physiology. Three hours.**

Prerequisites: Biology 330, 331.

A course involving in-depth studies of selected systems and topics in physiology. Emphasis is placed on the experimental approach. Three lecture hours per week. (Offered Spring semesters). Bailey

**436G. Biophysics Seminar. One hour.**

See Department of Physics and Astronomy.

**446G. Biochemistry. Three hours.**

See Biochemistry.

**447G. Biochemistry Laboratory. Two hours.**

See Biochemistry.

**456G. Ichthyology. Four hours.**

Prerequisites: Biology 258, 259 and consent of instructor.

A survey of the fishes of the world, their physiology, structure, behavior, and ecology. Special emphasis will be placed upon the collection and identification of freshwater species of Kentucky. Lecture, two hours; laboratory, four hours. (Fall '76 and alternate years). Hoyt

**458G. Fishery Biology. Three hours.**

Prerequisite: Biology 409 and consent of instructor.

A course dealing with various biological aspects of population of freshwater fishes. Emphasis will be directed toward reproduction and development, food and feeding habits, age and growth, population dynamics, pollution effects, culture techniques and fish survey. Lecture, two hours; laboratory, two hours. (Offered Spring '75 and alternate years). Hoyt

**459G. Mammalogy. Four hours.**

Prerequisites: Biology 258, 259.

A comprehensive study of the taxonomy, life history and ecology of the mammals. The laboratory work will consist of studies in the field as well as the collection and study of specimens in the laboratory. Lecture, two hours; laboratory, four hours. (Fall '75 and alternate years). Shadowen

**460G. Parasitology. Four hours.**

Prerequisite: Biology 258, 259.

A study of the morphology, physiology, life histories, control and economic significance of representative species. Lecture, two hours; laboratory, four hours. (Offered Fall Semester). Gleason

**462G. Bioinorganic Chemistry. Three hours.**

See Biochemistry.

**464G. Endocrinology. Three hours.**

Prerequisite: Biology 148 and either 195 or 258. Biology 330 recommended.

A comprehensive study of the structure and function of the endocrine glands, and their role in physiological communication and regulation. (Offered Spring '74 and alternate years) Puckett

**465G. Endocrinology Laboratory. One hour.**

Corequisite: Biology 464G.

A laboratory course correlated with Biology 464G. Two laboratory hours per week. (Offered Spring 1974 and alternate years). Puckett

**467G. Biochemistry II. Three hours.**

See Biochemistry.

**470G. Pathogenic Microbiology. Four hours.**

Prerequisites: Biology 158, 159 and consent of instructor.

A study of the organisms causing disease with emphasis on bacteria. The course will survey pathogenic bacteria, viruses, rickettsiae, fungi and protozoa. Lecture, two hours; laboratory, four hours. (Offered Fall '74 and alternate years). Elliott

**472G. Food Microbiology. Four hours.**

Prerequisite: Consent of instructor.

A study of the preservation, fermentation and spoilage of foods including a study of food and milk microbiology. Lecture, two hours; laboratory, four hours. (Offered Spring '74 and alternate years). Elliott

**475G. Selected Topics in Biology. One to three hours.**

Prerequisite: Consent of instructor.

A consideration of special topics to acquaint the advanced students with significant problems and developments of current interest in biology. (Offered every semester and Summer). Staff

## Biology/Business Administration

### 477G. Morphology of Non-Vascular Plants. Four hours.

Prerequisites: Biology 158, 159.

A consideration of the structure, development and phylogenetic relationships of the algae, fungi and bryophytes. Lecture, two hours; laboratory, four hours. (Offered Fall Semester). Dillard

### 478G. Morphology of Vascular Plants. Four hours.

Prerequisites: Biology 248 and 249 or 477.

A consideration of the structure, development and phylogenetic relationships of the primitive vascular plants, gymnosperms and angiosperms. Lecture, two hours; laboratory, four hours. (Offered Spring '75 and alternate years). Nicely.

### 485G. Field Biology. Three hours.

Prerequisite: Consent of instructor.

An intensive field experience on a specific biological topic, consisting of a two-week camping field trip to a geographical area of biological interest preceded by a four-day introductory session and followed by a one-day evaluation session. (Offered only on a 3 week basis during May or Summer sessions). Staff

### 491G. Data Analysis and Interpretation. Three hours.

See Department of Agriculture.

## BUSINESS ADMINISTRATION

### Graduate Faculty:

Professors: Ahmed, Evans, Hays (Head of Department)

Associate Professor: Nelson

Assistant Professor: Shanklin

### Master of Business Administration

The program is designed to provide professional education for successful careers in management. It is general in approach and emphasizes the relevance of economics, quantitative methods and the behavioral sciences.

Admission to the program requires the approval of the Graduate College and the Master of Business Administration Admissions Committee. The Admissions Committee applies the minimum requirements as recommended by the American Assembly of Collegiate Schools of Business. These requirements are as follows:

(1) Admissions Test for Graduate Study in Business (ATGSB) score of 450 or above and overall grade point average of 2.5 (4.0)

or

## Business Administration

(2) ATGSB score of 450 or above and junior-senior grade point average of 2.75(4.0) or above

or

(3) a total of at least 950 points based on the formula:  $200 \times$  undergraduate g.p.a. + ATGSB score

or

(4) a total of at least 1000 points based on the formula:  $200 \times$  junior-senior g.p.a. + ATGSB score.

ATGSB registration forms and information bulletins can be obtained by contacting the University Counseling Services Center in the College of Education Building at Western or by writing to Educational Testing Service, Princeton, New Jersey, 08540.

The following courses or their academic equivalents are program prerequisites: Statistical Analysis for Economics and Business (Economics 306) and Financial Statement Analysis (Accounting 460). A minimum academic average of 3.0 (4.0) must be achieved in these courses.

The M.B.A. program requires the student to complete 30 semester hours of approved graduate course work or 24 hours of such course work and a thesis. All students are required to complete the following 24 hour core:

Accounting 560. Controllership (see description under Accounting).

Bus. Ad. 500. Business, Government, and Law.

Bus. Ad. 510. Organization Theory.

Bus. Ad. 513. Production and Operations Management.

Bus. Ad. 520. Advanced Marketing.

Bus. Ad. 530. Finance and Valuation of Corporations.

Econ. 520. Advanced Microeconomic Theory (see description under Economics).

Econ. 525. Advanced Macroeconomic Theory (see description under Economics).

Evening classes are available for those wishing to pursue the degree on a part-time basis.

### Graduate Courses in Business Administration:

#### 500. Business, Government, and Law. Three hours.

An examination of the development, implementation, and impact of major public policies toward business, including antitrust, public utility regulation, consumer protection, conservation and environmental control.

## *Business Administration/Business Education and Office Administration*

### **503. International Business. Three hours.**

A broad survey of the institutions, organizations, and procedures of international business.

### **510. Organization Theory. Three hours.**

Investigation of analytical concepts and models derived from the classical, behavioral, decision-making, and systems approaches to the study of administrative organization.

### **511. Management Science I. Three hours.**

Use of calculus in business decisions: matrices and extrema; linear programming and simplex; duality theorems; two phase and big M method; Kuhn-Tucker theorems gradient projection method; quadratic programming; dynamic programming Markov chains; Howard's policy iteration method and Markovian systems.

### **512. Management Science II. Three hours.**

A study of the basic Markov process, systems analysis of linear processes, systems analysis of Markov processes, reward structure for discrete-time processes, dynamic programming and semi-Markov decision processes, computer simulation of Markovian system.

### **513. Production and Operations Management. Three hours.**

The course presents an organized body of knowledge concerning the design, operation and control of production systems. It draws upon the mathematical, physical and behavioral sciences in developing generalized decision rules for the integration of men, machines and material into functioning systems.

### **520. Advanced Marketing. Three hours.**

Intensive analytical study of important aspects of marketing principles, institutions, policies, and operations. This course presents information from the quantitative and behavioral sciences which is important to understanding the theory, philosophy, and operation of integrated marketing systems.

### **530. Finance and Valuation of Corporations. Three hours.**

An examination of financing policies of corporate entities. Planning the capital structure, measuring and controlling the costs of alternative sources of funds, dividend policy, capital budgeting, and growth through mergers and acquisitions are the topics upon which emphasis is placed.

## **BUSINESS EDUCATION AND OFFICE ADMINISTRATION**

### **Graduate Faculty:**

Professor: Sharpe (Head of Department)

Associate Professors: Harrington, Inman, Keck, Ray, Utley

## *Business Education and Office Administration*

### **Degree offered:**

**Master of Arts in Education (Business Education and Office Administration major or minor)**

The student majoring in Business Education and Office Administration may take a minimum of 18 or a maximum of 21 hours in that department, and the student minoring in business education and office administration may take a minimum of 12 hours or a maximum of 15 hours in that department.

### **Graduate Courses in Business Education and Office Administration:**

#### **525. Modern Stenographic Techniques. Three hours.**

Provides symbol shorthand teachers with touch shorthand theory. Teaching methods and development of the basic speed on the Stenograph.

#### **530. Modern Data Processing. Three hours.**

An introduction to the field of electronic data processing, its hardware, languages, and applications.

#### **535. Survey of Distribution. Three hours.**

A survey embracing all business activities involved in moving goods from production to consumption. Emphasis is given to developing a philosophy of the role of marketing in the American economy.

#### **540W. Consumer Financial Problems. Three hours.**

A presentation of eight basic elements of money management and a conceptual relationship of these elements to family units and corporate citizenship.

#### **544. Current Problems in Business Education. Two to six hours.**

Course to be taught either as independent study, workshops, or in regularly organized classes. Current problems in business education and significant research related to such problems will form the basis of this course.

#### **545. Principles of Business Education. Three hours.**

Advanced study of principles, practices, and problems in business education with special reference to the needs and trends in this field. Topics emphasized include standards; guidance; job placement and follow-up; equipment; supervision and business curricula of the secondary school, the private business school, the junior college, and the collegiate school of business.

#### **550. Contemporary Office Administration Problems. Three hours.**

Prerequisite: Business Education 462 or permission of instructor. Examination, in depth, of basic problems in office administration through individual and group analysis and presentation of case problems and current literature; problems areas covered include: office systems analysis and design, office procedures and methods, office cost control, office personnel, office environmental factors, and office automation.

*Business Ed., Office Administration/Career and Vocational Teacher Ed.*

**575. Administration and Supervision in Business Education. Three hours.**  
Study of the roles and functions of administration and supervision in business education on the high school level, city level, and state level, and in colleges and universities.

**The following 400-level courses may be taken for graduate credit:**

**461G. Report Writing. Three hours.**

Methods of report writing. Defining the problem, collecting and organizing information, constructing the report and interpreting the information and presenting of report.

**462G. Office Management. Three hours.**

Fundamentals of management applied to the administrative services area; the coordination of office services and employees that assists in the achievement of organizational objectives.

**463G. Records Management. Three hours.**

Designed to develop and operate systems for the retrieval and retention of information and to set forth procedures for the creation, classification, automation and innovation, work measurement and retention and disposition of the various types of written records.

**471G. Internship in Business and Office Education. Three hours.**

Prerequisites: One of the following: BA 310, BE & OA 462, or BE & OA 463. Regular seminars supplemented by on-the-job experience, including a variety of work assignments that demand adaptation of formal academic background to a working business office environment, and culminated by review and analysis seminars.

**481G. Advanced Business Communications. Three hours.**

Communication theory applied to office management situations. Communication in the administrative process with emphasis on written and oral communication.

## **CENTER FOR CAREER AND VOCATIONAL TEACHER EDUCATION**

**Graduate Faculty:**

Professors: Ehresman, Riley

Associate Professor: Nave

Assistant Professors: Ashley, Feck, Hillison

The Center for Career and Vocational Teacher Education coordinates Vocational Teacher Education Programs and offers a program leading to certification for administrators, coordinators, and supervisors of vocational education. The program, designed to provide knowledge and competencies needed by vocational administrators, includes a mini-

*Career and Vocational Teacher Education/Chemistry*

mum of 15 hours which may be planned into a master's degree or other graduate programs.

**For graduate courses in Career and Vocational Teacher Education, see pp. 58-71.**

## **CHEMISTRY**

**Graduate Faculty:**

Professors: Lloyd, Wilkins, Wilson (Head of Department)

Associate Professors: Farina, Hartman, Hendrickson, Holy, Hunter, Reasoner, Shank

Assistant Professors: Pearson, Riley

**Degrees Offered:**

Master of Science in Chemistry; Master of Arts in College Teaching in Chemistry; Master of Arts in Education (Chemistry major or minor)

**Master of Science in Chemistry**

Candidates for admission to this program in chemistry must submit evidence of satisfactory completion of undergraduate curricula in chemistry. Graduates of American colleges and universities are urged to submit, at the time of application, test scores from the Graduate Record Examination Advanced Test in Chemistry and the Graduate Record Examination Aptitude Test. Students admitted without these test scores should take them during their first semester on campus. Graduates of foreign colleges and universities are required to submit test scores from Graduate Record Exam (Aptitude Test), Graduate Record Exam (Advanced Test in Chemistry), and the Test of English as a Foreign Language (TOEFL) as a part of their applications for admission to graduate studies in chemistry.

At the beginning of each semester the Department administers a series of entrance examinations to all incoming graduate students in chemistry. These examinations cover the areas of undergraduate instruction in analytical, inorganic, organic, and physical chemistry. Students whose test scores indicate weakness in one or more areas will be required to complete satisfactorily the appropriate undergraduate courses (for no graduate credit).

Graduate course requirements for the M.S. degree in chemistry constitute a minimum of 24 hours of coursework other than research,

including one course acceptable for graduate credit in each of four of the five major areas of chemistry; analytical, inorganic, organic physical, and biochemistry. Students electing biochemistry must take or have taken Chem. 466 and 467 or equivalent to satisfy this requirement. In addition, Chem. 435 is required of all students who have not submitted evidence of successful completion as an undergraduate of an instrumental methods course. All graduate students will take Chem. 598 (seminar) each semester; a minimum of two seminars must be given by each graduate student with only one semester hour of credit being allowed toward the master's degree.

Candidates for the M.S. degree in chemistry will be expected to take at least 18 of their 24 hours of coursework within the Department of Chemistry. (However, a student wishing to pursue an interdisciplinary program of study may obtain permission from the Head of the Department of Chemistry to take less than 18 hours in chemistry, provided that the "outside" coursework is in an allied science and that all other departmental requirements are met.) At least half of all chemistry credit hours earned in coursework shall be obtained in courses numbered above 500. M.S. candidates must maintain a grade point average of at least 3.00 in their chemistry courses in order to remain in good academic standing.

A thesis is required for the M.S. degree in Chemistry and is based on the results of an experimental laboratory investigation performed under the direction of a member of the Graduate Faculty within the Department of Chemistry. At the conclusion of the thesis, the M.S. candidate must give a satisfactory oral defense of his thesis work.

The ability to translate a modern foreign language (restricted to German, Russian, or French) must be demonstrated. The determination of language competence is made by the Department of Foreign Languages as specified by the office of the Graduate College. If the M.S. candidate elects a research tool in lieu of the language requirement, it must have the approval of the research advisor of the candidate and the Head of the Chemistry Department.

#### Master of Arts in College Teaching in Chemistry

The Master of Arts in College Teaching (M.A.C.T.) program is designed especially for the preparation of community college and junior college instructors. Admission requirements and entrance examinations are the same as those for M.S. degree candidates.

Candidates for the M.A.C.T. degree are expected to complete a

minimum of 18 hours of graduate coursework in chemistry if no thesis is undertaken, or a minimum of 15 hours graduate coursework in chemistry if a thesis is elected. Chemistry coursework will include Chem. 435, unless an equivalent course has been completed satisfactorily, and at least one graduate level course in four of the following areas of chemistry: analytical, biochemistry, inorganic, organic and physical. M.A.C.T. candidates will also take Chem. 570, and will be expected to complete a program of supervised college teaching.

Students in the M.A.C.T. program must meet research tool requirements as stipulated by and acceptable to the student's graduate advisor and the Dean of the Graduate College.

M.A.C.T. candidates have the option of completing a research project and submitting a thesis in the area of chemical education, along with a total of 24 hours of graduate coursework, or of electing to complete 30 hours of graduate coursework with no thesis. At least half of all hours earned in chemistry coursework shall be in courses numbered above 500.

#### Master of Arts in Education (Chemistry major or minor)

This program is designed especially for the preparation and strengthening of secondary school science teachers. Students pursuing this program should confer closely with their advisors in the Department of Secondary Education.

To qualify for a subject-matter major in chemistry, the M.A. in Education student must complete a minimum of 12 hours of course work in chemistry (the remaining six hours may be taken in chemistry or in a related subject-matter area). The student in the M.A. in Education program getting a major in an allied subject-matter area may qualify for a minor in chemistry with the completion of a minimum of eight hours of coursework in chemistry. Students who have not previously completed a year of physical chemistry are strongly urged to take Chemistry 350 and 352, which may be counted for credit toward the M.A. in Education degree.

Students who desire a breadth of coursework in the sciences may major in the Science Area of Concentration under the M.A. in Education degree program. The courses in chemistry these students take must be approved by their advisor in the Science Area (Dr. W. H. Stroube), by their advisor in Secondary Education, and by the Head of the Chemistry Department.

## Chemistry

## Graduate Courses in Chemistry:

**500. Fundamentals of Chemistry. Three hours.**

Prerequisites: Undergraduate minor in chemistry.

A study of the fundamental principles, theories, and laws of chemistry. Such topics as atomic and molecular structure, stoichiometry, acid-base theory, molecular and ionic equilibrium, and elementary thermo-dynamics will be discussed. This course does not meet requirements for the M.S. or M.A.C.T. degrees.

**502. Fundamentals of Modern Chemical Analysis. Three hours.**

Prerequisites: Undergraduate minor in chemistry.

A study of modern methods of chemical analysis including an introduction to instrumental analysis. Such instruments as the automatic titrator, gas chromatograph, emission spectrograph, and absorption spectrophotometers will be discussed. Other methods of analysis such as thin layer chromatography, electrodeposition, and various potentiometric methods will be studied. This course does not meet requirements for the M.S. or M.A.C.T. degrees.

**503. Fundamentals of Modern Chemical Analysis Laboratory. One hour.**

Prerequisites: Concurrently with Chemistry 502.

This laboratory is to accompany Chemistry 502 and includes experiments using the instruments and techniques discussed in the lecture course.

**516. Investigations in Chemistry. One to three hours.**

A critical and comprehensive study of chemical literature dealing with a special topic of interest to the student, including reports and proposals for further research. (It is not applicable to the M.S. degree.)

**520. Advanced Inorganic Chemistry I. Three hours.**

Prerequisites: Chemistry 352 and 420 or equivalent.

This course will consist of the study of various aspects of coordination chemistry. Topics covered will include the chemical bonding, stability, and stereochemistry of coordination and organometallic compounds.

**521. Advanced Inorganic Chemistry II. Three hours.**

Prerequisites: Chemistry 520 or consent of instructor.

The course content will consist of a study of various current theories of inorganic reaction mechanisms. Modern techniques of studying inorganic reaction rates, as well as other selected topics, will be included.

**530. Instrumental Analysis I. Three hours.**

Prerequisites: Chemistry 435 or consent of instructor.

A study of the theory and applications of modern instrumental methods of analysis.

**531. Instrumental Analysis II. Three hours.**

Prerequisite: Chemistry 530.

A continuation of the study of modern instrumental methods of analysis.

**540. Organic Reactions. Three hours.**

Prerequisites: Chemistry 440 or consent of instructor.

A study of modern synthetic methods used in organic chemistry.

**541. Theoretical Organic Chemistry. Three hours.**

Prerequisites: Chemistry 352 and 440 or consent of instructor.

A study of modern theories of organic reaction pathways.

**550. Chemical Thermodynamics. Three hours.**

Prerequisites: Chemistry 352 and Math 228 or equivalents.

The study of thermodynamics with emphasis on chemical applications.

**551. Chemical Kinetics. Three hours.**

Prerequisites: Chemistry 352 and Math 228 or equivalent.

A general consideration of chemical reaction rates and theory of reaction rates.

**562. Intermediary Metabolism. Three hours.**

See Biochemistry.

**570. Lecture Demonstration Techniques. One hour.**

Prerequisite: Chemistry 352 or equivalent.

A practical course in the design and operation of meaningful lecture demonstrations in chemistry. Required of all M.A.C.T. candidates; does not meet requirements for the M.S. degree.

**598. Graduate Seminar. One hour.**

Prerequisites: graduate standing.

Reports and discussions of recent research in chemistry. Required of all graduate students each semester but only one credit allowed to count toward the MS.

**632. Principles of Analytical Chemistry. Three hours.**

Prerequisite: Chemistry 435 or consent of instructor.

A study of the theory and practice of modern quantitative analysis.

**652. Introductory Quantum Mechanics. Three hours.**

Prerequisites: Chemistry 352 and Math 228 or equivalent.

Introduction to quantum mechanics with emphasis on the aspects most related to chemistry.

**675. Advanced Topics in Chemistry. One to three hours.**

Prerequisite: consent of instructor.

Modern topics in the fields of analytical, biological, inorganic, organic and physical chemistry offered on demand. Course may be repeated for credit provided topics differ for each semester.

**699. Research in Chemistry. One to five hours.**

Experimental work in analytical, biological, inorganic, organic, or physical chemistry. May be repeated indefinitely.

**The following 400-level courses may be taken for graduate credit: (See undergraduate catalog for more detailed course descriptions).**

**412G. Introduction to Physical Chemistry. Four hours.**

Prerequisites: Chemistry 122-123 and Math 125.

A study of the chemical principles involved in thermodynamics, kinetics,

**Chemistry**

equilibrium and other selected topics. Specifically for secondary education majors and those students not qualifying for the Chemistry 350-352 sequence.

**413G. Introductory Physical Laboratory. One hour.**  
Prerequisites: Chemistry 230, Mathematics 125, concurrently with Chemistry 412.  
A laboratory to accompany Chemistry 412 which includes experiments on thermochemistry, reaction rates and equilibrium studies.

**420G. Inorganic Chemistry. Three hours.**  
Prerequisite: Chemistry 352-353 or concurrently with 352-353.  
A study of such topics as atomic structure, molecular structure, bonding theory, ionic substances, electron deficient compounds, acid-base theory and coordination chemistry.

**421G. Inorganic Chemistry Laboratory. Two hours.**  
Prerequisite: Chemistry 420 or concurrently with 420.  
An optional laboratory designed to accompany Chemistry 420, involving the preparation of inorganic compounds utilizing a variety of handling techniques, and the application of various physical methods to inorganic systems. Not acceptable for M.S. degree.

**430G. Advanced Quantitative Analysis. Two hours.**  
Prerequisite: Chemistry 332 or Chemistry 435.  
Consists of selected topics in advanced analytical theory and principles. Not acceptable for M.S. degree.

**431G. Advanced Quantitative Laboratory. Two hours.**  
Prerequisite: Chemistry 332 or Chemistry 435.  
A laboratory course designed to accompany Chemistry 430. Not acceptable for M.S. degree.

**435G. Analytical Chemistry. Four hours.**  
Prerequisite: Chemistry 352-353.  
A course in modern instrumental methods of analysis including spectro photometric, electroanalytical and chromatographic techniques.

**440G. Advanced Organic Chemistry. Two hours.**  
Prerequisite: Chemistry 342 and 343.  
The course is a consideration of organic reactions employing modern theories.

**441G. Advanced Organic Laboratory. Two hours.**  
Prerequisite: Chemistry 342-343.  
A course in organic synthesis employing more complex techniques than used in Chemistry 341 and 343. Not acceptable for M.S. degree.

**442G. Qualitative Organic Analysis. Three hours.**  
Prerequisite: Chemistry 342 and 343.  
A course consisting of characterization and identification of organic compounds.

**446G. Biochemistry. Three hours.**  
See Biochemistry. Not acceptable for M.S. degree in chemistry.

**447G. Biochemistry Laboratory. Two hours.**

See Biochemistry.

**450G. Advanced Physical Chemistry. Two hours.**

Prerequisite: Chemistry 352-353.

This is a study of special topics such as quantum mechanics, atomic and molecular spectra, statistical thermodynamics and reaction-rate theory.

**462G. Bioinorganic Chemistry. Three hours.**

See Biochemistry.

**467G. Biochemistry II. Three hours.**

See Biochemistry.

**470G. Chemistry for the "Middle School." Four hours.**

Prerequisites: Chemistry 108 or 123 or consent of instructor.

A study of the chemical theories and principles which are involved in the typical middle school science curricula. The emphasis of the course will be the applications of chemistry in everyday life situations. May be used as an elective, but does not count towards a major or minor in chemistry for the secondary education student.

**COUNSELOR EDUCATION****Graduate Faculty:**

Professor: Burkeen, (Head of Department)

Associate Professors: Brumfield, S. Farley, Mitchell, Sheeley, Updike

Assistant Professors: Ashley, Kiewra, Robinson, Schnacke

**Degrees offered:**

Master of Arts in Education leading to Provisional Certification in Counseling, Master of Arts in Education with a major in Student Personnel Services in Higher Education; Master of Public Service degree with Counselor Education option; Thirty-Hour Post-Master's program leading to a Standard Certificate for Counselors (see page 191); Specialist Degree with majors in Counselor Education.

The major purpose of Counselor Education programs is to provide qualified personnel opportunities to develop the necessary competencies required of professional workers in the area of guidance, counseling and personnel services.

Counselor Education programs are available at Western to prepare school and professional personnel for the following positions:

1. Elementary School Counselor
2. Secondary School Counselor

\*Application Form (Form A) following Index

3. Higher Education Counselors
4. Employment Counselor
5. Vocational Counselor
6. Counselors in Community Agencies
7. Student Personnel Workers in Higher Education
8. Business and Industrial Personnel Workers

**The School Counselor Curriculum.** This program leads to the Master of Arts degree and the Provisional Certificate for School Counselors.

**I. Pre-Admission Course Requirement:**

**A. Professional Education Requirements:**

Students shall complete Education 500 and one of the following three courses prior to admission to the program for school counselors:

Education 577—History and Philosophy

Education 580—The Curriculum

Education 576—Foundations of Education

Note: Other professional education courses may be taken upon consultation with the student's advisor.

**B. Counselor Education Requirement:**

Students shall complete the following three hour course prior to admission to the program for school counselors:

Education 550—Introduction to Guidance \_\_\_\_\_ 3 sem. hrs.

**TOTAL** \_\_\_\_\_ 9 sem. hrs.

**II. Requirements for Admission to the School Counselor Program:**

Admission to the school counselor program requires the approval of the Department of Counselor Education admissions committee.

This approval will be based upon the following:

- A. Successful completion of the pre-admission requirements including the attainment of full graduate standing.
- B. The possession of a teaching certificate.
- C. One year's satisfactory teaching experience in public or private school. This requirement can be waived with the understanding that it is completed prior to or completed concurrently with program completion, or in some limited instances it can be waived upon the determination of the staff in the Department of Counselor Education. The Department of Counselor staff has the responsibility of assessing the level

of maturity of the candidates and can require additional experiences in the world of work generally, in the teaching field, and/or including additional course work. Recommendation for provisional certification will not be made until the teaching and work experience requirements are met.

**D. Demonstration of potential for developing effective relationships with students, teachers, administrators, and parents, and a familiarity with themselves and the objectives of the Counselor Education program.** This potential will be determined through a program of self-evaluation by the candidate and an evaluation of the student by the Department of Counselor Education staff. Specific activities and experiences provided in the introductory guidance course will play a key role in this determination as well as securing of information from other sources as employers, supervisors, graduate instructors, and others as needed. Admission to the school Counselor Program does not insure successful completion of the program.

**III. Post-Admission Course Requirements:**

Upon the student's admission to the school counselor program, the schedule below will be followed:

**A. Course Requirements in the Department of Counselor Education:**

**1. ELEMENTARY SCHOOL COUNSELOR:**

Education 552—Individual and Group Analysis	3 sem. hrs.
Education 554—Group Guidance	3 sem. hrs.
Education 558—Counseling Theory and Practice	3 sem. hrs.
Education 560—Counseling Practicum	3 sem. hrs.
(Experiences in the Practicum must be obtained at the elementary school level)	
<b>TOTAL</b>	12 sem. hrs.

**2. SECONDARY SCHOOL COUNSELOR:**

Education 552—Individual and Group Analysis	3 sem. hrs.
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## Counselor Education

*Education 556—Informational Services	3 sem. hrs.
Education 558—Counseling Theory and Practice	3 sem. hrs.
Education 560—Counseling Practicum (Experiences in the Practicum must be obtained at the secondary school level)	3 sem. hrs.
<b>TOTAL</b>	<b>12 sem. hrs.</b>

### B. Course Requirements in the Subject Matter area (minor):

#### 1. ELEMENTARY SCHOOL COUNSELOR:

Guided related subject matter courses in the area of psychological, physical and social development of psychological, physical and social development of children  
9 sem. hrs.

<b>TOTAL (after admission)</b>	<b>21 sem. hrs.</b>
<b>TOTAL Semester Hours</b>	<b>30 sem. hrs.</b>

#### 2. SECONDARY SCHOOL COUNSELOR:

Guided related subject matter courses other than professional education	9 sem. hrs.
<b>TOTAL (after admission)</b>	<b>21 sem. hrs.</b>
<b>TOTAL Semester Hours</b>	<b>30 sem. hrs.</b>

For a description of Counselor Education courses, see pages 58-71.

\*In some special cases Education 554, Group Guidance, may be used to meet this requirement.

## Master of Arts in Education with a Major in Student Personnel Services in Higher Education.

### I. Admission Requirements:

Admission to a graduate program in Student Personnel Services in Higher Education is based upon admission to the Graduate College and meeting all of the general admission requirements for the Master of Arts in Education.

### II. Curriculum

#### A. Professional Education (6 hours)

Education 500 and three semester hours selected from the following courses:

## Counselor Education

Education 576—Foundations of Education	3 sem. hrs.
Education 577—History & Philosophy of Education	3 sem. hrs.
Education 580—Curriculum	3 sem. hrs.
Education 675—Higher Education in America	3 sem. hrs.

#### B. Major (15-18 hours)

Education 550—Introduction to Guidance	3 sem. hrs.
Education 552—Individual and Group Analysis	3 sem. hrs.
Education 554—Group Guidance	3 sem. hrs.
Education 556—Informational Services	3 sem. hrs.
Education 558—Counseling Theory and Practice	3 sem. hrs.
Education 560H—Practicum in Student Personnel Services in Higher Education (Required)	3 sem. hrs.
Education 652—Research in Guidance & Counseling	3 sem. hrs.
Education 664—Organization and Administration of Student Personnel Services (Required)	3 sem. hrs.
Education 674—Seminar in Student Personnel Services in Higher Education (Required)	3 sem. hrs.

Note: Other courses may be selected from the Department of Counselor Education curriculum.

#### C. Distributed Minor (6-9 hours)

Courses may be selected from subject related areas such as the following:

Psychology  
Sociology  
Government  
Mass Communications  
Home Economics and Family Living

## Counselor Education

Economics  
Health and Safety

### Master of Public Service (Counseling option)

This degree is an interdisciplinary program consisting of offerings from several departments. It is designed to prepare individuals to serve in government positions which require administrative training as well as knowledge of the particular areas they are to administer.

*All candidates for the Master of Public Service degree (regardless of the option chosen) are required to complete a core area of nine to twelve hours including Government 540—Public Administration (which is required of all).*

The remaining hours of the core may be selected from the following courses:

Economics 550—Government Financial Policy and Administration  
Geography 580—Problems in Urban Geography  
Government 511—Seminar in State and Local Government  
Sociology 565—Studies in the Community  
Psychology 551—Social Psychology of Organizations

A candidate for the Master of Public Service in Counseling who has not completed a minor or the equivalent in psychology or sociology shall remove this deficiency by completing for non-graduate credit the necessary courses to meet the prerequisite in the behavioral sciences. This requirement must be satisfied prior to admission to the program.

In addition to the core requirements, students pursuing the counseling option must complete three hours of work from either psychology or sociology, as approved by the student's graduate advisory committee.

Counselor Education requirements include 18 semester hours selected from the following courses and approved by the candidate's graduate advisory committee:

Required of all Counselor Education majors in the Master of Public Service degree program:

Education 550—Introduction to Guidance  
Education 552—Individual and Group Analysis  
Education 558—Counseling Theory and Practice  
Education 560—Counseling Practicum

The six remaining hours may be selected from the following courses:

Education 500—Research Methods  
Education 501—Education Statistics

## Counselor Education

Education 530—Vocational Education  
Education 554—Group Guidance  
Education 556—Informational Services  
Education 650—Utilization of Community Resources  
Education 656—Seminar in Vocational Guidance and Occupational Adjustment  
Education 675—Higher Education in America

### Rank I in Guidance (See page 191)

#### Specialist in Education (Counselor Education Major)

The Specialist in Education (Ed.S.), offered through the Department of Counselor Education, is designed for students seeking a degree program beyond the level of study and specialization of the master's degree. A student may select one of three major emphases for his coursework:

School Counseling  
Public Service Counseling and Personnel Work  
Student Personnel Services in Higher Education

The Ed.S. degree requires a minimum of 30 semester hours of graduate course work beyond the master's degree. Specific courses and field experiences are designed to meet the individual student's needs. Course work is generally taken from three areas:

Foundations Core—Education and Research 6 sem. hrs.

Major Areas of Emphasis—School Counseling, or  
Public Service Counseling or Student Personnel Services in Higher Education 15-18 sem. hrs.

Cognate—Psychology, Sociology, Home Economics  
and Family Living and/or other related areas 6-12 sem hrs.

Each student selects a three member committee that directs the course work and required research project. A final oral examination is also administered by the committee.

#### Admission Requirements

The student must first be admitted to the Graduate College. For admission requirements see pages 13, 14.

The student must also be admitted to the department to pursue work toward the Ed.S. Students will be required to complete a personal

## Counselor Education/Education Courses

interview with a faculty member of the Department of Counselor Education. The purpose of the interview will be to review the student's professional and educational background as well as other pertinent data. The interview information will be presented to a departmental admission committee which will make the final recommendation regarding the student's eligibility.

### Graduate Courses in Education:

#### 500. Research Methods. Three hours.

Application of scientific method to educational research including theory of research, experimental design, techniques in data gathering and the interpretation of results. To include research reporting and bibliographical techniques.

#### 501. Educational Statistics. Three hours.

Graphic and tabular arrangement of data; measures of central tendency; measures of relationship.

#### 503. Organization of the Elementary School Curriculum. Three hours.

An advanced study of principles and practices in curriculum construction in the elementary school. Emphasis is placed on forces affecting curriculum and current innovations and trends.

#### 505. Advanced Materials and Methods in Modern Mathematics for Elementary Teachers. Three hours.

Mathematics for grades kindergarten through grade eight is taught with an attempt to blend the conceptual, the computational and application aspects of mathematics. Emphasis is placed on the structural aspects of mathematics and an attempt is made to show the "why" of arithmetic computation. An extension of Education 305.

#### 506. Seminar in Elementary School Science. Three hours.

A graduate seminar in methods and materials appropriate to the teaching of science in the elementary school.

#### 507. Advanced Materials and Methods in Social Studies. Three hours.

The study of elementary social studies concepts and objectives, classroom organization for instruction, current strategies in teaching content, and materials available in the area.

#### 508. Child Development and Child Study for Elementary Teachers. Three hours.

Prerequisite: Education 500 or permission of instructor.

A study of the educational implications of major theories of child development. The course includes an intensive study of a child or children with interpretations of the collected data in terms of educational techniques and practices.

#### 509. Curriculum Trends in Early Childhood Education. Three hours.

A study of current national and international issues and problems in preschool and early elementary education with emphasis on program planning for curriculum improvement.

## Education Courses

#### 510. Seminar in Early Childhood Education. Three hours.

A study of the research findings, as reported in scientific literature, about young children and early childhood education.

#### 516. Research and Issues: The Exceptional Child. Three hours.

An in-depth review of the characteristics and needs of children who are mentally retarded, gifted or behaviorally disordered or who have visual, speech or motor handicaps. Particular attention will be directed toward current issues relating to overall programming for these children in school and society.

#### 517. Problems in Mental Retardation. Three hours.

The course will examine the issues involved in mental retardation from the standpoint of etiology, manifestations and programming. Emphasis will be placed on the social implication of mental retardation as it affects the educational and economic system.

#### 518. Seminar: Problems in Special Education. Three hours.

Seminar for advanced students in special education. Designed to provide in-depth study of specific issues in special education. Research paper required of all students.

#### 519. Foundations of Reading Instruction. Three hours.

An analysis of the reading process with special emphasis upon the psychological and physiological foundations of the reading act. Required in the program leading to Standard Certification unless an advanced course in reading has been completed on the undergraduate level.

#### 520. Clinical Diagnosis of Reading Disabilities. Three hours.

A study of the nature and causes of reading disabilities and investigation of general and specific principles and approaches to diagnosis. Through actual case studies students will use both group and individual tests in diagnosis. The interpretation of these tests and recommendations for remediation will be developed.

#### 521. Correction of Reading Difficulties (Practicum). Three hours.

The three primary areas of study in this course are: Development of instructional techniques for use with individuals or groups involved in remedial reading instruction; investigations into materials and procedures for remedial reading instruction; participation in clinical experiences with remedial students.

#### 522. Investigations in Reading. One, two, or three hours.

A comprehensive investigation of the research and descriptive literature in the field of reading on an individual basis. Permission of the instructor required.

#### 523. Diagnostic Reading Procedures for Classroom Teachers. Three hours.

Emphasis is on practical methods of reading appraisal, diagnostic procedures, and materials essential for developing teaching strategies in reading instruction to meet the needs of children on individual, small group, and large group bases.

## Education Courses

**528. Seminar in the Teaching of Secretarial Subjects. Three hours.**  
Materials, methods, techniques, and devices for teaching typewriting, shorthand, and related skilled subjects. Required of graduate students majoring in business education. Review and application of research findings to this area.

**529. Seminar in the Teaching of Bookkeeping and Basic Business. Three hours.**  
Purposes, materials, methods, and techniques for teaching bookkeeping and basic business. Required of graduate students majoring in business education. Review and application of research findings to this area.

**530. Seminar in English Education. Three hours.**  
Prerequisite: Prior permission of the instructor.  
A graduate seminar designed primarily for experienced English teachers. Exploration of current methods and materials for junior and senior high school English courses; research and professional trends including rhetoric, psycholinguistics, lexicographics and transformational grammars.

**531. Seminar in Art Education. Three hours.**  
Prerequisite: Prior permission of the instructor.  
A graduate seminar designed primarily for experienced art teachers and art specialists (supervisors, consultants, coordinators, and directors of art). Exploration of curricular trends in art education; methods and materials of teaching and supervising art in the public schools.

**532. Seminar in Foreign Language Education. Three hours.**  
Prerequisite: Prior permission of the instructor.  
A graduate seminar designed primarily for experienced foreign language teachers. Exploration of trends in foreign language education methods and materials for teaching a foreign language at the secondary and advanced levels of instruction.

**533. Seminar in Industrial Arts Education. Three hours.**  
Prerequisite: Prior approval of the instructor.  
A graduate seminar designed primarily for experienced Industrial Arts teachers. Course content includes historical development, exploration of curricular trends and innovations, methods and materials of teaching, and current research and problems relating to the teaching of industrial arts.

**534. Seminar in Mathematics Education. Three hours.**  
Prerequisite: Prior approval of the instructor.  
A graduate seminar designed primarily for experienced secondary school mathematics teachers. Designed to make teachers aware of newer concepts in curriculum and methods of instruction, current research and problems in mathematics education.

**535. Seminar in Music Education. Three hours.**  
A graduate seminar designed primarily for experienced music teachers. A consideration of the historical, philosophical and psychological foundations of music education; the application of the principles of education to the music program. Major emphasis is placed on current trends in educational thought and their implications for instruction, supervision, administration and evaluation in music education.

## Education Courses

**536. Seminar in the Teaching of Physical Education. Three hours.**  
A detailed study and integration of traditional and recent techniques, methods, and knowledge in the practical application of scientific principles to the teaching of physical education and the coaching of sports and games. Opportunities for intensive investigation in specific pedagogical problems are afforded through the modalities of lectures, discussion groups, demonstrations, participation and use of audiovisual aids.

**537. Seminar in Science Education. Three hours.**  
Prerequisite: Prior approval of instructor.  
A graduate seminar primarily for experienced science teachers. Designed to keep the career science teacher up-to-date on the changes in the teaching of science. Areas considered include the history and comparative study of science teaching, curricular and course content changes, materials available, evaluation, methods in science teaching, professional organizations, and research in science education.

**538. Seminar in Social Studies Education. Three hours.**  
Prerequisite: Prior approval of the instructor.  
A graduate seminar designed primarily for experienced secondary school social studies teachers. Deals with newer concepts in curriculum and methods of instruction and with current research in social studies education.

**539. Seminar in Agriculture Education. Three hours.**  
Study of current and advanced problems in the organization, teaching supervision, administration and evaluation of agricultural education programs. Investigation, papers, and reports.

**540. Seminar in Home Economics Education. Three hours.**  
Prerequisite: Home Economics 572 or consent of instructor.  
A graduate seminar designed primarily for experienced home economic teachers. Current trends in family life education with emphasis on individualized instruction, team teaching and audio-visual aids and their use in improving learning.

**541. Seminar in School Libraries. Three hours.**  
A graduate seminar designed primarily for experienced school librarians. Areas considered include historical development, exploration of curricular trends and innovations relating to school library services, organizations for library services, materials and equipment available, physical facilities, professional organizations, and current research and problems in school librarianship.

**542. Seminar in Speech Education. Three hours.**  
A graduate seminar designed primarily for experienced teachers. Course content includes historical development, exploration of curricular trends and innovations and current research and problems related to the teaching of speech.

**547. Classroom Test Construction. Three hours.**  
Construction and use of classroom tests; application of testing programs to research problems in classroom teaching.

## *Education Courses*

**548. Research in Curriculum and Instruction. One to Three hours.**  
Research in instructional problems in reading, mathematics, science, social studies, and English. Research in the area of the elementary and secondary curriculum.

**550. Introduction to Guidance. Three hours.**  
A basic course designed to present an over-all view of the philosophy, organization, administration and operation of guidance and personnel services rendered at all education levels and to develop an understanding of the functions of personnel and guidance services in modern society.

**552. Individual and Group Analysis. Three hours.**  
A study of the methods, techniques and instruments used by guidance and personnel workers in the assessment and evaluation of individuals and groups. Attention is given to methods and administering, scoring, and interpreting both objective and subjective instruments. A survey is made of research design, statistics and computer utilization. Opportunities are provided for observation and participation in use of instruments.

**553. Field Laboratory Experience in Group and Individual Analysis. One hour.**  
This course is taken concurrently with Education 552. These directed activities are designed to provide field laboratory experiences in the theories and practices of the group and individual analysis area.

**554. Group Guidance. Three hours.**  
A study of the dynamics and processes within group structures; experiences in the formation of groups and their utilization in group counseling procedures and in the guidance aspects of career development and vocational choice. Opportunities are provided for observations and participation in group work.

**555. Field Laboratory Experience in Group Guidance. One hour.**  
This course is taken concurrently with Education 554. These directed activities are designed to provide field laboratory experiences in the theories and practices of the group guidance area.

**556. Informational Services. Three hours.**  
A study of the sources, types, and uses of educational and occupational information applicable to a program of developmental guidance and counseling.

**557. Field Laboratory Experience in Informational Services. One hour.**  
This course is taken concurrently with Education 556. These directed activities are designed to provide field laboratory experiences in the theories and practices of the informational services area.

**558. Counseling Theory and Practice. Three hours.**  
A study of the major contemporary theories of counseling along with the implementation of the various methods and procedures followed in individual and group counseling. Attention is also given to laboratory demonstration and participation.

## *Education Courses*

**559. Field Laboratory Experience in Counseling Theory and Practice. One hour.**  
This course is taken concurrently with Education 558. These directed activities are designed to provide field laboratory experiences in the theories and practices of the counseling area.

**560. Counseling Practicum. Three hours.**  
Provides for supervised experiences in actual work with students in the appropriate education setting in which the individual plans to seek certification or employment. These experiences include both guidance and counseling activities with students. This practicum also provides experiences for students planning to enter employment in governmental business and industry.

**561. Introduction to Rehabilitation Counseling. Three hours.**  
An overview of the basic counseling processes appropriate to rehabilitation. Includes consideration of the history, settings and survey of the functions of the Rehabilitation Counselor.

**570w. Workshops in Education. One-three hours.**  
Special short courses on educational problems.

**571. Junior High School Curriculum. Three hours.**  
This course provides an opportunity for teachers, supervisors, curriculum consultants, and administrators to study the educational programs especially designed for the young adolescent. Emphasis is placed on functions organization, planning and evaluation of the junior high/middle school curriculum with attention to special curriculum areas.

**576. Foundations of Education. Three hours.**  
An examination of past and contemporary factors in American education.

**577. History and Philosophy of Education. Three hours.**  
Survey of the historical roots of dominant philosophies of education.

**578. Basic Education for Adults. Three hours.**  
A graduate course designed especially for present and prospective teachers of adult basic education. This involves a study of the unique aspects of teaching the disadvantaged adult. Emphasis is given to an examination of the characteristics of and factors affecting the under-educated adult student, curriculum planning, methods of instruction and evaluation.

**579. Deprivation and Education. Three hours.**  
A study of the cultural and social forces which deprive students of the experimental tools necessary for successful classroom learning. An investigation of experimental education programs currently operating in impoverished areas.

**580. The Curriculum. Three hours.**  
The philosophy, the principles, the problems, and the practices of curriculum making.

**581. Organization and Administration of Occupational Education Programs. Three hours.**  
A study of the organization, administration, and implementation of occupational education programs as an integral part of the total education system.

## Education Courses

**582. Adult Education Program Planning Principles. Three hours.**  
This course deals with the basic principles of adult learning, decision making, and considerations for planning, executing and evaluating adult education programs.

**583. Accounting for Pupil Personnel. Three hours.**  
Problems of personnel accounting with special attention to the work of director of pupil personnel, and to records and reports incident to the Minimum Foundation Program.

**584. Comparative Education. Three hours.**  
Historical and international factors influencing the development of national systems of education; methodology and research approaches to international, comparative, developmental, and cross-cultural education.

**585. Fundamentals of School Administration. Three hours.**  
An introductory course concerned with the organization and administration of American schools. Principles of effective leadership are explored, and the roles and responsibilities of the various administrative—supervisory positions are examined.

**587. Programmed Instruction. Three hours.**  
Overview to the field of programmed learning; its relation to research in learning theory and to audio-visual communication. Students will engage in individual research and programming of curriculum content in the field of major competence.

**588. School Business Management. Three hours.**  
The principles of efficient and effective operation of the fiscal and business aspects of school administration are studied as they affect the educational program.

**590. Administration of School Personnel. Three hours.**  
The concept of the personnel administrator is one of allocating human resources to accomplish the purposes of the school organization.

**591. The Administration, Management and Finance of Federal-State Occupational Education Programs. Three hours.**  
This course involves a study of the types, sources, standards and management functions and procedures concerned with financing and operating numerous federal-state, occupational education programs.

**592. Program Planning in Occupational Education. Three hours.**  
This course involves methods of determining the need for occupational education programs, development of programs and curriculums, evaluating and improving existing programs, and annual and long-range program planning.

**593. Planning and Equipping Occupational Education Facilities. Three hours.**  
This course involves a study of techniques and procedures in determining occupational education facility needs, evaluating existing facilities, planning for new construction, renovation of existing buildings and maximum utilization of existing facilities.

## Education Courses

**594. Seminar on Leadership in Occupational Education. Three hours.**  
This course involves a study of principles and practices of leadership related to involving community resources in the development and operation of occupational education programs.

**595. Supervised Practice in the Administration of Occupational Education Programs. Three to six hours.**  
Supervised practice in the administration of occupational education programs in the work setting with emphasis on the development of administrative leadership and management skills.

**596. Readings in Education. One to Three hours.**  
Opportunity for advanced students in education to do reading and research in the field of major interest under the guidance of the major professor. Registration only by permission of the major professor.

**597. Problems in Administration and Supervision. One to Three hours.**  
Students identify and solve administrative problems of concern to them in their own school districts. Permission of instructor required.

**598. The Organization and Supervision of Student Teaching. Three hours.**  
Designed to acquaint teachers with the philosophy, theory, and practices which are essential in an effective student teaching program. Attention is given to both State and NCATE standards for teacher education, personal and professional relationships, common problems of student teachers and evaluation of student teachers.

**598V. The Organization and Supervision of Student Teachers in Vocational Education. Three hours.**  
Designed to acquaint teachers with the philosophy, theory and practices which are essential in an effective student teaching program. Attention is given to both State and NCATE standards in a vocational student teaching program.

**599. Thesis Research. One to Six hours.**  
Special research problems in education.

**601. Statistical Techniques for Experimental Designs in Education. Three hours.**  
A study of parametric and non-parametric statistical techniques applied to experimental and quasi-experimental research designs in education.

**603. Research and Experimentation Affecting the Elementary School. Three hours.**  
A study of major research studies and reports of experimentation that have had or are currently having an impact on the elementary school and its curriculum.

**620. Advanced Diagnosis of Reading Problems. Three hours.**  
A laboratory course designed to give experience in advanced testing materials in diagnosing severely retarded readers.

**621. Advanced Reading Correction Practicum. Three hours.**  
A laboratory course designed to give individual and small group instruction to children with severe reading problems.

**623. Organization and Administration of Reading Programs. Three hours.**  
Organizational patterns in various kinds of reading programs and their

## Education Courses

implementation on a system-wide as well as a local school basis. Permission of the instructor required.

**624. Seminar in Reading Problems. Three hours.**  
An in-depth study of the research and descriptive literature related to specific reading problems.

**625. Field Experience in Reading. Three, six, or nine hours.**  
Full time supervised experience in a public school system working with reading problems.

**650. Utilization of Community Resources in Guidance. Three hours.**  
This course provides for individual community surveys of all resources which may be used in the processes and procedures of guidance and counseling to assist students in the proper choice of educational programs to qualify them for careers of their own selection. Based upon surveys actually made, ways and means of utilization of resources surveyed are discussed and applied where practicable.

**652. Research in Guidance and Counseling. One to Three hours.**  
Research problems relating to the organization and administration of the guidance program.

**654. Mental and Aptitude Testing. Three hours.**  
Administration and interpretation of standard mental and aptitude tests as tools of educational and occupational guidance.

**655. Seminar in Guidance Services in the Elementary School. Three hours.**  
An exploration and determination of the guidance services for the elementary school that are congruent with the philosophy, curricula and student patterns within the elementary school; and the means for instituting and maintaining them in practice.

**656. Seminar in Vocational Guidance and Occupational Adjustment. Three hours.**  
This seminar provides for the intensive study of vocational guidance and occupational adjustment and application at all levels—schools and colleges, business and industry, and government.

**657. Readings in Contemporary Counseling. Three hours.**  
The reading and criticism of significant books and research articles in counseling theory, theory application and innovative techniques. The course is intended to provide indepth awareness of recent trends in counseling.

**658. Seminar in Guidance and Counseling. Three hours.**  
The purpose of this seminar is to provide an opportunity for the systematic involvement of the student in the presentation and critical discussion of research and important studies made in the area of counseling and guidance. Both theoretical and practical criticism of relevant research studies in the field of guidance are emphasized.

**659. Theories of Career Development and Vocational Choice. Three hours.**  
This is an advanced course designed for those teachers and counselors who wish to study and apply theories of vocational development, sociological aspects of vocational choice and entry, development of interests and aspiration levels, and the research relating to entry into work, advancement in

## Education Courses

work, satisfaction in work, dissatisfaction in work, job changing, values and attitudes about work, and related topics. The course is structured around the major theories of vocational development as they relate to educational progress.

**660. Organization and Administration of Guidance Services. Three hours.**  
This course provides an analysis of the guidance services in elementary and secondary schools and the appropriate organization for making effective these services. Attention will also be given to the basic principles and postulates underlying the justification of guidance services. Emphasis is placed upon problems such as: initiating guidance programs; developing related services; staffing; physical facilities; providing adequate budget; etc.

**661. Seminar in Disability and Rehabilitation Counseling. Three hours.**  
An examination of psychological, physiological and sociological impacts of various types of congenital and traumatic disabilities. Emphasis is placed on appropriate roles in the rehabilitation counselor's role.

**662. Advanced Counseling Practicum. Three to six hours.**  
The purpose of the advanced counseling practicum is to function as a training facility for supervised on-campus experiences in the counseling of elementary, junior and senior high school students, and their parents. Emphasis is placed upon educational, vocational, and social-personal planning and problems. The practicum also provides for an understanding of and for practice in relating the other main guidance services (individual inventory, information services, placement, and follow-up) to the heart of the guidance process . . . counseling. It also involves opportunities for experience in providing consultive services to professional people working with children who might be teachers, principals, counselors, agency workers and others.

**663. Counseling the Exceptional Child and Parent. Three hours.**  
The content of the course considers first the general concepts of exceptionality such as statistical overview, the myths of disability and societal stereotypes. The counseling and guidance needs and techniques of the exceptional child are considered next. Particular attention is directed to referral, resources, staffing and coordination efforts of the counselor. The parent of the exceptional child, their needs and effective counseling techniques comprise the third major area of content.

**664. Organization and Administration of Student Personnel Services in Higher Education. Three hours.**  
The content of the course is devoted to the history and philosophy of student personnel services and the scope of personnel work. The professional nature of the personnel worker is emphasized. Services covered are those dealing with records; admission, readmission, and retention of student; student conduct; orientation; housing; extra curricular activities; financial aid; counseling and advising; health; and placement.

**674. Seminar in Student Personnel Services in Higher Education. Three hours.**  
This course is an advanced seminar in the philosophy, organization, administration, and current practices in student personnel work.

## *Education Courses*

### **675. Higher Education in America. Three hours.**

An examination of the history, purpose, philosophy, organization, curriculum, student personnel services, financial services, and trends of the American system of higher education.

### **676. Public School Finance. Three hours.**

Local school finance; school budgets, accounting for school money. Unit costs and cost accounting; accounting for school property, insurance, business procedure and office practice.

### **677. School Law. Three hours.**

Clinical study of existing school code; judicial decisions; administrative problems and school code.

### **678. School Plant Administration. Three hours.**

Prerequisite: Education 585.

Educational needs and school building planning; architect service; standards of construction; types of buildings; building surveys.

### **679. Seminar in Foundations of Education. Three hours.**

An inter-disciplinary seminar for advanced students. Registration by permission of instructor.

### **680. Advanced Studies in Elementary School Curriculum. Three hours.**

Intensive analysis of the educational content and methodology of the elementary school curriculum, including the experimental approach to the curriculum.

### **681. Secondary School Curriculum. Three hours.**

Critical issues in the secondary school curriculum and ways of resolving these issues for an improved program of secondary education.

### **682. School-Community Relations. Three hours.**

A study of the background, need, and techniques of acquiring a wholesome working relationship with the laymen. Special emphasis is placed on lay involvement in school programs.

### **683. Seminar and Curriculum Development. Three hours.**

An advanced seminar for the consideration of factors influencing curriculum development. Registration by permission of instructor.

### **684. Supervision of Elementary School Subjects. Three hours.**

Application of principles of supervision to problems of instruction in the elementary grades.

### **686. Principles of Supervision. Three hours.**

The instructional side of school administration; organization, problems, principles, and techniques of improving teachers in service.

### **688. Evaluating the Elementary School. Three hours.**

A study of the techniques of evaluation of the elementary school. Special emphasis will be given to approaches to evaluating the school for accreditation purposes as well as for general school improvement programs. This course is designed specifically for those preparing for administrative and/or instructional leadership roles.

### **691. Elementary School Organization and Administration. Three hours.**

Prerequisite: Education 585.

Problems of organization and administration of elementary schools with

## *Education Courses*

special emphasis on the problems of instruction; classification, promotion, and guidance of pupils; custodial services, and relationships with patrons and community.

### **692. Secondary School Organization and Administration. Three hours.**

Prerequisite: Education 585.

Problems of organization and administration of secondary schools with special emphasis on programs of instruction; classification, promotion, and guidance of pupils; relation of principal to non-professional personnel; and relationship with patrons and community.

### **693. Programs of Continuing Education. Three hours.**

A general survey of adult education with emphasis upon the philosophy, organization and administration of continuing education programs.

### **694. Seminar in Educational Administration. Three hours.**

Emphasis on current research and identification of research needed in educational administration. For advanced graduate students in administration and supervision.

### **695. School Surveys. Three hours.**

Techniques of making school surveys; gathering and interpretation of data; evaluation of educational programs, evaluation of facilities; prediction of future enrollment, and presentation of school authorities.

### **696. Advanced Theory in Education Administration. Three hours.**

Theoretical approaches to the study of administration and leadership with particular reference to theories of education administration. For advanced graduate students. Registration by permission of instructor.

### **697. Research in Administration and Supervision. One to three hours.**

Special research projects in administration and supervision.

### **698. Practicum in Administration and Supervision. Three to six hours.**

Internship of other field experience for administrators and supervisors. Permission of instructor required.

### **699. Specialist in Education Degree Project. One to six hours.**

The Specialist Project, a form of independent study, may be a field project, a creative study, or a more formal experimental type of research culminating in a scholarly report.

**The following 400-level courses may be taken for graduate credit:**

### **404G. Adult Education: Historical and Contemporary Perspectives. Three hours.**

The course is designed to assist the student to develop an understanding of the importance and function of adult education programs in modern society, including the potentialities for continuous learning and the factors and forces affecting it. Emphasis will be given to the historical development, philosophical foundation, interdisciplinary nature, and present-day concerns of adult education.

### **412G. Materials and Methods in Preschools. Three hours.**

Prerequisites: Psychology 220, Education 310.

Emphasizes the organization of educational programs for kindergartens and nursery schools, the planning and using of materials in preschool programs,

## Education Courses

the selection and care of materials, methods according to individual and group needs, and interest of young children. Guided observations will be made in approved preschool programs. Two lecture periods and a two-hour lab. Required for Kindergarten certification endorsement.

### **415G. Methods and Materials for Teaching the Trainable Mentally Retarded Child. Three hours.**

### **420G. Reading in the Primary Grades. Three hours.**

Prerequisite: Education 220.

A second reading course designed to offer a detailed view of the principles and methodologies in use today at the primary (K-3) school levels.

### **421G. Reading in the Intermediate Grades. Three hours.**

Prerequisite: Education 220.

A second reading course designed to offer a detailed view of the principles and methodologies in use today at the intermediate (4-6) school levels.

### **440G. Diagnostic Instructional Planning. Three hours.**

Prerequisite: Sequential enrollment in Special Education Program.

An intensive approach to the diagnosis and remediation of specific impairments to the learning process in children and youth. The course will familiarize the student with the use of various tests, instructional planning and evaluative methods appropriate to children with learning disabilities.

### **441G. Methods and Materials in Teaching the Retarded. Three hours.**

Prerequisite: Sequential enrollment in Special Education Program.

Modern trends in teaching the mentally retarded with emphasis on objectives, methodology and materials in effective curriculum planning for the retarded.

### **442G. Methods and Materials in Teaching the Retarded Young Adult. Three hours.**

Prerequisite: Sequential enrollment in Special Education Program.

A focus on methodology, materials and curriculum for the older retarded individual. Emphasis will be on programming which will lead to successful vocational and social adjustment for the young adult retardate.

### **444G. Reading Instruction in Junior and Senior High Schools. Three hours.**

The principles, psychology and methodologies for teaching the general and the specialized reading skills in the secondary grades.

### **445G. Audio-Visual Materials and Methods. Three hours.**

Instruction and laboratory experience in the operation and maintenance of audio-visual equipment; theory relative to the best practices in audio-visual techniques.

### **446G. Selection, Acquisition and Evaluation of Non-Print Material. Three hours.**

Prerequisite: Permission of instructor.

This course will include instruction and experiences to enable students to locate sources of supply for non-print materials and to identify and use appropriate selection aids. The course will also be concerned with acquisition procedures and evaluative techniques appropriate to non-print materials.

## Education Courses/Economics

### **455G. The Junior High School. Three hours.**

This course attempts to develop an understanding of the junior high/middle school and its role in American education. Consideration will be given to the philosophy, functions, and total program of early adolescent education, including curriculum, guidance, student activities, personnel, and administration.

### **477G. Materials and Methods in Library Sciences. Three hours.**

Prerequisites: Education 280, Psychology 220.

Laboratory experiences related to library science, affording the prospective librarian additional insight into strengthening and broadening future experiences in library science.

## ECONOMICS

### **Graduate Faculty:**

Professors: Cann (Head of Department), Yeager

Associate Professors: Lile, Wassom

Assistant Professor: Fost

### **Degrees Offered:**

Master of Arts in Economics; Master of Arts in Education (Economics major or minor); Master of Public Service (Regional Development option)

**Master of Arts in Economics** The Master of Arts in Economics program is designed to prepare students for further graduate work leading to the Ph.D. degree, for teaching at the junior college level, or for employment in business or government.

In order to pursue the M.A. in Economics the student must secure good standing admission to the Graduate College, a satisfactory score on the Graduate Record Examination, and submit an official transcript showing the completion of at least 21 semester hours, or equivalent, in undergraduate courses in economics with a 2.7 grade point average from an accredited college or university. Students having less than a 2.7 average may be admitted on a probationary basis upon recommendation of the Department of Economics. The applicant is expected to have completed six semester hours in intermediate economic theory (microeconomics and macroeconomics) beyond the principles level, three hours in elementary statistics, and have an appropriate background in mathematics or quantitative skills. Deficiencies in undergraduate preparation may be removed by satisfactorily completing the appropriate courses during the first semester(s) after admission.

Foreign students must demonstrate the ability to use English and submit an acceptable score on the Test of English as a Foreign Language (TOEFL).

The student must complete the following steps to be eligible for graduation:

1. Earn 30 hours of credit with a B average.
2. Demonstrate skill in doing research, the ability to use research tools, or reading ability in a foreign language.
3. Pass a final written or oral examination covering the thesis and/or major areas of study.

Steps one and two may be completed under either Plan A or Plan

B. Plan A: 30 hours with thesis.

1. 24 hours of approved course work in Economics
2. 6 hours of thesis credit for a research project and written report

Plan B: 30 hours without thesis

1. 24 hours of approved course work in Economics
2. In lieu of thesis six additional hours of course work in areas selected from Economics, Mathematics, Computer Science, or Business Administration; approval of advisor required.

All students are required to complete a nine-hour core consisting of Economics 520, 525, and either 464 or 465. The remaining 15 to 21 hours of course work may be selected from the list of courses approved for graduate credit in economics. Normally, no more than six hours of 400-level courses, not including Economics 464 and 465 may be included, and no more than six hours may be taken outside the Department of Economics.

#### Master of Arts in Education (Economics major or minor)

This program provides additional graduate work in Economics within the program designed for the public school teacher. The student following this program must meet all requirements for Standard High School certification. The student majoring in Economics may take a minimum of 18 semester hours or a maximum of 21 hours in the Department of Economics. The student minoring in Economics may take a minimum of 12 hours or a maximum of 15 hours in Economics. The remaining hours of course work will be taken in professional education.

#### Master of Public Service (Regional Development option)

This degree is an interdisciplinary program consisting of offerings from several departments. It is designed to prepare individuals to serve in government positions which require administrative training as well as knowledge of the particular areas they are to administer.

*All candidates for the Master of Public Service degree (regardless of the option chosen) are required to complete a core area of nine to 12 hours including Government 540—Public Administration (which is required of all).*

The remaining hours of the core may be selected from the following courses:

Economics 550—Government Financial Policy and Administration  
 Geography 580—Problems in Urban Geography  
 Government 511—Seminar in State and Local Government  
 Sociology 565—Studies in the Community  
 Psychology 551—Social Psychology of Organizations

The Regional Development option is interdisciplinary in character, drawing on the fields of economics, government, geography, and sociology, and is designed to prepare students for public service employment with governmental agencies at local, state, and federal levels, public utilities companies, area development districts, Chambers of Commerce, industrial development corporations, and other public and private organizations dealing with the development of geographic, economic, and political regions.

Applicants must have an undergraduate degree from an accredited college or university and have satisfactorily completed course work in the disciplines involved in this program with at least a 2.5 grade point average. In addition, applicants must meet the minimum score requirement on the Graduate Record Examination established by the Graduate College. Students planning on pursuing this program must have had the equivalent of two courses in Principles of Economics and one course in Statistics at the undergraduate level. An otherwise acceptable student with undergraduate deficiencies in the disciplines represented may arrange to remove those deficiencies by taking the appropriate courses during the first semester after admission.

Students enrolled under the Regional Development option will be required to complete at least 30 semester hours of work within the approved graduate curriculum, including the nine to 12 hour core, under either Plan A or Plan B.

## Economics

### Plan A: 30-hour program

1. 24 hours of course work
2. 6 hours of thesis credit

### Plan B: 30 hours of course work

The thesis will consist of a research project and report approved by the program advisor and written under a faculty advisor in one of the disciplines represented. In addition to the core requirements of the program, all students enrolled under the Regional Development option will be required to complete Economics 475, Urban and Regional Economics, and 540, Land Economics.

The following graduate courses are applicable to the Regional Development option:

Econ. 540. Land Economics

Econ. 570. Economic Development

Econ. 598. Directed Studies (generally in the area of regional development)

Econ. 699. Thesis Research

Econ. 470. Economic Growth and Development

Econ. 475. Urban and Regional Economics

Georg. 584. Advanced Planning

Geog. 479. Industrial and Commercial Geography

Bus. Ad. 500. Business, Government and Law

Bus. Ad. 510. Organization Theory

## Graduate Courses in Economics:

### 501. Survey of Public Theory. Three hours.

Prerequisite: Economics 310.

A study of the theoretical aspects of government finance and its influence on public and private decision making. Emphasis is on the impact, incidence, and effects of alternative tax instruments at local, state and federal levels.

### 502. Seminar in Economic History. Three hours.

Prerequisite: Consent of instructor.

Concentrated research and writing projects in the economic history of the United States and/or western Europe.

### 520. Advanced Microeconomic Theory. Three hours.

Prerequisites: Economics 302 or consent of instructor.

An analysis of advanced topics and the results of recent research in microeconomic theory in the areas of consumer behavior, price and market theory, production, distribution, and welfare.

## Economics

### 525. Advanced Macroeconomic Theory. Three hours.

Prerequisites: Economics 303 or consent of instructor.

An analysis of advanced topics and the result of recent research in macroeconomic theory dealing with consumption, savings, investment, interest, and money.

### 530. Monetary Theory. Three hours.

Prerequisites: Economics 250 or 450.

Advanced treatment of classical, neoclassical, Keynesian, and modern quantity theory, and a consideration of the effects of alternative monetary policies on the national economy.

### 540. Land Economics. Three hours.

Prerequisite: Consent of instructor.

An analysis of factors determining the allocation and use of land and natural resources with emphasis on the application of economic theory to problems of land use and the determination of land values in rural and urban areas.

### 550. Government Financial Administration. Three hours.

Prerequisites: Economics 310 or 410 or consent of instructor.

Deals with the institutional and economic factors associated with the management of government revenues and expenditures, including such topics as capital budgeting, public debt, and fiscal policy.

### 560. Seminar in Economic Theory. Three hours.

Prerequisites: Economics 520 and 525.

An intensive study of selected theoretical topics in economics with emphasis on a comparison of recent developments and research findings with conventional propositions.

### 570. Economic Development. Three hours.

Prerequisite: Economics 470 or consent of instructor.

A study of the significant economic, social, and institutional factors associated with economic development in the less developed countries, emphasizing the identification of barriers to the development process.

### 575. Advanced International Economics. Three hours.

Prerequisites: Economics 302 and 380, or consent of instructor.

The standard (Heckscher-Ohlin) two country, free-trade model and its variants. Theory of the effect of tariffs and other forms of trade intervention. Customs unions. Trade and economic growth. Balance of payments and the market for foreign exchange. Capital movements and transfer problems.

### 598. Directed Studies. Three hours.

Prerequisite: Consent of instructor.

An intensive investigation by students of selected economic topics in theory, monetary and fiscal theory and policy, economic development and fluctuations, economic history, economic thought, and other areas.

## *Economics*

### **599. Economic Research and Report Writing. Three hours.**

Prerequisite: Consent of instructor.

Research projects dealing with the evaluation of primary data, and training in the techniques of formal research reporting and writing.

### **699. Thesis Research. One to six hours.**

**The following 400-level courses may be taken for graduate credit:**

### **410G. Economics of Government Expenditures. Three hours.**

Prerequisites: Economics 206 and 302.

A detailed examination of various aspects of government spending including such topics as the theory of public expenditures, externalities, voting mechanisms, inter-governmental aid, budget making, program budgeting and cost-benefit analysis.

### **430G. Comparative Economic Organization. Three hours.**

Prerequisites: Economics 302 and 303 or consent of instructor.

An analysis of the theories underlying different economic systems. Emphasis is placed on the ideological basis for various forms of economic organization, alternative ways of organizing economic activity and actual and potential degrees of accomplishment.

### **440G. American Industry: Structure, Performance, and Policy. Three hours.**

Prerequisites: Economics 302 and 303 or consent of instructor.

A course in applied price theory in which the structure, behavior and performance of American industry is evaluated in the light of public and private social goals. Public policy toward the promotion of competition and the control of monopoly will be examined.

### **450G. Central Banking Theory and Monetary Policy. Three hours.**

Prerequisites: Economics 250 and 303.

A course in applied monetary theory and policy. Emphasis will be placed on the results of modern research and empirical findings.

### **460G. Business and Economic Fluctuations. Three hours.**

Prerequisites: Economics 302 and 303.

A study of the causes, patterns of development and consequences of economic fluctuations in a modern industrialized economy. Emphasis is placed on macroeconomic techniques of cycle analysis to determine the dynamic time path of income, output, and employment.

### **464G. Introduction to Mathematical Economics. Three hours.**

Prerequisites: Economics 302 and 303.

The application of mathematics to economic analysis, covering algebraic and functional relationships, differential and integral calculus, differential and difference equations, matrix algebra, linear programming and game theory.

### **465G. Introduction to Econometrics. Three hours.**

Prerequisites: Economics 306 or consent of instructor.

Presents the use of statistical methods in measuring and testing economic relationships. Emphasizes the use of ordinary least squares in estimating

## *Economics/Educational Foundations and Curriculum*

single equation models. Topics included are dummy variables, lagged variables, and such problems as autocorrelation, heteroscedasticity, multicollinearity and identification.

### **470G. Economic Growth and Development. Three hours.**

Prerequisites: Economics 302 and 303.

An introduction to the study of the development process especially in the less developed countries. The course considers the basic problems and issues of economic development, economic models used to analyze the development process and planning for development.

### **475G. Urban and Regional Economics. Three hours.**

Prerequisites: Economics 202, 203 and 206 or consent of instructor.

Considers the fundamental economic relationships within and between economic and political units in the United States. Emphasis is on applied economic analysis dealing with the characteristics of a region, the urban center and employment.

### **490G. Economic Thought to 1870. Three hours.**

Prerequisites: Economics 202 and 203 and consent of instructor.

The origin and development of economic thought through Marx with emphasis on the contribution of political economy to the behavioral sciences.

### **491G. Economic Thought since 1870. Three hours.**

Prerequisites: Economics 202 and 203 and consent of instructor.

The further development of economic thought from the marginalists to the present.

## **EDUCATIONAL FOUNDATIONS AND CURRICULUM**

### **Graduate Faculty:**

Professors: Broach, C. Clark, Deeb, Kreisler, Sandefur

Associate Professors: Constans, Harryman, Rees

Assistant Professor: Adams

The Area of Educational Foundations and Curriculum, through its instructional program, provides courses and experiences which contribute to the improvement of instruction of professional teachers and to the improvement of educational programs in elementary and secondary schools. Specifically provided are:

(1) Core Courses for various graduate programs in teacher education.

(2) Specific courses for Rank II and Rank I certifications for teachers and school leaders.

(3) General courses which students from various programs may elect.

Since the Area of Educational Foundations and Curriculum has no major or minor program, it has the role of providing the service courses for all graduate programs in teacher education. It also serves the role of administering those courses which are part of a developing program not yet assigned departmental status.

**For graduate courses in Foundations and Curriculum, see pp. 58-71.**

## **ELEMENTARY EDUCATION**

### **Graduate Faculty:**

Professors: Hardin, Hicks, Sleamaker (Head of Department)

Associate Professors: Munson, Stevenson, Watts

Assistant Professors: Otto, Ritter, S. Taylor

### **Degrees Offered:**

Master of Arts in Education (Elementary Education major); Specialist in Education for Elementary Teachers.

#### **Master of Arts in Education (Elementary Education major)**

The Standard Elementary Certificate, valid for 10 years, shall be issued to a person who meets the requirements of law and general regulations of the State Board of Education and files a transcript of credits showing the completion of the four-year curriculum for the training of elementary teachers as prescribed by the Council on Public Higher Education and who, in addition thereto, completes the requirements for a Master's Degree in a standard graduate school, as prescribed.

The curriculum leading to the Standard Elementary Certificate is based upon the following:

1. Completion of the requirements for the Master's Degree which shall be based upon at least 30 semester hours of graduate work. For students who write a thesis, a minimum of 24 semester hours shall be required.
2. At least 15 of the 30 hours required for the degree must be in courses open only to graduate students. (This includes the nine hours required in professional education).

\*Application Form (Form A) \_\_\_\_\_ following Index

3. At least 12 semester hours of the required work shall be in professional education. Nine hours of the required 12 must be in courses open only to graduate students and must be selected from the following areas: (a) a general study of curriculum development, (b) research methodology\*, (c) advanced study in reading (required unless waived on basis of previous advanced study in reading), (d) advanced study in human growth and development, (e) the psychology of learning, (f) a seminar in instruction devoted to the method of teaching, (g) foundations in education-sociological, psychological, philosophical, historical. These courses will be chosen according to the student's needs after consultation with the student's graduate advisor in education.
4. At least 12 semester hours of the total hours required for the degree shall be non-professional subject matter courses. These courses must be selected from the fields of study required in general education and/or in subject matter courses used in partial fulfillment of the four-year elementary curriculum for elementary certification.

### **Special Emphases**

Within the guidelines outlined above an elementary teacher may elect an area of specialization. Some of those programs available are:

1. Early Childhood Education.
2. Reading.
3. Special Education (emphasis in teaching the educable, retarded child)—See pp. 166-68.
4. Elementary Librarian (Provisional Certification)

The student in elementary education may take a distributed subject matter graduate minor which may include courses in as many as three different subject fields.

#### **Specialist in Education (Ed.S.) Degree for Elementary Teachers**

This degree, offered through the Department of Elementary Education, is a post-Master's degree designed to provide opportunity for the advanced graduate student to improve the foundations and competencies for teaching. The degree program may also be structured to meet Rank I requirements under Kentucky's minimum

\*Education 500, Research Methods, is required of all students.

### Elementary Education

foundation program of education. The Ed.S. Degree in Elementary Education may be developed, under advisement, to provide one of the following emphases or specializations:

1. Reading (Reading Specialist Certificate)
2. Early Childhood Education (Endorsement of Provisional or Standard Elementary Certificate for teaching kindergarten)
3. General curriculum and instruction

#### Admission Requirements:

In addition to the admission requirements listed on p. 14, the following Departmental requirements must be met:

1. the student must have three years of teaching experience at the elementary school level. (Up to two years of elementary school experience may be waived in favor of equivalent experience.)
2. the student must submit four letters of recommendation (instead of the three mentioned on p. 14), two from graduate faculty members and two from professional associates in administrative and/or supervisory roles.

#### Program Requirements:

In addition to program requirements outlined below, see p. 13.

The program for each individual student shall be designed so that with a consideration of his previous experience and preparation the objectives of the Specialist in Education Degree in Elementary Education are met. The distribution of courses shall meet the following minimums:

Foundation Area—6 semester hours

Cognate Area—6 semester hours

Specialization—12 semester hours

After the student has been admitted to the Graduate College, The College of Education, and the Department of Elementary Education, he will select a Committee from the Graduate Faculty. The student's Committee will work with the student on development of his program, supervise his research project and administer the final comprehensive examination(s).

For graduate courses in Elementary Education, see pp. 58-71.

## ENGINEERING TECHNOLOGY

#### Graduate Faculty:

Professor: Rowe

Engineering Technology courses may serve as a part of both the Science Area major and the Health minor in the Master of Arts in Education and may be used in other graduate degree programs when considered appropriate by the student's advisory committee.

**The following 400-level courses may be taken for graduate credit:**

**405G. Atmospheric Pollution: Sources, Effects, Monitoring and Control. Three hours.**

Prerequisites: Chemistry 101 or equivalent and consent of instructor.

The course content will include sources of air contaminants; effects on people, animals, plants and materials; monitoring air pollutants; the legal aspects of air pollution; and air pollution control. The laboratory portion will deal with sampling and analyses for gases and particulate. Lecture two hours; lab two hours. Cannot be used for ET Major.

**410G. Water Supply. Four hours.**

Corequisite: Engineering Tech. 352.

The planning and operations of water supply systems. Population predictions, hydrologic considerations of surface and ground water sources; the design of collection, treatment and distribution systems; water quality criteria; emphasis is placed on theory and significance of laboratory test with respect to plant and water quality. Lecture three hours; lab three hours.

**420G. Waste Water Treatment. Four hours.**

Corequisite: Engineering Tech. 352.

The theory, design and operation of waste water collection and disposal systems, considered as unit operations and unit processes. Functional design of storm and sanitary sewers, sewage works and appurtenances. Chemical and biological characteristics of waste water. Lecture three hours; lab three hours.

**430G. Radiological Health. Three hours.**

Prerequisites: Physics 232 and Biology 148.

This course includes the fundamentals of atomic, nuclear and radiation physics as related to radiological health. Fundamentals of detection of ionizing radiation, including X and gamma radiations, alpha and beta particles and neutrons are covered. Counting techniques, statistics, radiation interaction, biological effects, radiation hazards (maximum permissible concentration and dose) and radioactive waste disposal are integrated into lecture and laboratory exercise. Lecture two hours; lab three hours.

**440G. Industrial Hygiene. Three hours.**

Prerequisites: Chemistry 101 or equivalent.

It is the purpose of this course to present the fundamental principles of

## Engineering Technology/English

occupational health and the recognition, evaluation and control of occupational health hazards. The course agenda includes lectures, demonstrations, and field trips on such topics as the Occupational Safety and Health Act, 1970; industrial health hazards; reaction of the respiratory system to particulate and gases; mode of action of organic and inorganic chemicals such as lead and mercury; pneumoconiosis; noise measurement and control; evaluation of heat stress; electromagnetic spectrum; ionizing radiation; industrial ventilation; and instrumental methods such as x-ray diffraction, gas chromatography and atomic absorption.

### 470G. Industrial Waste Treatment. Three hours.

Prerequisites: Chemistry 101 or equivalent.

Corequisites: Engineering Tech. 352.

Studies of the characteristics and composition of wastes from industrial processes and their effects on the environment. Methods of sampling and analysis of industrial waste and remedial measures for treatment and disposal are covered. Unit operations and processes are included in remedial measures.

### 480G. Solid Waste Treatment. Three hours.

Prerequisites: Chemistry 101 or equivalent; six hours of biology.

This course is a study of the extent and characteristics of the solid waste problem. Both current practice and new developments in management of solid waste are presented. Lectures are supplemented by field trips and guest and student presentations. The course includes physical and chemical composition of refuse disposal, collection methods, and disposal methods such as sanitary landfill, incineration, composting, salvage and reclamation. The public health significance of solid waste management is emphasized.

### 490G. Sanitation. Three hours.

Prerequisite: six hours Biology.

This course is designed to present the sanitary principles involved in the processing and distribution of milk and milk products, meat, shellfish and other foods. Field trips to local food preparation establishment, to milk and food processing plants, to swimming pools and housing projects such as model cities are integrated with laboratory testing for the isolation and identification of microorganisms involved in food-borne disease and outbreaks. Special emphasis is placed on the state and federal sanitation codes. Lecture two hours; lab three hours.

## ENGLISH

### Graduate Faculty:

Professors: Bowen, K. Clarke, M. Clarke, Heldman (Head of Department), Little, McCelvey, W. McMahon, Wood

Associate Professors: Davis, Fridy, D. McMahon, Miller, Steele, Ward

## English

Assistant Professors: Allmon, Bruner, Glaser, Survant

Folklore: Professors: K. Clarke and Montell

### Graduate Degrees:

Master of Arts in English; Master of Arts in Education (English major or minor, Folk Studies minor); Specialist Degree in College Teaching (English major); Master of Arts in Folk Studies.

A student interested in working toward one of these degrees should confer with the Graduate Advisor in the Department of English.

### Master of Arts in English

This program is designed for students who are preparing to teach in secondary schools or junior colleges, or who expect to continue graduate work toward an advanced degree at another institution.

In addition to admission requirements of the Graduate College, a candidate must submit a transcript showing a minimum of 27 hours of undergraduate English with a GPA of not less than 3.0. He must also present a satisfactory GRE aptitude score.

To complete this program, a student must do a minimum of 24 semester hours of classwork (six of which may be in a related field such as drama, English history, foreign literature, mass media, philosophy and speech). He must also write a thesis, which will carry six semester hours of credit, making the minimum for the degree 30 semester hours.

A candidate for the M. A. in English must also meet a research tool requirement in addition to the 30 hours required for the degree. He may meet this requirement by demonstrating proficiency in a foreign language or by earning 33 graduate hours in English including English 520, and offering English 520 as his research tool.

The student must also pass a final examination over courses, thesis, and related materials. Early in his graduate program, the student should obtain from the Graduate Advisor in English a copy of the Reading List for the M. A. Oral Examination, which specifies the topics and works on which the student will be examined.

### Master of Arts in Education (English major or minor)

The major is designed primarily for secondary teachers who wish to acquire a strong academic background for the effective teaching of English. The degree qualifies the student for the Standard High School Certificate.

Requirements for the major in English include 18 to 21 hours in English, nine to 12 hours in education, and a final examination on

## English

courses and related materials specified in the Reading List for the M. A. Oral Examination. The thesis is optional.

At the beginning of the graduate program, the student should obtain a copy of the reading list from the Graduate Advisor in English.

Students minoring in English take a maximum of 15 hours or a minimum of 12 hours in that department.

### Specialist Degree in College Teaching (English Major)

This program is designed to prepare students more fully for teaching at the junior college and four-year college levels than the Master of Arts in English and the Master of Arts in Education do. It is intended for students who want extensive preparation for a teaching career but do not want the heavier research emphasis of a traditional Ph.D. program.

Requirements for admission include a master's degree from an accredited institution, a grade point average of at least 3.25 in the first 30 hours of graduate work, at least 18 hours of graduate work in English with a minimum GPA of 3.25, a minimum composite GRE aptitude score of 800, and three letters of recommendation from graduate faculty members and professional associates.

The thirty-hour degree program includes traditional courses and seminars in English, a teaching internship, a specialist project resulting in a scholarly paper, and a final comprehensive examination. The student may earn six to nine hours in a related field such as history, folklore, philosophy, literature in a foreign language, or drama, provided that he will accumulate at least 48 graduate hours in English, with 21 hours concentrated in either American literature or in English literature.

### Master of Arts in Folk Studies

The interdisciplinary graduate program in Folk Studies is designed for students who desire to teach at the college level; for teachers who desire to add new vistas of public school classroom instruction in the arts, humanities, and social sciences; as enrichment for persons interested in employment with public agencies in such areas as welfare and social work, and in school administration; for those persons who desire to continue their education on a personal or avocational basis; and for students who expect to pursue doctoral studies at another institution.

Since folklore deals with the entire traditional culture of man as manifested in his customs and beliefs, verbal traditions and material cultural forms, the discipline has close affinities with literature, anthropology, sociology, history, geography, philosophy, and psychology. A

## English

good undergraduate record in any of the disciplines listed will be acceptable for admission to graduate study in Folk Studies. The student without sufficient background may be required to take additional courses.

A minimum of 12 hours of folklore at the 500 level (this must include English or Anthropology 577 and 578), plus 12 additional hours of folklore or selected courses in related disciplines, plus six hours of thesis credit, constitutes the minimum requirements for the program. The thesis requirement may be satisfied by substituting an extended, fully-documented collection project.

A candidate for the M. A. in Folk Studies must also meet a research tool requirement in addition to the 30 hours required for the degree. He may meet this requirement by exhibiting proficiency in a foreign language or by earning 33 graduate hours in Folk Studies including English 578, and offering English 578 as his research tool. He must also pass a two-part comprehensive written examination over theory and techniques, and one area to be selected in consultation with the advisor.

### Master of Arts in Education (Folk Studies minor)

This program is designed to enrich the teaching content in the public schools in the arts, humanities, and social sciences, and to broaden the teacher's general education background. Admission requirements for this program are the same as for the Master of Arts in Folk Studies. The student pursuing this program must meet all requirements for a Standard Certificate, and in doing so, will take a minimum of 12 hours in folklore courses, six hours of which may be elected from any of the 400 or 500-level folklore courses; or one course from a related discipline may be substituted for the fourth folklore course.

### Graduate Courses in English:

**503. Linguistics and Transformational Grammar. Three hours.**  
History and development of modern grammar and linguistic principles. A review of current professional writers and an introduction to the various "new" grammars.

**508. Studies in Language Development. Three hours.**  
This course is concerned with a study of the nature and function of language, the processes and stages of language learning, and the development of functional language skills.

**509. Standard English as a Second Dialect. Three hours.**  
This course offers an examination of the differences standard and non-standard English, a presentation of second language teaching techniques for speakers of nonstandard English, and a review of the literature on

**English**

teaching materials for the teaching of the language arts to culturally disadvantaged children.

**520. Bibliographical and Methodological Studies in Literature. Three hours.**  
A systematic study of basic bibliography and bibliographical problems; research methods requisite for the M.A. thesis and scholarly publications; and the craft and methodologies of recent critical essays.

**523. Restoration and Eighteenth Century Drama. Three hours.**  
Careful study of representative plays. Evaluation of influences, movements, and productions. Wide reading and individual study.

**560. Literary Criticism II. Three hours.**  
A survey of critical theory and practice of the significant literary critics of the Western world from the Romantic period to the present.

**570. Appalachian Folklore and Folklife. Three hours.**  
Prerequisites: graduate status, plus a personal interview with the instructor prior to registration.  
A study of the folklife and culture of the Upland South, with emphasis on verbal and material traditions. Includes a cursory investigation of the Ozark region. (Same as Anthropology 570).

**572. Applied Folklore. Three hours.**  
Prerequisites: graduate status; humanities, social, or behavioral science background preferred.  
The study of folklore items and genres as they exist and function in their cultural context in both oral and printed communications channels. (same as Anthropology 572).

**577. Techniques and Materials in Folklore Studies. Three hours.**  
Prerequisites: graduate status; must also be pursuing a graduate program of study in folklore or in a discipline which is distinctly related to folklore. A course dealing with recent folklore theories, ethnographic procedures, field collection of folklore and folklife, identification and documentation procedures necessary in the preparation of folkloristic materials for archiving and studying. (Same as Anthropology 577).

**578. Folklore and Folklife Research. Three hours.**  
Prerequisite: English 577.  
An interdisciplinary consideration of diverse topics related to fieldwork and research in folklore and folklife. Problem statement, advance preparation, interviewing techniques, documentation of data, etc. (Same as Anthropology 578).

**579. Directed Study and Research in Folklore. Three hours.**  
Prerequisites: graduate status; also English 577 or demonstrated ability to work independently.  
A qualified student may study a particular area in depth under the direction of a member of the folklore faculty. The student meets with his faculty director at prearranged times to discuss readings, research, or field project. (Same as Anthropology 579).

**English**

**581. Readings in Old English. Three hours.**  
Introduction to Anglo-Saxon vocabulary, grammar, and literary devices. Some readings in the original and some in translation.

**582. Middle English Literature. Three hours.**  
A generous sampling of non-Chaucerian English literature of the Middle English period. Some attention will be given to the language of the period.

**583. Shakespeare II. Three hours.**  
Selected comedies and histories studied in depth. Attention given to individual research in literary criticism.

**585. Milton. Three hours.**  
A general study of John Milton's poetic works with some attention to his prose.

**587. Wordsworth and Keats. Three hours.**  
A study of the major works of these two writers and an evaluation of their contributions to the Romantic Movement.

**588. Modern British Poetry. Three hours.**  
This course studies in detail the work of major twentieth century British poets.

**591. Emerson, Thoreau, and Whitman. Three hours.**  
A study of their selected works, their cultural backgrounds, their contributions, biographical and critical material.

**592. The Age of Twain and James. Three hours.**  
A study of realism and naturalism in American literature with special emphasis on Twain and James and their contemporaries.

**593. Poe, Hawthorne, and Melville. Three hours.**  
A study of their selected works, their cultural backgrounds, their contributions, biographical and critical material.

**594. Contemporary Fiction. Three hours.**  
A study of selected major figures and their works. Consideration of movements, influences, developments since 1900.

**596. Seminar in American Writers. Three hours.**  
This is an intensive course dealing with a small group of writers, or perhaps one major writer. It will vary in content from time to time according to the instructor assigned and the apparent needs of the students.

**597. Investigations in English. Two or three hours.**  
An intensive review of articles in professional journals dealing with certain problems relative to the teaching of English.

**598. Problems in English. Two or three hours.**  
Supervised research on literary or linguistic problems.

**599. Thesis Research. Six hours.**

**The following 400-level courses may be taken for graduate credit:**

**401G. Advanced Composition. Three hours.**  
Study and practice in various forms of writing and rhetorical principles.

## English

**404G. The History of the English Language. Three hours.**  
A study of the origin and development of the English language with emphasis on phonetic and grammatical changes.

**405G. Phonetics. Three hours.**  
A study of speech sounds, their production and their acoustic properties.

**406G. American Dialects. Three hours.**  
A study of regional and social variations in American English, causes of these variations, and directions of change.

**407G. Descriptive Linguistics. Three hours.**  
This course provides a study of language in terms of its internal structures. It particularly concerns itself with the characteristic features of oral language. Some attention is given to theoretical developments.

**455G. American Drama. Three hours.**  
See Department of Speech and Theatre.

**456G. Elizabethan Drama. Three hours.**  
See Department of Speech and Theatre.

**458G. Modern British Novel. Three hours.**  
A study of the techniques and ideational programs in representative works of major British novelists from Joseph Conrad to the present, with attention also given to the intellectual climate of the period.

**459G. Modern Drama.**  
See Department of Speech and Theatre.

**460G. Literary Criticism I. Three hours.**  
A survey of the critical theory and practice of the significant literary critics of the Western world from the Greek and Roman periods through the English Neo-Classical period.

**476G. Anglo-American Folksongs. Three hours.**  
A historical and critical study of traditional ballads and songs in Great Britain and the United States from the Middle Ages to the present.

**477G. Folk Art and Technology. Three hours.**  
Folklife research and selected world culture groups, with emphasis on folk crafts, technology, and architecture in the United States prior to their absorption into industrialization. Special reference to northwest European antecedents, sources, and parallels.

**478G. Folklore in Literature. Three hours.**  
Readings in world literature from the Bible to the modern novel to discern the various aspects of folklore reflected there and to determine the degree to which unwritten literature has affected origins and development of written literature.

**481G. Chaucer. Three hours.**  
Representative works of Chaucer; backgrounds; outside readings and reports.

**482G. Shakespeare I. Three hours.**  
Selected major Shakespearean plays are read and studied in the light of the Elizabethan period as representing typical dramatic writing and production.

## English/Foreign Language

**483G. The English Renaissance. Three hours.**  
Non-dramatic literature of the Renaissance, with emphasis on Spenser.

**484G. The Romantic Movement. Three hours.**  
Background and phases of romanticism, with a study of representative exponents of the Romantic Movement.

**485G. The Seventeenth Century. Three hours.**  
The concentrated study of the seventeenth century literature, forms, and developments.

**486G. The Eighteenth Century. Three hours.**  
The concentrated study of the eighteenth century literature, forms, and developments.

**487G. Victorian Prose. Three hours.**  
The major prose writers of the Victorian period with sufficient study of political, social, and economic movements to show the interrelationships between the culture of the era and its literature.

**488G. Victorian Poetry. Three hours.**  
The major poets of the Victorian period with sufficient study of political, social, and economic movements to show the interrelationships between the culture of the era and its literature.

**489G. The English Novel. Three hours.**  
The technique and history of the novel. Several representative novels studied.

**490G. The American Novel. Three hours.**  
The American novel from Cooper to the present. History, general development, and technique are studied. Several representative novels studied.

**493G. Major American Poets. Three hours.**  
This course is a careful study of the major poems, the styles, and the poetic programs of the most important American poets from Poe to the present.

**494G. Kentucky Literature. Three hours.**  
A survey of literary people and places in Kentucky, including a detailed study of several works of Kentucky writers.

**495G. Southern Literature. Three hours.**  
This course will cover major, minor, and so-called "regional" writers of the South.

**496G. Comparative Literature. Three hours.**  
A study of a body of foreign literature, focusing on genres or themes in comparison to English or American literature.

## FOREIGN LANGUAGES

### Graduate Faculty:

Professors: Brown (Head of Department), Hatcher, Laessig, Miller

Associate Professors: Babcock, Nolan

Assistant Professors: Baldwin, Padilla, Walls

French: Master of Arts in Education (French major or minor)

Other graduate degree programs in French are expected in the near future.

German: Master of Arts in Education (German major or minor)

Spanish: Master of Arts; Master of Arts in College Teaching; Master of Arts in Education (Spanish major or minor)

#### Master of Arts in Spanish

This program is designed for those who wish to teach Spanish on the junior or senior college level, as the initial stage on the graduate level for those intending to pursue a doctoral degree, for secondary school teachers who desire such a program in addition to meeting certification standards, and for those whose vocational objective includes a high degree of proficiency in Spanish.

In addition to general Graduate College requirements, the student must have completed the equivalent of an undergraduate minor in Spanish (18 hours above the elementary year), including an introductory course in Hispanic literature, with approximately a 3.0 (4.0) average in this field. Deficiencies must be made up within one year without graduate credit.

Under Plan A, a minimum of 24 hours of acceptable course work and a thesis, equivalent to six graduate hours, are required. Under Plan B, a minimum of 30 hours of acceptable course work must be completed; the thesis is not required. Of the 24 hours under Plan A and 30 hours under Plan B, 6 hours may be taken in the following related fields, with the approval of the Graduate Adviser: another foreign language (modern or classical), English, history (Spain or a Spanish-speaking area), and other fields which clearly relate to the Hispanic interest. Of the minimum of 18 hours of course work in Hispanic literature or language, at least nine hours must be at the 500-level or above, and of the additional six hours, three hours must be numbered 500 or above.

An examination over course work and the thesis, if elected, must be satisfactorily completed.

Prior to taking his final examination the student must demonstrate reading ability sufficient to do scholarly research in another language, modern or classical. The language chosen must meet the approval of the head of the Department.

#### Master of Arts in College Teaching in Spanish

This program is designed especially to prepare students for the teaching of Spanish on the junior or senior college level. In addition to admission standards for the Master of Arts in Spanish, a commitment to college teaching is required of candidates for this degree program.

A total of 24 hours of course work is required, which must include 18 hours in the field of Hispanic literature and language. With the approval of the Graduate Adviser, a maximum of six semester hours may be taken in the following related fields: another foreign language (modern or classical), English, history of Spain or of a Spanish-speaking area, professional education, and other fields which clearly relate to the Hispanic interest. Of the minimum of 18 hours of course work in Hispanic literature or language, at least nine hours must be numbered 500 or above, and of the additional six hours, three hours must be numbered 500 or above.

A course in foreign language materials and methods or its equivalent is required. If the student has not already completed such a course, he may enroll in it for graduate credit and take it concurrently with a required period of supervised teaching.

A thesis is optional. However, if the thesis is elected, it will carry six semester hours of credit, completing the 30 hours required for the degree. The topic must be approved by the student's adviser and the head of the Department. The student may elect to do additional course work in Hispanic literature or language in lieu of writing a thesis. Three hours of this work must be at the 500-level or above.

The student must do some supervised college teaching under the direction of a member of the Department of Foreign Languages. An examination over course work and the thesis, if elected, must be satisfactorily completed.

#### Master of Arts in Education (French major or minor; German major or minor; Spanish major or minor)

This program provides additional graduate coursework in French, German, or Spanish for the public school teacher. The student following this program must meet all requirements for Standard High School certification. The student majoring in French, German, or Spanish may take a minimum of 18 or a maximum of 21 hours in his chosen major, while the student minoring in French, German, or Spanish may take a minimum of 12 or a maximum of 15 hours in his chosen field. The remaining hours will be taken in professional education courses.

## Foreign Languages

### Graduate Courses in Foreign Languages:

520. Seminar in French Literature or Language. Three hours.

522. Old French Philology. Three hours.

524. Nineteenth Century French Novel. Three hours.

525. French Poetry to Baudelaire. Three hours.

526. Modern French Poetry. Three hours.

527. Renaissance French Literature. Three hours.

529. Seminar in French Literature. Three hours.

538. Seminar in German Literature. Three hours.

539. Seminar in German Literature or Language. Three hours.

570. Golden Age Prose. Three hours.  
A study of the prose literature of Spain during the period 1479 to 1635 with an emphasis on *Don Quijote*.

571. Golden Age Poetry and Drama. Three hours.  
A study of the poetry and drama of Spain during the period 1479 to 1635 with emphasis on the contributions of the leading writers: Garcilaso de la Vega, Lope de Vega, Gongora, and Calderon de la Barca.

572. Nineteenth Century Prose. Three hours.  
A survey of the nineteenth-century peninsular Spanish novel and the costumbrista sketches.

573. Nineteenth Century Poetry and Drama. Three hours.  
A study of Romantic poetry of the period together with a parallel study of Romantic drama and of the ensuing Realistic tendency in drama.

575. Twentieth Century Prose. Three hours.  
A study of the novel and the essay of the Generation of '98 and of the novel of the post-civil war period in Spain.

576. Twentieth Century Poetry and Drama. Three hours.  
A study of the drama of Spain from the Generation of '98 through the contemporary period with emphasis on Jacinto Benavente and Garcia Lorca. Poetry is studied beginning with the Modernists through the contemporary period, with emphasis on Juan Ramon Jimenez, Antonio Machado, and Garcia Lorca.

578. Seminar in Hispanic Literature or Language. Three hours.  
(May be repeated for a total of six hours.)

590. Comparative Romance Linguistics (French, Spanish). Three hours.

599. Thesis. (French, Spanish). Six hours.

600. Seminar in College Teaching. (French, German, Spanish). Three hours.

The following 400-level courses may be taken for graduate credit:

420G. Advanced French Composition and Stylistics. Three hours.  
Prerequisite: French 320.  
An advanced level study of French grammar and style involving composition work in French, comparative analysis, and translation.

## Foreign Languages

### 421G. Advanced French Conversation. Three hours.

Prerequisite: French 321.

An advanced level approach to French conversation with some emphasis on phonetics.

### 422G. History of the French Language. Three hours.

Prerequisite: French 221.

General study of developments leading to the formation of the French language.

### 423G. Seventeenth Century French Literature. Three hours.

Prerequisite: French 325.

A general study of the major French authors and works of the seventeenth century, emphasizing important literary trends.

### 425G. Nineteenth Century French Literature. Three hours.

Prerequisite: French 324 or permission of instructor.

Emphasis on the novel; development of the literary schools.

### 426G. Twentieth Century French Drama. Three hours.

Prerequisite: French 326 or permission of instructor.

A general study of the major French dramatists of the twentieth century, their works, and trends in French drama of the period.

### 427G. Twentieth Century French Novel. Three hours.

Prerequisite: French 326 or permission of instructor.

A general study of the major French novelists of the twentieth century, their works, and trends in the French novel in this century.

### 429G. Studies in French Literature or Language. Three hours.

Prerequisite: Senior standing and permission of the instructor.

(May be repeated for a total of six hours of credit.)

### 430G. Advanced Written German. Three hours.

Prerequisite: German 330 or permission of instructor.

A study of the various styles of written German.

### 431G. Advanced Oral German. Three hours.

Prerequisite: German 331 or permission of instructor.

Oral practice in the language, leading toward the goal of near-native fluency.

### 432G. History of the German Language. Three hours.

Prerequisite: German 330 or permission of instructor.

Development of the German language from the beginnings to the present. Emphasis on sound changes, syntax, vocabulary.

### 434G. Survey of Nineteenth Century German Literature. Three hours.

Prerequisite: German 334 or equivalent.

A study of the period from the end of Classicism through the Naturalists.

### 435G. Twentieth Century German Literature. Three hours.

Prerequisite: German 334 or equivalent.

A study of outstanding works of the twentieth century, including contemporary authors.

## Foreign Languages/Geography and Geology

**436G. German Literature of the Classical Period. Three hours.**  
Prerequisite: German 334 or equivalent.  
A study of the outstanding works of Goethe, Schiller and others.

**438G. Survey of the German Lyric. Three hours.**  
Prerequisite: German 334 or equivalent.  
Representative lyric poetry from the beginnings to the present.

**439G. Studies in German Literature or Language. Three hours.**  
Prerequisite: Senior standing or permission of the instructor.  
(May be repeated for a total of six hours of credit.)

**440G. Seminar in Greek Literature. Three hours.**  
Prerequisite: Greek 240 or equivalent.

**450G. Seminar in Latin Literature. Three hours.**  
Prerequisite: Latin 252 or equivalent.

**457G. Roman Authors of the Republic. Three hours.**  
Prerequisite: six to 12 hours of Latin beyond 251.

**458G. Roman Authors of the Empire. Three hours.**  
Prerequisite: six to 12 hours of Latin beyond 251.

**464G. Nineteenth Century Russian Literature. Three hours.**  
Prerequisite: Russian 261 or equivalent.  
Representative authors of the Pre-Revolution period.

**465G. Soviet Literature. Three hours.**  
Prerequisite: Russian 261 or equivalent.  
Representative authors from 1917 to the present.

**469G. Studies in Russian Literature or Language. Three hours.**  
Prerequisite: Russian 261 or equivalent.  
(May be repeated for a total of six hours of credit.)

**496G. Russian Literature in Translation. Three hours.**  
Prerequisite: Russian 261 or equivalent.  
Selected works of major Russian authors.

**470G. Advanced Oral Spanish. Three hours.**  
Prerequisite: Spanish 370 or equivalent.  
Conversation units, dramatic sketches, original oral topics.

**471G. Advanced Spanish Syntax. Three hours.**  
Prerequisite: Spanish 371 or equivalent.  
Examination of selected literary works; original compositions on selected topics.

**472G. Background of Modern Spanish. Three hours.**  
Prerequisite: Spanish 371 or permission of the instructor.  
A general history of the Spanish language, stressing the development of sounds and forms, word borrowings and changes in meanings.

**475G. Literature of Spain, I. Three hours.**  
Prerequisite: Spanish 374 or equivalent.  
A survey of peninsular Spanish literature from the beginnings through the 17th Century. Readings, reports.

## Foreign Languages/Geography and Geology

**476G. Literature of Spain, II. Three hours.**  
Prerequisite: Spanish 374 or equivalent.  
A survey of peninsular Spanish literature from the 18th Century to the present. Readings, reports.

**477G. Literature of Spanish America, I. Three hours.**  
Prerequisite: Spanish 374 or equivalent.  
A survey of Spanish American literature through the 19th Century before Modernism.

**478G. Literature of Spanish America, II. Three hours.**  
Prerequisite: Spanish 374 or equivalent.  
A survey of Spanish American literature from Modernism through the contemporary period.

**479G. Studies in Hispanic Literature or Language. Three hours.**  
Prerequisite: Senior standing and permission of the instructor.  
(May be repeated for a total of six hours of credit.)

## GEOGRAPHY AND GEOLOGY

### Graduate Faculty:

Professors: Ahsan, Cockrill, Davis, Hegen, (Head of Department), McGregor, Pickard, Taylor  
Associate Professors: Fields, Foster, Hoffman, Petersen, Seeger  
Assistant Professor: Dilamarter

### Degrees Offered:

Master of Science in Geography; Master of Arts in College Teaching in Geography; Master of Arts in Education (Geography Major or Minor); Master of Public Service (City and Regional Planning Option).

The graduate programs in geography provide a solid background for students who plan to continue advanced studies toward the Ph.D. degree; for careers in junior (Community) college teaching; for teaching in middle and high schools; and for public service as city and regional planners. Graduates are prepared for a wide variety of other employment areas such as park rangers or naturalists in national and state parks; cartographers or airphoto interpreters; and similar services in business and industry.

For admission, students must meet the general requirements of the Graduate College and present an academic record giving evidence of preparation and ability necessary to pursue graduate studies.

## *Geography and Geology*

### **Master of Science in Geography**

The requirements for the Master of Science degree in geography includes course work, a research tool, a comprehensive examination, and a thesis. A minimum of 30 semester hours of graduate credit approved by the student's graduate advisory committee will be taken. This includes six hours for the thesis which is based upon original research performed under the direction of the student's graduate advisor.

At least half of the course work must be completed in courses open only to graduate students. The graduate level course work includes six hours of thesis credit (699) and 12 hours of core courses (500, 502, 504, and 491G or 590). With the approval of his graduate advisory committee, a student may take a maximum of six hours outside the department.

Prior to the comprehensive Master's examination the applicant must meet the research tool requirement by either: (1) demonstrating reading ability sufficient to do scholarly research in a foreign language appropriate to his major area; or (2) demonstrating that he has mastered appropriate research techniques approved by the student's graduate committee, the department head, and the Dean of the Graduate College.

### **Master of Arts in College Teaching in Geography**

This degree is designed for those students who intend to pursue careers in junior college or college teaching. The courses constituting a student's degree program will include the core program courses (500, 502, 504, and 491G or 590) and other courses as determined by his graduate advisory committee. A thesis is optional. A comprehensive examination is part of the degree requirements. The graduate students in this degree program will have an opportunity for practice teaching under the guidance of a departmental coordinator for student teaching and their graduate advisory committee.

### **Master of Arts in Education (Geography major or minor)**

This program is designed for those interested in public school teaching who wish to major or minor in geography. Students interested in teaching must meet all requirements for standard high school certification including a minimum of nine hours of professional education courses. Those majoring in geography will take a minimum of 18 hours in geography including 500, 502, 504, and 491G or 590, while those minor-

## *Geography and Geology*

ing in geography will take a minimum of 12 hours including 500 and 504.

### **Master of Public Service (City and Regional Planning Option)**

This is an interdisciplinary degree program consisting of offerings from several departments. It is designed to prepare individuals to serve in government positions which require administrative training as well as knowledge of the particular areas they are to administer.

Administered by the Geography Department, this option is designed to provide academic and practical training in city and regional planning. The course of instruction will prepare students for employment with local, state, and federal agencies and a variety of positions within the private sector of the economy.

*All candidates for the Master of Public Service degree (regardless of the option chosen) are required to complete a core area of nine to 12 hours including Government 540—Public Administration (which is required of all).*

The remaining hours of the core may be selected from the following courses:

Economics 550—Government Financial Policy and Administration  
Geography 580—Problems in Urban Geography  
Government 511—Seminar in State and Local Government  
Sociology 565—Studies in the Community  
Psychology 551—Social Psychology of Organizations

In addition to the nine hours of core requirements, students selecting the planning option will be required to complete a minimum of 21 additional graduate hours. With the consultation of the advisor individual programs are devised to fit the specific needs and talents of the student.

Required courses in the option are:

Planning: Theory and Application	—Geog. 484G	3 hours
Introduction to Research	—Geog. 500	3 hours
Advanced Planning	—Geog. 584	3 hours
Planning Practicum	—Geog. 595	3-6 hours

The student, if he desires, may elect to write a thesis for six hours of credit. This research project must be approved by the program director, but may be written under a faculty advisor in a number of approved disciplines.

## Geography and Geology

### Graduate Courses in Geography:

#### 500. Introduction to Geographic Research. Three hours.

Development of skills for geographic research. Skills emphasized include posing of research problems, bibliography, documentation, organization, and presentation of geographic problems. (Fall)

#### 501. Geography, Science, Civilization. Three hours.

Prerequisite: Consent of instructor.

A topical seminar which examines current issues and trends of the discipline and related fields, surveys recent research, and introduces the participants to the broad concern of the role of science in society, technology and culture, and other similar selected topics. (Alternate springs beginning 1974)

#### 502. Geographic Techniques for Field Investigations. Three hours.

Prerequisites: Permission of instructor.

Practical applications of geographic field techniques. (Alternate springs beginning 1973)

#### 504. Historical and Philosophical Bases of Geography. Three hours.

Prerequisites: Permission of instructor.

A critical survey of the evolution of geography as a distinct discipline through the study of the writings of outstanding scholars from the Greek period to the present time. (Fall)

#### 505. Biogeography. Three hours.

Prerequisite: Introductory courses in Geography and/or Biology, and consent of instructor.

A study of the evolutionary, geographical, ecological, pedological, and edaphic factors that have been involved in the naturalization, acclimation, and distribution of plant life with some emphasis on animal life. (Alternate falls, beginning 1973)

#### 510. a, b, c. Selected Topics in Geography. Three hours.

Prerequisite: Consent of instructor.

Seminar course whose subtitles will vary from semester to semester depending upon student needs. (On demand)

#### 521. Advanced Studies in Geomorphology. Three hours.

Prerequisites: Geomorphology 420, or equivalent; and 3 additional hours in related upper-level physical geography or geology.

The first half of the course will consist of a review of topics in advanced geomorphology, selected field and laboratory procedures, and an introduction to research in landform analysis. The second half of the course will be devoted to student research in instructor-approved geomorphic topics. Progress reports and discussion will culminate in the presentation of a student research paper. (Alternate springs, beginning 1974)

#### 522. Advanced Studies in Climatology. Three hours.

Prerequisites: Geography 422, and consent of instructor.

Development of skills in studying the effects of climatic controls on microclimates and climatic anomalies. Detailed use of environmental characteristics, i.e., rainfall patterns, etc., in distributional studies stress the use of climatology as a research tool. (Alternate springs, beginning 1974)

## Geography and Geology

#### 525. Advanced Political Geography. Three hours.

Prerequisites: Geography 425 and consent of instructor.

Selected topics or problems in political geography, with examples drawn from local, metropolitan, regional, national, and international levels. (Alternate falls, beginning 1973)

#### 530. Selected Problems in Cultural Geography. Three hours.

Prerequisites: Geography 430 or consent of instructor.

A seminar-field experience designed to study in the area of cultural origins and dispersals and in the area of environmental perception and behavior with resulting consequence upon the geographic landscape. Emphasis will be placed upon an examination of the local landscape through individual field projects. (Alternate years, beginning 1974)

#### 532. Studies in Geographic Exploration. Three hours.

Prerequisite: Permission of instructor.

18th, 19th, and 20th century scientific exploration of the "terrae incognitae" through examination of first hand accounts. Emphasis will be placed upon landscape description and mapping by governmental sponsored scientific "voyages of discovery". Study will involve the processes of human landscape discovery with their cultural, economic, and political ramifications. (Alternate years, beginning 1973)

#### 540. Advanced Regional Geography. Three hours.

Prerequisites: Two courses in regional geography and consent of instructor. The study of the regional method as one of the basic approaches to geographic research through the vehicle of one or more major regional units. The regional emphasis will be announced each time the course is offered. (Yearly)

#### 541. Seminar in Tropical Geography. Three hours.

Prerequisites: Geography 210 or 422 or 430 and consent of instructor.

A seminar which analyses the specific problems of the man-environment relationships of the American, African, and Asian Tropics. (Yearly)

#### 550. Advanced Studies in Economic Geography. Three hours.

Prerequisites: Geography 250 and 478 or 479 and consent of instructor.

An examination of the major theories in economic geography. Attention will be directed to the relationship of these theories to spatial activities and problems in the various sectors of the economy. (Alternate springs, beginning 1974)

#### 560. Settlement Geography. Three hours.

Prerequisites: Geography 430 or consent of instructor.

An introduction to sources and philosophies of settlement studies. Investigations of selected settlement patterns with emphasis on rural and rural non-farm settlement: farmstead, hamlet, village and town, and functionally related features, architectural style, and functional rationale. Student research will center on local (or home) settlement phenomena. Field research normally will be included. (Alternate falls, beginning 1974)

## Geography and Geology

### 571. Quality of Life: Environmental Problems and Ecological Solutions. Three hours.

Prerequisites: Graduate standing in Geography, or consent of instructor. A seminar designed to develop critical ecological sensitivity through analysis of past and present environmental problems, implemented and alternative solutions. Includes a research project directed toward preventive application of ecological solutions to impending environmental problems. (Yearly)

### 580. Problems in Urban Geography. Three hours.

Prerequisites: Geography 480, or consent of instructor. Analysis of selected problems in urban geography. (Fall and Spring)

### 584. Advanced Planning. Three hours.

Prerequisite: Geography 484. An analysis of advanced topics and results of recent research in city and regional planning. Topics for discussion will include legislative changes in state and federal studies as they apply to planning, land use controls, and various methodologies used in the field. (Every spring)

### 585. Advanced Studies in Population Geography. Three hours.

Prerequisites: Geography 485 and consent of instructor. A seminar approach to regional and world problems in human population. Selected problem areas identified in Geography 485 are studied in depth, and seminar reports given and discussed. (Alternate falls, beginning 1973)

### 590. Experimental Design and Data Analysis. Three hours.

Prerequisite: Geography 491, or consent of instructor. (Cross-listed with Agriculture, 590) Statistical considerations in design of experiments; covariance, multiple regression, factorial experiments, individual degrees of freedom, incomplete block designs, experiments repeated over space and time; test of reliability, significance and confidence levels. Lecture three hours. (Every spring)

### 595. Planning Practicum. Three to six hours.

Prerequisite: Geography 484, 584, and permission of instructor. Supervised planning experience in a cooperating government or private agency. (On demand)

### 699. Thesis Research. One to six hours.

The following 400-level geography courses may be taken for graduate credit:

### 402G. Physiography of North America. Three hours.

Prerequisite: Geography 106 and 108 or Geology 102 or 111 and 113. Each of the physiographic regions or provinces is studied. Locations and names of chief subdivisions of each region are noted. Orogenies, erosional cycles, and cycle-end surfaces are emphasized. Laboratory involves interpretations of A.M.S. topographic models and of topographic maps. (Spring 1972 and alternate years)

### 410G. Cartography. Three hours.

Prerequisite: Permission of instructor. Drawing of scales, line diagrams, thematic maps, charts and selected map

## Geography and Geology

projections. History of cartography, uses of map projections, map compilation and generalization, cartographic design, typography and lettering, map reproduction and map construction. (Fall)

### 415G. Air Photo Interpretation. Three hours.

Prerequisite: Permission of instructor. Characteristics of aerial photographs; remote sensing techniques; use of air photos for analysis of physical and cultural features on the earth and air photo approach to urban and regional planning. (Spring)

### 416G. Remote Sensing: Principles and Applications to Environment and Planning. Three hours.

Prerequisite: Permission of instructor. Analysis and evaluation of remote sensing techniques. Application of remote sensing in the study of man's bio-physical environment with the use of infrared, thermal infrared, radar and space photography. (Alternate springs)

### 420G. Geomorphology. Four hours.

Prerequisite: Geography 106 or Geology 102, 111 and 113. (Cross-listed with Geology) The study of the origin, history and characteristics of land-forms produced by fluvial, glacial, wind and wave erosion and masswasting and ground-water or by a combination of these, acting upon the major types of earth materials and structures. Laboratory work includes the interpretation of topographic and geologic maps, air-photos and stereopairs. A field trip may be required. (Fall)

### 421G. Advanced Geomorphology. Three hours.

Prerequisite: Geography 420. (Cross-listed with Geology) Course emphasis is on landform development under processes associated with running water. Principal topics are: climate and geomorphic processes; weathering; the drainage basin as a geomorphic unit; water and sediment in channels; channel form; hillslope characteristics; drainage pattern evolution; channel changes with time; and evolution of hillslopes. (Spring 1973 and alternate years)

### 422G. Climatology. Four hours.

Prerequisite: Geography 105. This course analyzes one of the most important constituents of our environment. Presents the elements of climate and their world distribution with emphasis on the climatic controls; surveys the influences of climates on environment; introduces climatic classification systems and climatological regions of the world. (Fall 1972 and alternate years)

### 423G. Transportation. Three hours.

Prerequisite: Geography 250, or permission of instructor. A critical examination of the problems of interaction, diffusion and information transfer as they appear in a spatial context. Current research and planning needs are analyzed. (Fall)

### 424G. Weather Analysis and Forecasting. Three hours.

Prerequisite: Geography 105, 107 and 121, or consent of instructor. Analysis of air masses; principles of weather forecasting; the drawing and

## Geography and Geology

interpretation of the daily weather map; and the making of weather forecasts. (Spring)

**425G. Political Geography. Three hours.**  
Prerequisite: Geography 101, or permission of instructor.  
A study of the political system as a spatial phenomenon from pre-literate forms of sociopolitical integration to the nation-state and other modern forms of political unification. Examples from local, metropolitan-regional, national and international levels. (Fall)

**430G. Cultural Geography. Three hours.**  
This course will emphasize the concept of culture and how various cultures perceive their environments and interact to them. Man's role as the most active agent in altering the earth's surface is examined. The Europeanization of the earth and the origin and diffusion of selected cultural phenomena are studied. (Spring)

**452G. Field Studies in Geography. One to three hours.**  
Prerequisite: Geography 106 or permission of instructor.  
Field methods are emphasized in problems which are assigned. (Spring)

**453G. Geography of the Soviet Union. Three hours.**  
Prerequisite: Geography 101 or permission of instructor.  
A geographic analysis of the Soviet Union. (Spring)

**454G. Geography of Middle America. Three hours.**  
Prerequisite: Geography 101 or permission of instructor.  
A regional analysis of Mexico, Central America and the West Indies. (Fall)

**455G. Geography of Australia and Islands of the Western Pacific. Three hours.**  
Prerequisite: Geography 101 or permission of instructor.  
A survey of geographic patterns in Australia, Micronesia, Melanesia and Polynesia. (Fall 1972 and alternate years)

**462G. Geography of South America. Three hours.**  
Prerequisite: Geography 101 or permission of instructor.  
Analysis of the physical and cultural bases of South America's geographic patterns with emphasis on problems of resource development. (Spring)

**464G. Geography of Europe. Three hours.**  
Prerequisite: Geography 101 or permission of instructor.  
A geographic analysis of Europe. (Spring)

**465G. Geography of Asia. Three hours.**  
Prerequisite: Geography 101 or permission of instructor.  
A study of regional differences with particular attention to the distribution and activities of the peoples in relation to the natural and economic setting and to problems of development. Excludes the Soviet Union. (Fall)

**466G. Geography of Africa. Three hours.**  
Prerequisite: Geography 101 or permission of instructor.  
A geographic survey, assessing the relationships of the physical and cultural patterns to actual and potential economic development. (Fall, Spring)

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**467G. Geography of the Bible Lands. Three hours.**  
Prerequisite: Permission of the instructor.  
This course deals with the various aspects of the sequester occupancy of Southwestern Asia and surrounding regions mentioned in the Bible. Emphasized are the physical setting, the historical religious geography of the region, and the contemporary scene. (On demand)

**470G. Geography of Cities. Three hours.**  
Prerequisite: Permission of instructor.  
This course covers the origin and evolutionary development of cities, patterns of world urbanism at the present time, and provides a detailed examination of cities in the United States. (Fall)

**471G. Conservation of Natural Resources. Three hours.**  
Prerequisite: Geography 101 or permission of instructor.  
Natural resources of the United States are studied and recommendations for their more efficient utilization are presented. (Fall, Spring, Summer)

**478G. Geography of Agriculture. Three hours.**  
Prerequisite: Geography 250, or Agriculture 260, or consent of instructor.  
A study of the regional patterns of world agricultural production. Ecological and economic factors and cultural preferences are used in explaining the spatial patterns of crops and agricultural types. Present and potential production are evaluated in terms of regional and world needs. (Fall)

**479G. Industrial and Commercial Geography. Three hours.**  
Prerequisite: Geography 250, or permission of instructor.  
Course deals with manufacturing and with the commercial activities and facilities related to assembling of raw materials and distribution of products. Distribution of each of the principal types of manufacturing is studied. Processes, if geographically significant, are presented and locational reasons for each type are noted. (Spring)

**480G. Urban Geography. Three hours.**  
Prerequisite: Permission of instructor.  
Geographic principles related to basic elements of distribution, structure, functional relationships and regional setting of urban centers. (Fall, Spring)

**484G. Planning: Theory and Application. Three hours.**  
Prerequisite: Permission of the instructor.  
An overview of planning theory, practice, and organizational structure. History of planning and planning thought. Traditional and emerging responsibilities of planning; the concept of comprehensive planning. (Fall)

**485G. Population and Resources. Three hours.**  
Prerequisite: Permission of instructor.  
The distribution of population and population characteristics are viewed against the background of the resources and cultures of the world. Problem regions are identified. Examples of such areas are studied in their regional setting and world-wide patterns are outlined. The background and causes of the problems are studied and possible attacks on them are developed and considered. (Spring)

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### 491G. Data Analysis and Interpretation. Three hours.

Prerequisite: Mathematics 100 or consent of instructor.

Basic concepts of statistical models and use of samples; variation, statistical measures, distributions, tests of significance, analysis of variance and elementary experimental design, regression, correlation and chi-square as related to interpretation and use of scientific data. (Fall, Spring)

\*The following graduate course, specially designed for teachers of natural and earth science, is offered in Geology:

### 511. The Dynamic Earth. Three hours.

Prerequisites: Geology 102 and Geology 112, or one year of Earth Sciences teaching at Secondary School Level.

The course will contain the following topics: plate tectonics, the surface features of the Earth, physical properties of the Earth and its interior, geological processes and the geological time scale, the nature of the Crust-Mantle boundary, the structure, petrology and composition of the Earth's Crust and Mantle, magma generation, geoglynes and orogeny, continental drift, paleomagnetism, polar wandering and sea-floor spreading. (Yearly)

The following 400-level Geology courses may be taken for graduate credit:

### 405G. Paleontology. Four hours.

Prerequisite: Geology 112 and Biology 148-9 or permission of instructor. (Cross-listed with Biology)

A basic course in paleobiology including the nature of the fossil record, preservation, basic factors and theories relating to the origin and development of living systems and the processes of evolution, the species concept, systematics and paleoecology. The phylogenetic relationships and geologic history of major invertebrate taxa with a significant fossil record are also studied. Laboratory work includes the examination, description and classification of fossil specimens. (Fall)

### 411G. Special Topics in Geology. Three hours.

Prerequisite: Permission of instructor.

A lecture-discussion course in which advanced or special topics in geology are considered in detail. (Fall)

### 420G. Geomorphology. Three hours.

(Cross-listed with Geography)

Prerequisite: Geography 106 or Geology 102 or 111 and 113. The study of the origin, history and characteristics of landforms produced by fluvial, glacial, wind and wave erosion, and mass-wasting and ground-water or by a combination of these, acting upon the major types of earth materials and structures. Laboratory work includes the interpretation of topographic and geologic maps, air-photos and stereopairs. A field trip may be required. (Fall)

### 421G. Advanced Geomorphology. Three hours.

(Cross-listed with Geography)

Prerequisite: (Geology Geography) 420.

Course emphasis is on landform development under processes associated

## Geography and Geology

with running water. Principal topics are: climate and geomorphic processes; weathering; the drainage basin as a geomorphic unit; water and sediment in channels; channel form; hillslope characteristics; drainage pattern evolution; channel changes with time; and evolution of hillslopes. (Spring 1973 and alternate years)

### 424G. Field Geology. Seven hours.

Prerequisites: Geology 111, 112, 113, 114, 308, and 330.

This is a six-weeks summer field course in Geology. (On demand)

### 450G. Stratigraphy-Sedimentology. Three hours.

Prerequisites: Geology 350, Geology 405.

The origin, characteristics, occurrence and classification of sedimentary rocks, the processes of sedimentation and the characteristics and relationships of sedimentary strata including stratigraphic principles and practice. Representative rock specimens are studied. (Spring)

### 465G. Geophysics. Three hours.

Prerequisite: Geology 111 and one year of college Physics or instructor permission.

The basic fundamentals of general and exploration geophysics. The initial topics discussed include the origin of the earth and solar system, the earth's interior, geochronology, gravity and isostasy, seismology, the earth's heat, geomagnetism, upper atmosphere, continents and ocean basins, ridges and island arcs and plate tectonics. The theory and applications of exploration geophysics are also covered, especially gravity magnetic and seismic methods. (On demand)

### 470G. Tectonics. Three hours.

Prerequisite: Geology 308.

Plate Tectonics is the unifying theory of modern earth sciences. It explains the origin and evolution of the Earth's surface features. The theory is studied in detail and its historical development outlined, stressing the contribution of previous hypotheses and research (i.e. continental drift, sea-floor spreading, paleomagnetics, magnetic reversals, geosynclines, etc.) (Fall)

### 475G. General Oceanography. Three hours.

Prerequisite: Geology 325 or 350 or permission of instructor.

A course in basic fundamentals pertaining to the geological, chemical, physical and biological aspects of the marine environment. Primary topics for discussion include the topography, structure and history of the ocean basins and their margins, ocean waters and oceanic circulation, tides and waves, marine geochemistry, ocean sediments and sedimentation, near-shore geologic processes and the ocean as a bio-geochemical system. The resources of the ocean and the influences of man are also considered. (Spring 1973 and alternate years)

## GOVERNMENT

### Graduate Faculty:

Distinguished Visiting Professor: Shannon  
 Professors: Carroll (Head of Department), Chelf Jenkins, Madron,  
 Martin, Masannat, Neuber, Thomason  
 Associate Professors: Bluhm, Kearney, Uveges  
 Assistant Professors: Parker, Petersen

### Degrees Offered:

Master of Arts in Government; Master of Public Service (Public Administration option); Master of Arts in Education (Government major or minor)

### Master of Arts in Government

This program is designed to prepare students who expect to continue graduate work for a higher degree or who expect to apply for positions in junior college or university teaching; to provide an academic foundation for students who wish to pursue a career in professions such as journalism, public service, and politics; to increase the knowledge of secondary education teachers who desire such a program.

In order to pursue this program, a student must be eligible for admission to the Graduate College in good standing. The applicant for admission should have a B average in his major undergraduate field and/or all undergraduate courses in government. Letters of recommendation are required prior to admission.

Under Plan A, a minimum of 24 hours of acceptable coursework and a thesis, equivalent to six graduate hours, are required. The thesis will be under the supervision of the chairman of the student's graduate advisory committee. Under Plan B, a minimum of 30 hours of acceptable coursework must be completed; the thesis is not required.

Prior to the comprehensive Master's examination the applicant must meet the research tool requirement by either (1) demonstrating reading ability sufficient to do scholarly research in a foreign language appropriate to his major area; or (2) demonstrating that he has mastered appropriate research techniques approved by the Graduate College.

A final examination over courses, thesis, and related materials must be satisfactorily passed.

### Master of Public Service (Public Administration option)

This degree is an interdisciplinary program consisting of offerings from several departments. It is designed to prepare individuals to serve in government positions which require administrative training as well as knowledge of the particular areas they are to administer.

*All candidates for the Master of Public Service degree (regardless of the option chosen) are required to complete a core area of nine to 12 hours including Government 540—Public Administration (which is required of all).*

The remaining hours of the core may be selected from the following courses:

Economics 550—Government Financial Policy and Administration  
 Geography 580—Problems in Urban Geography  
 Government 511—Seminar in State and Local Government  
 Sociology 565—Studies in the Community  
 Psychology 551—Social Psychology of Organizations

The Administration option is designed to provide academic training in administration which will be particularly applicable to the individual's area of specialization. The Government Department offers two choices within the Administration option: (1) general administration, and (2) urban administration.

Letters of recommendation are required prior to admission.

The student entering the program in general administration will be required to complete 18-21 hours in addition to the nine-12 hours of core requirements. The 18-21 hours emphasis is to be selected from the following courses:

Govt. 403G—Field Studies in Politics  
 Govt. 410G—Seminar in National Government  
 Govt. 411G—Seminar in State and Local Government  
 Govt. 440G—Public Administration  
 Govt. 441G—Public Personnel Administration  
 Govt. 510—Seminar in National Government  
 Bus. Ad. 500—Business, Government and Law  
 Bus. Ad. 510—Organization Theory  
 Bus. Ad. 511—Management Science I  
 Bus. Ad. 512—Management Science II  
 Soc. 575—Complex Organizations  
 Legal Area 424—Administrative Law  
 Govt. 580—Directed Studies

The student entering the program in urban administration will be required to complete 18-21 hours in addition to the nine-12 hours of core requirements. The 18-21 hour emphasis is to be selected from the following courses:

- Govt. 403G—Field Studies in Politics
- Govt. 410G—Seminar in National Government
- Govt. 411G—Seminar in State and Local Government
- Govt. 440G—Public Administration
- Govt. 417G—Urban Political Systems
- Bus. Ad. 510—Organization Theory
- Soc. 410G—Urban Sociology
- Soc. 575—Complex Organization
- Geog. 480G—Urban Geography
- Govt. 580—Directed Studies

#### Master of Arts in Education (Government major or minor)

This program provides additional graduate coursework in government while being designed for the public school teacher. The student following this program must meet all requirements for Standard High School certification. The student majoring in government may take a minimum of 18 or a maximum of 21 hours in government, while the student minoring in government may take a minimum of 12 or a maximum of 15 hours in that department. The remaining hours will be taken in professional education courses.

#### Graduate Courses in Government:

- 510. Problems in National Government. Three hours.**  
Research, reports, and discussion of selected aspects of national government.
- 511. Seminar in State and Local U.S. Government. Three hours.**  
A study of selected problems at all levels of U.S. Government.
- 520. Seminar in Public Law. Three hours.**  
A systematic exposition, discussion, and analysis of selected concepts and issues in jurisprudence, and/or in administrative, constitutional, and international law.
- 530. Seminar in Political Theory. Three hours.**  
An intensive analysis of selected topics in political theory for graduate students.
- 540. Seminar in Public Administration. Three hours.**  
Research and discussion of selected problems in Public Administration.  
**Required in Master of Public Service degree.**

- 550. Seminar in International Relations. Three hours.**  
Advanced study, individual and group, of theories and practical applications of international relations in the modern world.
- 560. Seminar in Comparative Government. Three hours.**  
Advanced study and research in the areas of democratic and totalitarian governments.
- 580. Directed Study. Three hours.**  
Faculty guidance of student research and study of one or more selected fields of political science.
- 590, 591—Thesis Writing. Three hours each.**

**The following 400-level courses may be taken for graduate credit:**

- 401G. Methods of Political Inquiry. Three hours.**  
Prerequisite: Basic courses in Government.  
A systematic analysis and description of the logic and procedures necessary for valid political inquiry.
- 403G. Field Studies in Politics. One to four hours.**  
Prerequisite: Government 401.  
This course is designed to involve students in practical problems of political research. As such, students will be directed through the design and execution of a major field study.
- 410G. Seminar In National Government. Three hours.**  
Prerequisite: Government 110 or permission of the instructor.  
Research, reports and discussion of selected aspects of national government.
- 411G. Seminar In State Government. Three hours.**  
Prerequisite: Govt. 110 or permission of the instructor.  
Research, reports and discussion of selected aspects of state government.
- 417G. Urban Political Systems. Three hours.**  
Prerequisite: Government 110 or 210 or permission of instructor.  
Analyzes contemporary American urban political systems; focuses on socio-economic values in the urban political culture and how they relate to political structures and activities; selected urban problems reviewed.
- 423G. Jurisprudence. Three hours.**  
Prerequisite: Two courses in Political Theory.  
An analysis and exposition of the nature of law; of the origins, evolutions and characteristics of the common and Roman law systems; of principal schools of legal theory and of the arrangement, methods and processes of the law.
- 424G. Administrative Law. Three hours.**  
Prerequisite: Junior standing and permission of instructor.  
A study of the development of and trends in administrative law with emphasis on the problems caused by the exercise of quasi-legislative and quasi-judicial powers by administrative agencies, including the right, duties and liabilities of public officials, relief against administrative action, jurisdiction, conclusiveness and judicial control.

## Government

**431G. Normative and Empirically-Related Theory. Three hours.**  
Prerequisite: One political theory or philosophy course or permission of the instructor.  
An analysis of the structure and function of normative (or value) theories, of empirically-related (or scientific) theories and the role they play in the study of politics.

**432G. Early Political Theory. Three hours.**  
Prerequisite: Permission of the instructor.  
The development of political ideas in the Western tradition from Plato through Thomas Aquinas. (Fall)

**433G. Modern Political Theory. Three hours.**  
Prerequisite: Government 432 or permission of the instructor.  
A continuation of Government 432 from Machiavelli to the present-day theorists. (Spring)

**434G. Contemporary Political Theory. Three hours.**  
Prerequisite: Government 432 or 433 or permission of the instructor.  
Selected aspects of contemporary political thought. (Spring)

**435G. American Political Theory. Three hours.**  
Prerequisite: U.S. History—6 hours.  
A study of American political theory from Puritanism to present.

**440G. Public Administration. Three hours.**  
Prerequisite: Government 110 or permission of instructor.  
Basic survey of governmental administration in the U.S.; administrative theory emphasized and related to practices in personnel and financial management; public control and responsibility in administration examined against changing administrative roles. (Each Semester)

**441G. Public Personnel Administration. Three hours.**  
Prerequisite: Government 340.  
The civil service in the U.S.—national, state and local; concept and development of the merit system; administration of recruitment, classification, training and other aspects of personnel in government.

**461G. Government and Politics of the U.S.S.R. Three hours.**  
An analysis of government and politics of the Soviet Union that seeks to explain the rise, sources and nature of communist ideology, institutional character; the theories, structure and functioning of the Communist Party of the Soviet Union. (Spring)

**462G. Latin American Governments and Politics. Three hours.**  
Prerequisites: Government 100 or 110 or permission of the instructor.  
A comparative study of basic governmental and political processes in the political systems of Latin America. Emphasis on social and economic problems, political development, leadership recruitment, political instability and change. (Fall)

## Government/Health and Safety

**463G. Politics of the Developing Nations. Three hours.**  
Prerequisite: Permission of the instructor.  
A study of the political culture, processes and problems of nations that have become independent since World War II. (Fall)

**464G. African Governments and Politics. Three hours.**  
Prerequisite: Government 463 or permission of the instructor.  
A comparison of political and cultural legacies from the colonial period: the process of nation-building in Africa; the status of minorities; efforts to bring about Pan-African unification. (On demand)

**465G. Middle Eastern Governments and Politics. Three hours.**  
An analysis of the governmental and political processes of the Middle East with emphasis on Iran, Israel, Turkey and the United Arab Republic. (Fall)

**466G. Far Eastern Governments and Politics. Three hours.**  
Prerequisite: Government 100 or 201 or permission of the instructor.  
A study of the emergence of new structures of political power in the Far East, viewed against the background of traditional institutions and in relation to broader processes of social change. (On demand)

**467G. South and Southeast Asian Governments and Politics. Three hours.**  
Prerequisite: Six hours of Government or permission of instructor.  
Introduction to the organization, operations, external relationship and underlying political philosophies of leading nations of the Asian Subcontinent and Southeast Asia. (On demand)

**468G. International Relation of Middle East. Three hours.**  
Studies of relations between states in the area and their individual and collective relations with international organizations and with the Soviet and the Western blocks. (Spring)

## HEALTH AND SAFETY

### Graduate Faculty:

Professor: Kirchner

Associate Professors: Dunn (Head of Department), M. Lockwood

Assistant Professors: Baum, Gorski, Lohr

### Degrees Offered:

Master of Arts in Education (Health minor); Master of Arts in Education (Health and Safety minor)

The program leading to the Master of Arts in Education with a minor in health is designed to prepare students for positions as: (1) health educators in junior and senior high schools, (2) coordinators of

## Health and Safety

school health programs, (3) administrators and supervisors of school health programs, and (4) health educators in community health agencies. *The following courses are required: Health 545, and 567.* Other courses must be selected from those listed below to total 12 to 15 hours in health education. The program leading to the Master of Arts in Education with a minor in health and safety is designed to prepare students for positions as: (1) teachers of driver education and health in high schools, (2) coordinators of school health and safety programs, and (3) administrators of health and driver education programs. *The following courses are required: Health 545 and 567, and Safety 471 and 570.* An additional course may be selected from the courses listed below.

Students following either of these programs must meet all requirements for Standard High School certification.

### Graduate Courses in Health and Safety Education:

#### Health Courses

##### 501. Analysis of Research in Health. Three hours.

A critical analysis and review of selected studies in health literature related to methods, materials, techniques, and planning of research studies used and conducted by the profession.

##### 520. Interpretation of Health Data. Three hours.

Application of statistical techniques to health data. Basic principles and techniques in designing and analyzing health problems are emphasized.

##### 530. Independent Investigations in Health. One to three hours.

Prerequisite: Health and Safety 520.

Special research problems or projects of organizational, administrative, or supervisory nature in the area of health.

##### 545. The Health Education Curriculum. Three hours.

Prerequisite: Education 580.

For health educators and administrators. Consideration of various health curriculum guides and curriculum studies in health education. Laboratory work in construction of curriculum guides.

##### 546. Field work in Community Health Programs. Three hours.

Study of the philosophy, organization, and services of community health organizations. Includes observation of, and participation in, local community health programs in voluntary and governmental health agencies.

##### 567. Administration and Supervision of Health Programs. Three hours.

This course examines the responsibilities, activities, and problems of administering and supervising health programs. Emphasis will be placed on coordinating all health programs within, and among, the school and other community agencies.

## Health and Safety

##### 570. Administration and Supervision of Safety Programs. Three hours.

This course examines the responsibilities, activities, and problems of administering safety programs. School and community safety programs, driver and traffic safety programs, and bus transportation will be discussed. A thorough examination of the operational procedures of safety programs on the high school, college, city, and state levels will be conducted.

**The following 400-level courses may be taken for graduate credit:**

##### 460G. School and Community Health Workshop. Three hours.

Coordination of school and community health programs and personnel in seeking solutions for common health problems. Sponsored jointly by the Kentucky State Department of Health, Kentucky State Department of Education and Western Kentucky University. Includes field trips to health agencies.

##### 461G. School Health Organization. Three hours.

Presenting standards and criteria for the three phases of the school health program; health services, healthful school environment and health instruction. Discussion of the role of administrators, teachers, counselors and health service personnel in conducting and coordinating the total school program. Includes visitation in public schools.

##### 465G. Health and Safety in the Elementary School. Three hours.

Prerequisite: Three hours of health.

An exploration of the nature and purpose of school health and safety in the elementary school, including curriculum development, instructional content areas, appraising students' health, and evaluation.

##### 469G. Critical Issues in Health and Safety. Three hours.

Prerequisites: Health 260, 361, Psychology 250.

Analysis of current health problems from both school and community viewpoints. The purpose of the course is to permit in-depth exploration, through research and discussion, of specific local, national and world wide health and safety problems.

##### 481G. Environmental Factors of Health Problems. Three hours.

This course examines the environment and its relationship to disease causation. Physical, chemical, biological and behavioral-sociological factors of man's environment will be discussed. Areas of concentration include the ecology of health and disease, air and water pollution, insect vector and rodent control, housing, noise pollution, population imbalance and consumer protection. Includes field trips.

##### 482G. Principles of Epidemiology. Three hours.

The basic principles of epidemiology are presented in this course. Epidemiologic methods are applied to both infectious and noninfectious diseases. This course offers the opportunity for critical analysis of the epidemiologic process in solving various classical epidemics. Epidemiologic methodology is also used to analyze modern health problems.

## Health and Safety/History

### **470G. Driver Education and Traffic Safety II. Three hours.**

Prerequisite: Safety 370 or equivalent.

Through supervised teaching experience, competence in developing and projecting skills and techniques as well as transferring the necessary driving knowledge, driving skills and inspiring satisfactory driving attitudes in students.

### **471G. Advanced Studies in Driver Education. Three hours.**

Prerequisite: Safety 370 or equivalent.

Analysis of driver education programs with specific interests on modern instructional programs, simulated training techniques and range operations.

## **HISTORY**

### **Graduate Faculty:**

Professors: Bennett, Calloway, J. C. Crowe, Harrison, Jackson, Minton, Thacker, Troutman (Head of Department)

Associate Professors: Lucas, Murphy, Neat, Thompson

Assistant Professors: C. Crowe, Harrington

### **Degrees Offered:**

Master of Arts in History, Master of Arts in Education (History major or minor), Master of Arts in College Teaching, Specialist in College Teaching.

### **Master of Arts in History**

This program is designed to prepare students for the teaching of history on the junior or senior college level; to provide the initial stage on the graduate level for those people who intend to pursue a doctoral degree; and to enhance the preparation of secondary teachers of history who desire such a program while meeting certification requirements.

In addition to meeting general Graduate College requirements, a student must present a major or minor in history with approximately a B average in this field, and a 2.5 (4.0) overall average.

Unity of purpose in planning the program is a necessity. A student who has an undergraduate major in history may be permitted to take six-nine hours of his graduate work in a related field in courses approved by his graduate advisory committee. A student who presents an undergraduate minor in history must complete the entire Master's program in the field of history.

## **History**

Either History 450G (American Historiography) or History 451G (European Historiography) is required, unless this requirement has been met previously.

A minimum of 24 hours acceptable course work must be completed with a grade-point average of at least 3.0. In addition, an acceptable thesis equivalent to six graduate hours is required. This thesis, directed by the chairman of the student's graduate committee, must conform to basic rules of historical research and must indicate use of primary resources.

The ability to use a modern foreign language must be demonstrated in accordance with rules of the Graduate College.

A final examination over courses, thesis, and related materials must be satisfactorily passed.

### **Master of Arts in Education (History major or minor)**

This program, designed for the public school teacher, provides additional graduate coursework in history. The student following this program must meet all requirements for Standard High School certification. The student majoring in history may take a minimum of 18 or a maximum of 21 hours in history, while the student minoring in history may take a minimum of 12 or a maximum of 15 hours in that department. The remaining hours will be taken in professional education courses.

### **Master of Arts in College Teaching**

The purpose of the program is to train prospective teachers of history at the community and junior college levels. In addition to preparing the student academically, emphasis is also placed on preparing him for the actual classroom situation.

Requirements for admission to the MACT program are the same as for admission to the Master of Arts in History program.

A minimum of 30 hours is required, distributed as follows:

- 9 hours in European history, chosen with approval of advisor
- 9 hours in American history, chosen with approval of advisor
- 3 hours in historiography, unless this requirement has been met previously
- 3 hours in seminar in college teaching
- 6 hours of electives (9 hours if the historiography requirement has been met previously)

**Specialist in College Teaching**

The specialist degree program is designed for those who wish to pursue work beyond the master's level and who do not expect to earn the doctorate. The program involves additional academic courses, a practicum in college teaching, and a specialist project.

In addition to meeting general Graduate College requirements for admission, an applicant for a Specialist Degree must have completed at least 18 hours of graduate work in history with a minimum grade point average of 3.25.

A student may, with the prior approval of his graduate advisor, take a minor of six to nine hours in a related field provided he will have had at least 48 graduate hours in history upon completion of the Specialist Degree.

A three hour practicum in college teaching is required unless the student has already taken History 640 (Seminar in College Teaching) in the Master of Arts in College Teaching program.

The specialist project may be a field project, a creative study, or more formal types of research and study culminating in a scholarly written report embodying the results of the project. The project carries three or six hours of graduate credit as determined by the student and his graduate committee.

**History and the Humanities Program**

History is also an integral part of the program for the Master of Arts in Humanities. As a general rule, students who enroll in graduate courses in history under the Humanities program must have 18 hours of history as a prerequisite.

**Graduate Courses in History:****500. Cultural and Social Aspects of American Life. Three hours.**

This course is designed for graduate students who have majored as undergraduates in the field of elementary education. Its purpose is to acquaint the student with the general trends and factors in American life. (Offered on demand)

**501. European History for Secondary Teachers. Three hours.**

An overview of European history with special emphasis on bibliography, documents, historical interpretations and materials that are deemed useful for secondary teachers of history. (Summer and on demand)

**502. United States History for Secondary Teachers. Three hours.**

An overview of United States history with special emphasis on bibliography, documents, historical interpretations and materials deemed useful for secondary teachers of history. (Summer and on demand)

**515. Nineteenth Century Britain. Three hours.**

An intensive study of the political, economic, social, and intellectual developments within Britain and her empire from 1815 until 1914. (Offered spring semester)

**517. United States and Latin American. Three hours.**

An intensive study of the relations between the United States and Latin America with emphasis on Mexico, Brazil, Argentina, Chile, and Columbia. (Offered on demand)

**521. United States 1900-1945. Three hours.**

A study emphasizing the progressive era, First World War, the failure of peace, the great depression, and the New Deal. (Offered spring semester)

**525. Social and Intellectual History of the U.S.: Nineteenth Century. Three hours.**

With the colonial experience as a background, emphasis is on nineteenth century thought and how it produced our social, economic, and political institutions. (Offered fall semester)

**526. Social and Intellectual History of the U.S.: Twentieth Century. Three hours.**

With the nineteenth century experience as a background, emphasis is on twentieth century thought. (Offered spring semester)

**527. Social and Intellectual History of Europe: Nineteenth Century. Three hours.**

An examination of the political, socio-economic, and religious thought of the nineteenth century and a study of its influence on the society of the period. (Offered fall semester)

**550. Thesis Research. Three hours.**

Research, examination, and criticism of historical materials and the writing of a thesis. (Offered on demand)

**551. Thesis Writing. Three hours.**

A continuation of 550. (Offered on demand)

**605. Seminar in Ancient History. Three hours.**

An intensive study of a particular area or aspect of the ancient world, with particular emphasis upon Greek and Roman history. The course may be repeated once for credit. (Offered on demand)

**606. Seminar in European History. Three hours.**

Problems will be developed around a limited central theme. A graduate seminar in such diverse areas as the Middle Ages, the Renaissance, and the Reformation. The course may be repeated once for credit. (Offered on demand)

**619. Seminar in United States Diplomatic Relations. Three hours.**

A study of American foreign policy in the periods 1914-45 and 1945 to the present. The course may be repeated once for credit. (Offered on demand)

**622. Seminar in Western United States History. Three hours.**

Major emphasis is on one specific aspect of Western United States history or a particular period such as the farmer's frontier, transportation, the cattle frontier. The course may be repeated once for credit. (Offered on demand)

## History

### 630. Seminar in United States History. Three hours.

Problems will be developed around a limited central theme. A graduate seminar in such diverse areas as Colonial America, the Confederation Period, the Federalist era, the Jeffersonian Republicans, the Slavery Controversy. The course may be repeated once for credit. (Offered spring semester)

### 631. Seminar in Kentucky History. Three hours.

A study of the political, economic, social, and cultural development of the state from pioneer days to the present. (Offered fall semester)

### 640. Seminar in College Teaching. Three hours.

Designed to acquaint the student with the college teaching situation with emphasis on course organization, lecture preparation, professional development, ethics, testing procedures, and library development. (Offered on demand)

### 650. Specialist Project. Three or six hours.

(Offered on demand)

The following 400-level courses may be taken for graduate credit when taught by a member of the Graduate Faculty.

### 400G. The Formative Period, 1776-1815. Three hours.

A study of the Confederation, the making of the Constitution and its development through the War of 1812. (Spring)

### 401aG. The Old South. Three hours.

A study of the economic, political, and social institutions prior to 1865. (Fall)

### 401bG. The New South. Three hours.

A study of southern institutional developments from reconstruction to the present. (Spring)

### 402G. The Middle Period, 1815-1850. Three hours.

A detailed study of the social, political and economic events from the War of 1812 through the War with Mexico. (Every semester)

### 403G. Civil War and Reconstruction, 1850-1877. Three hours.

A description of the background, military course, diplomatic, social and domestic events, and the significance. (Every semester)

### 404G. The Age of the Renaissance. Three hours.

A study of Western Europe during the period 1275 to 1520 with emphasis on political, social and religious developments. (Fall)

### 405G. The Age of the Reformation. Three hours.

A study of Western Europe during the period 1500-1648 with principal attention given to the religious conflicts of that time. (Spring)

### 408G. Tudor-Stuart England. Three hours.

A study of the principal political, economic, social, religious, and cultural developments in British history from the beginning of the Tudor dynasty in 1485 to the end of Stuart dynasty in 1714. (Every semester)

## History/Home Economics and Family Living

### 413G. England Since 1914. Three hours.

A detailed study of the political, intellectual, cultural and socio-economic developments that transformed England into a Welfare State and her Empire into a Commonwealth of Nations. (Fall)

### 415G. Colonial History of the United States. Three hours.

The founding and development of the colonies emphasizing political, social, cultural and economic institutions. (Every semester)

### 416G. The United States, 1870-1900. Three hours.

A study of industrialization, expansion, immigration, urbanization, organized labor movements and populism. (Every semester)

### 417G. The Mexican Republic. Three hours.

A study of Mexico from 1824 to the present. (Fall)

### 418G. Diplomatic History of the United States to 1900. Three hours.

An analysis of American diplomacy from the colonial period through the Spanish-American War. (Offered fall semester)

### 419G. Diplomatic History of the United States Since 1898. Three hours.

An analysis of American diplomacy from the Spanish-American War to the present. (Offered spring semester)

### 420G. Twentieth Century Russia. Three hours.

A survey of the decline of imperial Russia, the age of Revolution, and the maturation of the Soviet state. (Offered spring semester)

### 421G. The Far East. Three hours.

A survey with major emphasis on China, Japan and India in the Twentieth Century. (Offered spring semester)

### 423G. The French Revolution and Napoleonic Era. Three hours.

A survey of the period with special emphasis on the political, economic and social events leading to the birth of modern France. (Offered spring semester)

### 425G. Modern Germany. Three hours.

A survey of German history from the early Nineteenth Century to the present. (Offered fall semester—odd years)

### 426G. The Middle East in Modern Times. Three hours.

A survey of the political and cultural development of the Middle East since 1798 with special emphasis upon the rise of nationalism. (Offered fall semester)

### 450G. American Historiography and Historical Research. Three hours.

A study of the development of historical writing in the United States. (Offered fall semester)

### 451G. European Historiography and Historical Research. 3 hours.

A study of the development of historical writing in Europe with emphasis on the 19th and 20th centuries. (Offered spring semester)

### 459G. The Immigrant in American History. Three hours.

The role of immigrant groups in the building of the American nation from the colonial period to the present (Offered spring semester)

### 499G. Advanced Individual Study. Three hours.

Prerequisites: 3.0 average in at least 21 hours of history. A research problem or intensive readings directed by a faculty member. (Offered on demand)

## **HOME ECONOMICS AND FAMILY LIVING**

### **Graduate Faculty:**

Professors: Elbert, Floyd (Head of Department)

Associate Professors: Callaway, Fong, Hedges

Assistant Professors: Hayden, Jenkins, Russell

### **Degrees Offered:**

Master of Arts (Child Development and Family Living); Master of Arts in Education (Home Economics Education major or minor); Master of Public Service (Child Development and Family Living option); Specialist Degree in Education (Vocational Home Economics)

**The Master of Arts (Child Development and Family Living)** is a degree usually taken as an intermediate step preparatory to entry into a doctoral program leading to college teaching, therapeutic activity and/or research. In addition to Graduate College requirements, the student must present an undergraduate record of B in the behavioral sciences and related disciplines. Applicants who do not have the B average referred to above but whose total score on the Aptitude Tests of the Graduate Record Examination is at least 900 may be given provisional admission to remove these deficiencies.

The Master of Arts (Child Development and Family Living) student must complete research tool options as follows: (1) demonstrate ability to read subject material in either French or German; (2) specialized study in human biology and genetics; or (3) additional work in statistics and research methodology. The research tool must be approved by the Department Head.

The major requires 18 hours, and the remaining hours of the total of 30 must come from closely related studies in Counselor Education, Psychology, or Sociology. The 18 hours in the major are as follows: HEFL 491, 576, 577, 578, 579, and 580.

The remaining hours may be selected from the following:

Ed. 501. Educational Statistics

Ed. 558. Counseling Theory and Practice

Psy. 563. Test Construction and Psychometric Theory

Psy. 640. Psychopathology

Soc. 520. Studies in Family Relations

Soc. 590. Sociological Research Design and Analysis

**The Master of Arts in Education (Vocational Home Economics)** is a planned program for teachers wanting to acquire the Standard High

School Certificate. Applicants must have an undergraduate area of concentration in home economics education. Majors take 18-21 graduate hours in home economics and family living and 9-12 hours of professional education. Those taking a graduate minor in home economics education may take 12-15 hours in home economics and family living and 15-18 hours in professional education. Required courses for all home economics graduate majors are: HEFL 572, 573, and 574. Majors must take Education 540, and usually enroll in Education 576 and 577 unless a thesis is written. Approved electives in home economics and family living should total 9-12 hours and receive consent of the Department Head or his representative. Minors should elect 12-15 hours in subject matter areas of Home Economics and Family Living.

### **Master of Public Service (Child Development and Family Living Option)**

This degree is an interdisciplinary program consisting of offerings from several departments. It is designed to prepare individuals to serve in government positions which require administrative training as well as knowledge of the particular areas they are to administer.

The Master of Public Service (Child Development and Family Living option) stresses clinical practice and is generally taken by persons in child welfare, mental health, and pastoral care.

Core courses for the Child Development and Family Living Option of the Master of Public Service degree are:

\*Government 540. Public Administration.

Sociology 565. Studies in the Community.

Psychology 551. Social Psychology of Organization.

Education 558. Counseling Theory and Practice.

The 18 hours in the major are: HEFL 491, 576, 577, 578, 579, and 580.

**Specialist Degree in Education (Vocational Home Economics), See Department of secondary Education, page 174.**

### **Graduate Courses in Home Economics and Family Living:**

**572. Curriculum Development in Home Economics Education. Three hours.**  
Current curriculum trends in Home Economics Education and curriculum development in specialized fields of Home Economics are considered.

**573. Evaluation in Home Economics Education. Three hours.**  
Includes a study of theory and techniques of evaluation in Home Economics Education at different educational levels, analysis and refinements of in-

\*Required of all students.

## *Home Economics and Family Living*

struments, interpretation of results of self-evaluation and guidance, and effective administration programs.

**574. Supervision in Home Economics Education. Three hours.**  
Prerequisite: Teaching experience, advanced courses, and consent of instructor. Theory, principles and techniques of preservice and inservice training of teachers in home economics with emphasis on preparation of supervisory materials and evaluation.

**575. Individual Study in Home Economics Education. Three to six hours.**  
Includes a comprehensive study and evaluation of home economics investigations now available, and the experiences of planning and completing an individual study of limited scope.

**576. Theories of Child Development. Three hours.**  
Prerequisites: Undergraduate course in child psychology, child development, or human growth and development.  
Intensive and critical analyses of cognitive, social-learning, maturational, and psychoanalytic theories of human development.

**577. Seminar in Child Development Research. Three hours.**  
Prerequisites: HEFL 576 or equivalent preparation.  
An analysis of current theories and research findings relevant to the development of social, perceptual-cognitive, and physical-physiological processes in children.

**578. Seminar in Research in Marital and Family Therapy. Three hours.**  
Prerequisites: An undergraduate course in marriage and the family taught in home economics, education psychology, or sociology.  
Presentation and discussion of contemporary research being conducted by marital and family investigators in the fields of anthropology, biology, psychiatry, psychology, and sociology. Stress is placed upon the critical examination of existing field and laboratory studies.

**579. Professional Theories and Methods in Marital and Family Therapy. Three hours.**  
Prerequisites: Enrollment is by consent of department head and is restricted to graduate students in: (1) the clinical program in child development and family living; or (2) the disciplines of psychology, social work, or pastoral care. Lectures and demonstrations of contemporary theories and methods of treating couples, families, and groups who are experiencing dysfunctional family life. The contributions of Freud, Rogers, Satir, Wolpe, Ellis, and Adler are among those examined.

**580. Internship in Marital and Family Therapy. Three hours.**  
Prerequisites: HEFL 579 Professional Methods in Marital and Family Therapy. Counseling experience with spouses and/or families is provided for degree candidates during the final semester of enrollment. Assignments are made to approved private and public agencies.

**598. Special Topics in Home Economics and Family. One to Six hours.**  
Prerequisite: Consent of instructor.

**599. Thesis Research. Six credit hours.**

## *Home Economics and Family Living*

The following 400-level courses may be taken for graduate credit when approved by the Department Head:

**425G. History of Costume. Three hours.**  
Prerequisite: Consent of the instructor.  
Costumes from ancient times to present day; cultural and economic factors. (Lecture)

**428G. Merchandise Display and Promotion. Three hours.**  
Application of principles and practices in arranging and displaying merchandise for commercial and educational purposes; planning and executing sales promotions. Actual experiences. (Lecture-Laboratory-Field Trips)

**432G. Recent Developments in Textiles. Three hours.**  
New developments in textile field as reported in current literature. (Lecture.)

**433G. Fashion Fundamentals. Three hours.**  
Fashion as a social force. How the fashion world works; designers, leading markets, fashion cycles.

**434G. Advanced Clothing: Tailoring. Three hours.**  
Prerequisite: Home Economics and Family Living 130.  
Advanced techniques of tailoring are applied in construction of tailored garments. (Lecture-Laboratory)

**439G. Internship: Merchandising. Three hours.**  
Prerequisites: Major in Textiles and Clothing or Interior Design.  
Includes 8 weeks of supervised experience in an appropriate establishment in the area of textiles and clothing or in interior design.

**461G. Advances in Science of Nutrition. Three hours.**  
Individual study of past and recent literature and research concerned with foods and nutrition for various age groups and peoples. (Lecture)

**464G. Advanced Foods. Three hours.**  
Prerequisites: Home Economics and Family Living 261, Chemistry 107, or consent of instructor. Biology 207 recommended.  
Chemical, physical, and microbiological factors related to the behavior and characteristics of foods. (Lecture-Laboratory)

**465G. Diet Therapy. Three hours.**  
Prerequisites: Home Economics and Family Living 363, Microbiology, and Chemistry 309.  
Studies application of the principles of nutrition in the treatment of certain organic, functional, and metabolic diseases or conditions. (Lecture-Field Trips)

**466G. Experimental Foods. Three hours.**  
Prerequisite: Home Economics and Family Living 464, or consent of instructor.  
A study of ingredients and their function and factors involved in food preparation; evaluation of foods by objective measurements. (Lecture-Laboratory)

**491G. Family Life Education. Three hours.**  
Principles, practices and contents of family life education are taught to give an overview of the field in an educational setting. The primary purposes of the course are to enhance both the knowledge of content and the communication skills of public school and college teachers. It is designed to assist home

## Home Economics and Family Living

economics, psychology, sociology, and other teachers to present units and/or courses in family life education. Extension agents, social workers and members of the mental health professions might wish to enroll.

**492G. Institution Food Preparation. Three hours.**  
Prerequisite: Home Economics and Family Living 391 or consent of instructor.  
Basic food preparation principles applied to quantity food production and services and standardization of recipes and procedures. (Lecture, 1 hour-Practicum, 10 hours)

**493G. Institutional Purchasing. Three hours.**  
Prerequisites: Home Economics and Family Living 492.  
Considers principles and methods of buying food and supplies for various types of quantity food services, with emphasis on specifications, standards, inventory and factors affecting quality and cost control. (Lecture-Field Trips)

**494G. Applied Institution Administration. Three hours.**  
Prerequisites: Home Economics and Family Living 390 and 492.  
Standard methods of quantity food production, menu planning, food cost determination, job analysis and problems involved in institution administration. Actual administrative responsibilities under supervision are required. (Lecture, 1 hour-Practicum 10 hours)

**495G. Organization and Management of School Lunch Service. Three hours.**  
Prerequisites: Home Economics and Family Living 390, 494, and recommended Secondary Education 280 or Orientation to Education.  
Organization and management of single and multiple school lunch units, including menu planning, purchasing, records, equipment, and meal services. (Lecture-Laboratory-Field Trips)

**496G. Menu Planning and Merchandising for the Food and Lodging Industry. Three hours.**  
Prerequisite: Home Economics and Family Living 492.  
Includes menu planning for various types of group feeding, meeting nutritional needs of the different age levels, portion costs, menu pricing, and merchandising. (Lecture-Laboratory-Field Trips)

**497G. Food and Labor Cost Control. Three hours.**  
Prerequisite: Home Economics and Family Living 390 and Principles of Accounting or consent of instructor.  
Several aspects of concern to management are studied including: work management methods; the relationship of labor costs and merchandizing; food cost controls; portion control methods of purchasing and preparation; and application of effective accounting and inventory procedures. (Lecture)

## INDUSTRIAL EDUCATION

### Graduate Faculty:

Professor: Wendt

Associate Professors: Conley (Head of Department), Hackler, Hein, Pittman

## Industrial Education

### Degrees Offered:

Master of Arts in Education (Industrial Education major or minor); Specialist in Education (emphasis in Secondary Industrial Arts teaching)

In order to be admitted to the graduate program in Industrial Education, the student must meet the general Graduate College requirements and the requirements of the College of Education.

### Master of Arts in Education (Industrial Education major or minor)

This Master's degree program provides experiences which are designed to improve the competencies of persons who are teaching in or administering industrial education programs. The degree may also serve as the basis for entry into a specialist or doctoral degree program. The program is flexible to meet the needs of students with varying backgrounds and aspirations.

The student following this program must meet all requirements for Standard High School certification. (See Secondary Education for certification guidelines.)

The student *majoring* in industrial education would complete from 18 to 21 hours in that area and a minimum of nine hours in professional education. Those pursuing a *minor* take from 12 to 15 hours in industrial education and 15 to 18 hours in professional education. Interested individuals should contact the Industrial Education Department for advisement and counseling.

**Specialist in Education (Emphasis in Secondary Industrial Arts Teaching),**  
See Secondary Education, p. 174.

### Graduate Courses in Industrial Education:

#### 510. Investigations in Industrial Education. Three hours.

To provide an opportunity for graduate students to study current problems and/or issues in the area of industrial education under the direction of a graduate faculty member. The student will be required to identify, plan, and complete a minor research paper. (Offered Fall, Spring and Summer) Wendt.

#### 520. Philosophy of Industrial Education. Three hours.

To acquaint the student with the development of industrial education in Europe and America. Emphasis placed on influences, experiments, and current trends leading to modern practices in industrial arts, vocational education and technical education. (Offered Summer session and on demand) Conley, Hackler, Wendt.

#### 524. Organization and Teaching of Industrial Education for the Handicapped and Disadvantaged. Three hours.

Analysis of handicaps in relation to industrial education activities. Adapting

and implementing activities to the individual student's needs, abilities, and interests. Content will include a survey of current research and literature on the subject of the handicapped and/or disadvantaged, with special emphasis on the involvement of industrial education activities. (Offered on demand) Conley.

**525. Industrial Education Curriculum. Three hours.**

Includes the study of curriculum practices, concepts, and trends in industrial education; principles underlying curriculum development; and improvement of programs. (Offered Summer Session and on demand) Pittman, Wendt.

The following are designed as problem courses for independent study for the graduate student who desires to pursue a specific area. (Offered on demand)

Conley, Hackler, Hein, Pittman, Wendt.

**530. Advanced Drafting. Three hours.**

**532. Industrial Design. Three hours.**

**542. Industrial Electricity and Electronics. Three hours.**

**544. Wood Technology. Three hours.**

**548. Graphic Arts. Three hours.**

**552. Advanced Machine Shop. Three hours.**

**556. Power and Auto Mechanics. Three hours.**

**560. Metal Technology. Three hours.**

**564. Problems in Crafts. Three hours.**

**568. Ceramics and Plastics. Three hours.**

**572. General Shop. Three hours.**

**600. Thesis—Industrial Education. Six hours.**

The following 400-level courses may be taken for graduate credit:

**410G. Industrial Arts Problems. Three hours.**

Prerequisite: senior or graduate standing in Industrial Ed.

This course provides an opportunity for individual study and/or research relative to problems in industrial education. Prior approval necessary before registering for this course. (Fall, Spring, Summer)

**430G. Plastics Mold Design and Construction. Three hours.**

Prerequisites: Industrial Education 130, 131 or consent of instructor. Students will be introduced to plastics mold design as it is related to the physical characteristics of plastics, molding techniques and mold construction methods. Units of study will include: mold design for each of the major processing techniques, electrical discharge machining, electroforming, pantograph milling, plaster tooling, hobbing and wood fabrication. Each student will be expected to complete a minor research project. Recitation and laboratory. (On demand) Hackler

**439WG. Workshop in Industrial Education. Three hours.**

Special short course on problems in Industrial Education and Technology. When offered for graduate credit special approval is sought from the Graduate Council.

**450G. Planning Industrial Education Facilities. Two hours.**

Principles and practices underlying the planning and designing of shops and laboratories for vocational-industrial and technical education. (Summer)

**452G. Advanced Machine Woodwork. Three hours.**

Prerequisite: Industrial Education 260

Advanced work is planned to familiarize the student more thoroughly with woodworking technology. Emphasis is placed upon special cuts, jigs, sharpening, adjustments, care of machines, and a study made of methods of wood fabrication. Recitation and laboratory. (Summer)

**460G. Seminar in Vocational-Industrial and Technical Education. Three hours.**

Individual and group investigations of current problems and issues in the field of vocational-industrial and technical education. Each student will be expected to plan and complete a minor research project and present his findings to the seminar. (Fall) Hein

**464G. The Organization and Supervision of Vocational-Industrial and Technical Student Teaching. Two hours.**

This course is designed to acquaint student teacher supervisors with the philosophy, theory and practices which are essential in an effective Student Teaching Program. Attention is given to vocational-industrial and technical accreditation and certification standards, personal and professional relationships and evaluation of student teachers. (Summer) Hein

**465G. Industrial Arts for Elementary Teachers. Three hours.**

A course designed for elementary teachers and those preparing to enter the field of elementary education. The course involves a study of the philosophy, purposes, organization and correlation of industrial arts activities as they apply to the elementary school program. Recitation and laboratory. (Summer)

**490G. Organization and Teaching of Industrial-Technical Subjects in the Multiple Activities Laboratory. Three hours.**

To acquaint students with the procedures and techniques for simultaneously conducting a number of different industrially oriented subjects and occupational orientation activities. Coordinating activities, rotating students, preparing and using appropriate instructional materials, ordering and storing supplies and identifying and providing for individual differences are areas of concern. Activities will include study, discussion and practical involvement of the method in a typical setting. (On demand) Conley

**498G. Wood Products Technology. Three hours.**

A survey course with emphasis upon the basic structure and properties of wood as they relate to the manufacturing and utilization of modern wood products. Students will engage in laboratory experimentation and basic research relative to the topics under study. Lecture and laboratory. (On demand) Pittman

## LIBRARY SCIENCE

### Graduate Faculty:

Professors: Tyler, Wassom

Associate Professors: Carter, Guthrie (Head of Department), Simpson

### Degrees Offered:

Master of Science in Library Science, Master of Arts in Education (Library Science major or minor).

#### Master of Science in Library Science

This program is designed for those who are interested in the fields of public, academic, and school librarianship.

In addition to the general Graduate College requirements, a student must have:

1. A grade point average of at least 2.7 (based on the 4.0 system) for the final 60 semester hours of undergraduate work. Students having less than 2.7 may be admitted on a probationary basis on recommendation of the Department of Library Science.
2. A minimum combined score of 800 on the Aptitude Test of the Graduate Record Examination is required. Students with no GRE scores on file or with scores below 800 must complete or retake the GRE during the first semester of enrollment. Students whose GRE scores fall between 700 and 799 may be admitted if they have a cumulative grade point average of 3.0.
3. Six hours of approved prerequisite work in library science from among L.S. 401, 402, 406, and 408 or their equivalents are required. These prerequisites may be taken concurrently with graduate course work.

A student may select one of two program options:

Plan A. A minimum of 30 semester hours of graduate credit in courses approved by the graduate advisor, including six hours of thesis credit plus a research tool that will not count toward fulfillment of the minimum of 30 credit hours. At least one-half of the course work requirements must be completed successfully in courses open only to graduate students.

Plan B. A minimum of 30 semester hours of graduate credit in courses approved by the graduate advisor plus a research tool that will not count toward fulfillment of the minimum of 30 credit hours. At least one-half of the course work requirements must be completed successfully in courses open only to graduate students.

Up to six hours of the 30 hours minimum for either Plan A or Plan B may be selected from related fields such as literature, mass communications, history, or education when it will strengthen the individual student's programs.

The applicant must meet the research tool requirement by either (1) demonstrating that he has mastered appropriate research techniques (e.g., research methodology, computer programming, or statistics) approved by the student's graduate advisor, the department head, and the Dean of the Graduate College, or (2) demonstrating the ability to read a modern foreign language.

#### Master of Arts in Education (Library Science major or minor)

In order to be admitted, the student must meet the general Graduate College requirements. The courses in Library Science should be selected from 400 and 500-level courses.

#### Elementary Education major with Library Science as an Area of Specialization:

When approved by the student's graduate advisory committee, 12 to 15 hours in the curriculum for elementary teachers leading to the Master of Arts in Education and Standard Elementary Certificate will count toward certification as a public school librarian, but will not complete the requirements.

#### Secondary Education Curriculum with Library Science major or minor:

This program provides graduate course work in library science designed for the school librarian. The student following this program must meet all requirements for a Standard High School Certificate. The student majoring in library science may take a minimum of 18 or a maximum of 21 hours in library science, while the student minoring in library science may take a minimum of 12 or a maximum of 15 hours in that department. The remaining hours will be taken in professional education courses.

**Graduate Courses in Library Science:**

**501. Organization and Administration of the Instructional Materials Center. Three hours.**  
 Prerequisites: L.S. 401 and/or consent of instructor.  
 Role of the instructional materials center staff in the instructional process; relating the functions of management to the organization and administration of instructional materials centers; surveys of trends related to IMC. (Offered fall and alternate summers)

**506. Cataloging of Non-Book Materials. Three hours.**  
 Prerequisites: L.S. 406 or equivalent.  
 Covers the classification and cataloging of motion pictures, filmstrips, slides, transparencies, phono-records, pictures, manuscripts, maps, microforms, computer tapes, kits, etc. (Offered spring and alternate summers)

**508. Advanced Reference. Three hours.**  
 Prerequisites: L.S. 408 or equivalent.  
 An advanced course covering materials not studied in basic reference. Reference materials in the humanities, the social sciences, in history and area studies, in the pure and applied sciences, and some general reference works in bibliography and library science. (Offered spring and alternate summers)

**509. Investigations in Library Science. Three hours.**  
 Prerequisites: Eighteen hours of library science; Education 500, Research Methods in Education or the equivalent; permission of graduate advisor in Library Science.  
 An independent investigation, under the direction of a faculty member, of a topic of interest to the student. The student will be expected to combine research methods with background from previous course work to produce a research paper. (Available each semester)

**515. Government Publications. Three hours.**  
 Prerequisites: L.S. 408 or equivalent.  
 Sources, types, and use of government documents, both state and federal, and their acquisition and organization for use. (Offered once each year)

**518. History of Children's Literature. Three hours.**  
 Prerequisite: None.  
 A study of the development of children's literature from the earliest times through the nineteenth century. Outstanding titles, significant writers and illustrators, publishers, translations, versions and adaptations are considered. (Offered once each year)

**520. Seminar in Public Libraries. Three hours.**  
 Prerequisite: L.S. 401, 406, and 408 or the equivalents.  
 Development, objectives, governance, populations served, inter-library relations, services offered, public relations, collection, quarters, finances, staffing, and methods of evaluating public libraries in the United States. Field trips may be required. (Offered once each year)

**530. Seminar in Academic Libraries. Three hours.**  
 Prerequisite: L.S. 401, 406, and 408 or the equivalents.  
 The development, objectives, organization and structure, nature of the collections and responsibility for their development, philosophy of library services, measurement and standards of library effectiveness in the academic library. Field trips may be required. (Offered once each year)

**590-591. Thesis Writing. Three hours each.**  
 Prerequisites: Research tool requirement satisfied; fifteen semester hours of graduate work completed; consent of graduate advisor.

**The following 400-level courses may be taken for graduate credit:**

**401G. Library Organization and Administration. Three hours.**  
 Problems in organizing and administering all types of media for access and use. Establishing and maintaining circulation and other essential library records, maintenance of the media collection, and service to juvenile and adult patrons. Field trips may be required. (Fall and Summer)

**402G. Libraries and Librarianship. Three hours.**  
 The library as an agency of communication; history of books and libraries; types of libraries; librarianship as a career; and library cooperation. Field trips may be required. (Fall and alternate Summer Semesters)

**403G. Books and Related Materials for Young People. Three hours.**  
 Principles of selection; aids in selection; reading interests; reading guidance; book talks; materials for information and recreation. Field trips may be required. (Fall and Summer)

**404G. The Library and the Computer. Three hours.**  
 Examination of basic concepts of computer technology and their application to library problems. Survey of developments in manipulation of information and implications of these for library operations. (Spring)

**406G. Classification and Cataloging. Three hours.**  
 Study of classification, descriptive cataloging, main entries, added entries, shelf list, printed cards and filing. Laboratory sessions in all areas covered. (Fall and Summer)

**407G. Literature for Young Adults. Three hours.**  
 Reading interests of young adults including adult titles, study in depth of several titles. Methods of working with young adults in public and school libraries. (Spring and alternate Summers)

**408G. Reference and Bibliography. Three hours.**  
 Study of bibliographies, periodical indexes, indexes to literary forms, biographical dictionaries, dictionaries, encyclopedias, yearbooks, almanacs, directories, atlases and gazetteers, and handbooks. (Fall)

**409G. Selected Topics in Library Science. One to three hours.**  
 Prerequisites: Permission of supervising faculty member. Study of a selected problem under the supervision of a faculty member. (Each Semester)

## Library Science/Mathematics

### 410G. Storytelling. Three hours.

Emphasis upon the importance of storytelling in work with children. The literature; criteria in selection of materials; practice in oral communication. (Each Semester)

Cross listed courses which can be elected for either education or library science credit:

### 445G. Audio-Visual Materials and Methods. Three hours.

See Department of Elementary Education.

### 446G. Selection, Acquisition and Evaluation of Non-Print Materials. Three hours.

See Department of Elementary Education.

## MATHEMATICS

### Graduate Faculty:

Professors: Bueker (Head of Department), Davis, Detwiler, Watson

Associate Professors: Barksdale, Feibes, Jones, Stokes, Wallace, Wells

Assistant Professors: Crawford, York

### Degrees Offered:

Master of Science in Mathematics; Master of Arts in College Teaching in Mathematics; Master of Arts in Education (Mathematics major or minor, Math-Science Area major)

In addition to general Graduate College requirements, the student in mathematics is required to meet special departmental requirements. A student's graduate program must be approved by a designated graduate advisor at the time of admission to the Graduate College. The student who is inadequately prepared for the program desired must make up, without credit toward a graduate degree, all required prerequisites. The following special departmental requirements apply to graduate programs in mathematics.

### Master of Science in Mathematics

A background equivalent to an undergraduate liberal arts major in Mathematics at Western is required. This must include at least one course from each of the following areas: linear algebra, abstract algebra, analysis or advanced calculus. (Math 318, 317, 332 at Western).

A minimum of 30 semester hours of approved course work and a research tool are required in accordance with the regulations of the

## Mathematics

Graduate College. The candidate for this degree may select either a thesis or a non-thesis program. The academic program for the non-thesis option is the same as that for the thesis option with the exception of the thesis itself, which carries a maximum of six semester hours credit. Courses in the following areas are required for this program (some of which may have been completed as an undergraduate): Real Analysis (Math 432, 532), Complex Analysis (Math 450), Algebra (Math 417, 517), Topology or Geometry (Math 439 or 423), Applied Mathematics (Six hours). A final examination (written and oral) is given to all candidates for this degree.

### Master of Arts in College Teaching in Mathematics

This program is designed for those students who intend to pursue careers in community college or junior college teaching. The course and admission requirements for this degree are the same as for the Master of Science in Mathematics except that a three hour internship course must be included in the thirty hours. This course is to be a supervised experience in college teaching. A research tool is required while the thesis is optional.

### Master of Arts in Education (Mathematics major or minor)

Options available under the degree program of Master of Arts in Education include a major in mathematics and a minor in mathematics which are designed for the public school mathematics teacher. The student following this degree program must satisfy all requirements for Standard High School certification. Adequate preparation for a major in mathematics consists of an undergraduate teaching major in mathematics which includes, in addition to a calculus sequence, course work in Linear Algebra and at least two of the following three areas: Abstract Algebra, Geometry, Analysis or Advanced Calculus. A student desiring to pursue a minor in mathematics should have completed at least an undergraduate teaching minor in mathematics with post-calculus course work including Linear Algebra and one of the aforementioned three areas.

Twenty-one semester hours of mathematics, including Math 423 and Math 417 or 432, are required for a major in mathematics. A minor in mathematics must include at least 12 semester hours of approved course work in mathematics.

**Graduate Courses in Mathematics:****500. Readings in Mathematics. One-Three hours.**

Prerequisite: Undergraduate major in mathematics.

Students read and present papers that have appeared (or have been accepted by) mathematical journals. Topics covered are determined by areas of interest of the respective students. Satisfactory completion of three hours in Mathematics 500 may be utilized to satisfy the research tool requirement for a Master of Science in Mathematics degree.

**517. Topics From Algebra. Three hours.**

Prerequisite: Math 417.

Theory of rings, fields, and vector spaces. Topics include: polynomial rings; principal ideal domains; unique factorization domains; field extensions; Galois theory.

**523. Topics from Geometry. Three hours.**

Prerequisite: Math 423 or permission of instructor.

Geometry of special lines and points; isometries; similarities; inversion; applications.

**529. Mathematical Statistics I. Three hours.**

Prerequisite: Math 332 or 334.

Probability models; combinatorial analysis; random variables and their distributions; moments of probability distributions; moment generating functions and sampling distributions.

**530. Mathematical Statistics II. Three hours.**

Prerequisite: Math 529.

Properties and determination of point estimation; interval estimation; testing hypothesis; multivariate normal distribution; nonparametric statistics and linear models.

**531. Advanced Differential Equations. Three hours.**

Prerequisites: Math 331, 332.

Power series solutions; existence and uniqueness theorems; stability and Liapunov's method; regular singular points; perturbations of periodic solutions.

**532. Real Analysis. Three hours.**

Prerequisite: Math 432.

Function spaces; additive set functions; outer measure; measurable functions; integration.

**535. Advanced Applied Mathematics I. Three hours.**

Prerequisite: Math 331, 332.

Eigenvalue and boundary value problems; orthogonal expansions in function spaces; classical polynomials; Sturm-Liouville theory; Fourier and Laplace transforms.

**536. Advanced Applied Mathematics II. Three hours.**

Prerequisite: Math 535.

Integral equations; calculus of variations; maximization of linear functionals; maximum gradient method.

**539. Topology II. Three hours.**

Prerequisite: Math 439.

Convergence; function spaces; complete spaces; homotopy; homology theory.

**550. Complex Analysis. Three hours.**

Prerequisite: Math 450 and 432.

Analytic continuation; conformal mapping; Riemann surfaces; univalent functions.

**560. Functional Analysis. Three hours.**

Prerequisite: Math 432.

Abstract approach to linear problems; general theorems on linear operators; spectral analysis.

**570. Advanced Topics in Operations Research. Three hours.**

Prerequisite: Math 432, 470 or consent of instructor.

In depth study of one or two areas of operations research, emphasizing mathematical aspects. Topics include: theory of Markov chains; dynamic programming; forecasting and prediction of discrete time series; linear programming; stochastic processes; game theory and Leontief models.

**590. Special Topics in Mathematics. Three hours.**

Prerequisite: Mathematics 432.

**599. Thesis Research. Three hours.****Additional 500-level courses acceptable for the Master of Arts in Education:****501. Introduction to Probability and Statistics I. Three hours.**

Prerequisite: Permission of instructor.

Combinations and permutations; basic theorems of probability; mathematical expectations; random variable and basic probability distributions; central limit theorem.

**502. Introduction to Probability and Statistics II. Three hours.**

Prerequisite: Math 501.

Review of linear algebra; Markov chains; decision theory; linear programming and game theory.

**503. Introduction to Analysis. Three hours.**

Prerequisite: Permission of instructor.

This course examines some of the more important topics usually discussed in the elementary calculus sequence, thus helping to prepare the student to teach such material in the secondary school system. Introductory material including logic, set theory, and functions is provided. Calculus topics covered will include sequences, series, limits, continuity, the derivative, and the Riemann integral.

**504. Computer Applications to Problems in Mathematics. Three hours.**

Computer techniques and solutions of problems from diverse areas of mathematics including calculus, applied statistics, simulation, linear programming, game theory and linear algebra.

**The following 400-level courses may be taken for graduate credit:**

**405G. Numerical Analysis I. Three hours.**

Prerequisites: C.S. 240, M318 or 410.

Roots of equations, linear operators, polynomial approximation, interpolation, numerical differentiation and integration, difference equations, and numerical solution of initial value problems in ordinary differential equations. Algorithmic computer solutions of problems will be required. (Fall)

**406G. Numerical Analysis II. Three hours.**

Prerequisites: M405 and M334 or 332.

The solution of linear systems by direct and iterative methods, matrix inversion, the calculation of eigenvalues and eigenvectors of matrices. Boundary value problems in ordinary differential equations. Algorithmic computer solution of problems will be required. (Spring)

**413G. Algebra for Elementary Teachers. Three hours.**

Prerequisite: Math 102 or 303 or equivalent.

Properties of real numbers, linear equations and inequalities, systems of equations, complex numbers, algebraic structures. This course is for elementary education majors only. (Every other year)

**417G. Algebraic Systems. Three hours.**

Prerequisite: Math 317.

Theory of groups and rings. (Fall)

**423G. Geometry II. Three hours.**

Prerequisite: Math 323.

An axiomatic development of hyperbolic geometry based on the hyperbolic parallel postulate and the absolute geometry developed in Math 323, including emphasis on contrasts with Euclidean geometry. (Spring)

**429G. Probability and Statistics II. Three hours.**

Prerequisite: Math 329.

Sampling distributions from normal populations; point estimations, interval estimation; theory and application of hypothesis testing; regression and correlation; analysis of variance. (Spring)

**432G. Intermediate Analysis II. Three hours.**

Prerequisite: Math 332.

Elementary topological concepts; Riemann integral; differentiation; sequences and series of functions. (Spring)

**435G. Partial Differential Equations. Three hours.**

Prerequisite: Math 331.

Equations of first and second order; elliptic, hyperbolic and parabolic equations; Sturm-Liouville theory; applications to equations of mathematical physics using separation of variables and Fourier series. (Spring)

**439G. Topology. Three hours.**

Prerequisite: Math 332 or permission of instructor.

Orderings; topological spaces; mappings; separation axioms; compactness; connectedness; arcwise connectedness; metric spaces. (Spring)

**450G. Complex Variables. Three hours.**

Prerequisite: Math 332 or 334 or 410.

Complex number plane; analytic functions of a complex variable; integration; power series; calculus of residues; conformal representation; applications of analytic function theory. (Fall)

**470G. Introduction to Operations Research. Three hours.**

Prerequisite: Math 329 or 318 or consent of instructor.

Principles and techniques of operations research, including linear programming, queuing theory, inventory models, deterioration and replacement theory, sensitivity analysis and dynamic programming. (Spring)

## MUSIC

**Graduate Faculty:**

Professors: Carpenter (Head of Department), Pease

Associate Professors: Campbell, Livingston, Watson

Assistant Professor: Hill

**Graduate Degrees Offered:**

Master of Music; Master of Arts in Education (Music major or minor)

**Master of Music (Major in Performance)**

This program is designed for students who seek a career in performance, symphony orchestra, or private studio teaching in college or community. In addition to the general Graduate College requirements, a student pursuing this program must have a Bachelor's degree in music with an average point standing in music subjects of not less than 3.0. In addition, he is to demonstrate skills and capacities by examination in Music Theory, Music Literature and in the chosen area of performance.

A minimum of 30 graduate hours is required. Included in the 30 hours are 15 hours in the performance area; 12 hours selected from Music Literature, Theory, Composition, Orchestration or Music Psychology; and three elective hours. At least one course is required in both Music Literature and in Music Theory.

There is no foreign language requirement. Voice majors, however, are required to demonstrate ability to sing in English and three foreign languages. Any deficiency in this area may require extra course work. In lieu of a thesis, a full length public recital is required.

**Master of Arts in Education (Music major or minor)**

This program provides additional graduate coursework in music while being designed for the public school teacher. The student following this program must meet all requirements for Standard High School certification. The student majoring in music may take a minimum of 18 or a maximum of 21 hours in music, while the student minoring in music may take a minimum of 12 or a maximum of 15 hours in that department. The remaining hours will be taken in professional education courses. (Note: Education 535, Seminar in Music Education, is recommended as a part of the Education core—See p. 70 for course description). A typical program consists of a balanced selection of Music Education and Music Literature offerings. In addition, consideration is given to those with an interest in Music Theory, Instrumental Arranging, Applied Music (primary or secondary) or a related field.

**Graduate Courses in Music:****500. Seminar in Theory. Three hours.**

This course is concerned with the various procedures of outstanding theorists with major emphasis on contemporary theories.

**501. Analytical Techniques. Three hours.**

A study of the technique of harmonic and contrapuntal analysis in various styles of the 16th, 17th, 18th, and 19th centuries.

**510. The Teaching of Applied Music. Three hours.**

An investigation of pedagogical problems in a specific performance area of music including the examination of teaching materials and repertoire, theory and implementation of tone production and technique, psychology of studio teaching, interpretation, public performance preparation and program planning.

**511. Investigations in Music Education. Three hours.**

A study of the problems and methods of research in music education. Includes the application of pure and action research to given situations and the investigation of published research in music education.

**513. Directed Individual Study. Three hours.**

Research projects in music education on an individual basis.

**514. General Music in The Secondary Schools. Three hours.**

Training the music teacher to provide orientation experiences in the area of general music. The development of musical knowledge in junior and senior high school non-performers.

**515. Administration and Supervision of Public School Music. Three hours.**

An investigation of current trend in educational thought and the implications for administration, instruction and evaluation in public school instrumental music.

**530. Music Literature. Three hours.**

An investigation of a specialized area not covered extensively in other advanced music literature courses, e.g., "early musical notation," "the classical period," "art song repertoire" etc.

**531. Medieval and Renaissance Music. Three hours.**

A survey of musical style and form (ca. 500-1600).

**532. The Symphony. Three hours.**

The symphony from its beginning to the twentieth century with emphasis on listening and analysis.

**533. Twentieth Century Music. Three hours.**

A study of the principal trends in contemporary music with emphasis on listening.

**534. Opera. Three hours.**

A study of musico-dramatic forms from Greek lyric theater through contemporary opera.

**535. Baroque Music. Three hours.**

A survey of musical style and form (ca. 1600-1750) with special emphasis on the music of J. S. Bach.

**536. Nineteenth Century Music. Three hours.**

A study of musical romanticism from Hoffmann and Weber through Richard Strauss.

**537. Chamber Music. Three hours.**

A survey of the literature of small instrumental groups. Special emphasis on the sonata and string quartet.

**538. Directed Individual Study. Three hours.**

Supervised private research culminating in a scholarly paper or research report.

**539. Piano Literature. Three hours.**

A survey of piano literature up to and including the twentieth century.

**559. Graduate Recital. Two hours.**

A full length public recital required of candidates for the Master of Music Degree in performance.

**The following 400-level courses may be taken for graduate credit:****402G. Counterpoint I. Two to three hours.**

Prerequisite: Theory 201.

A course in Sixteenth Century polyphony. A study of the melodic and contrapuntal principles of style and form in Sixteenth Century choral music. Students compose two- and three-part compositions with and without text.

**403G. Counterpart II. Two to three hours.**

Prerequisite: Counterpoint I.

Continuation of Counterpoint I. Original compositions for three, four and five voices in the Sixteenth Century style.

## MUSIC

### 406G. Composition. Three hours.

Prerequisite: Consent of the instructor.

A continuation of Composition 306 with emphasis on the larger forms.

### 407G. Orchestration and Band Arranging. Three hours.

Prerequisite: Theory IV.

A study of the characteristics and techniques of the various orchestra and band instruments. Practical experience in scoring for full symphonic orchestra and symphonic band. Performances given for selected orchestrations and arrangements.

### 415G. Choral Methods. Three hours.

A course designed to furnish choral conductors with materials and methods of organizing, training and preparing vocal groups for performance. Special attention given to program building.

### 416G. Instrumental Methods. Three hours.

Organization of the school instrumental program; problems, materials and program planning for the school orchestra and band from the grades through high school; special problems in connection with concerts, festivals, materials and administrative details.

### 419G. History and Philosophy of Music in American Schools. Three hours.

The historic development and philosophy of music in American schools from its beginning to present day including: (1) trends in humanism, industrial age, progressivism, protest and reaction extending into the age of experience and experiment; (2) comparison of music in the United States with other countries and cultures; (3) individuals, associations, and institutions that shape the music program in American schools.

### 430G. Music Literature. Two to three.

A survey embracing music of several periods, styles and forms. Students are assigned special problems for intensive study.

### 431G. Medieval and Renaissance Music. Two to three hours.

A survey of musical style and form (ca. 500-1600).

### 432G. The Symphony. Two to three hours.

The symphony from its beginning to the Twentieth Century with emphasis on listening and analysis.

### 433G. 20th Century Music. Two to three hours.

A study of the principal trends in contemporary music with emphasis on listening.

### 434G. Opera. Two to three hours.

A study of musico-dramatic forms from Greek lyric theater through contemporary opera.

### 435G. Baroque Music. Two to three hours.

A survey of musical style and form (1600-1750) with special emphasis on the music of J. S. Bach.

### 436G. 19th Century Music. Two to three hours.

A study of musical romanticism from Hoffman and Weber through Richard Strauss.

## Music/Philosophy and Religion

### 437G. Chamber Music. Two to three hours.

A survey of the literature of small instrumental groups.

Special emphasis on the sonata and string quartet.

### 438G. Music of the Americas. Three hours.

An interdisciplinary treatment of the music of the United States, Canada, and Latin America, considered within the following categories: (1) aboriginal, ethnic, and folkish developments, (2) colonial music, (3) "art music" ca. 1800-1950, including relations with the European tradition, (4) ethnic, popular and mass media developments in the 20th century, (5) recent developments in experimental music, (6) the relation of music to hemispheric and global life styles, social, intellectual, and cultural developments.

### 439G. Music of the World's Peoples. Three hours.

An interdisciplinary investigation of the musical experience of man under various cultural situations. Thus, the following categories will be considered: (1) primitive man and his music, (2) the folk and folk song, (3) the music of Eastern cultures, (4) the West and its concert music.

### 440G. Choral Union. One hour.

### 441G. Choir. One hour.

### 443G. Band. One hour.

### 444G. Orchestra. One hour.

### 449G. Chamber Music. One hour.

### 445G. Madrigal Singers. One hour.

### 450G. Piano. Two hours.

### 451G. Voice. Two hours.

### 453G. Strings. Two hours.

### 454G. Organ. Two hours.

### 455G. Woodwinds. Two hours.

### 456G. Brasses. Two hours.

### 457G. Percussion. Two hours.

### 458G. Harp. Two hours.

## PHILOSOPHY AND RELIGION

### Graduate Faculty:

Professors: Mounce, Nash (Head of Department)

Associate Professors: Scott, Stahl, Tuck, Veenker

Assistant Professor: Vos

See Master of Arts in Humanities in Interdepartmental degree programs (p. 188), of which Philosophy and Religion is an integral part.

## *Philosophy and Religion*

In addition graduate courses in philosophy and religion are significant supporting areas in other graduate programs.

### **Graduate Courses in Philosophy:**

#### **500. Humanities Seminar. Three hours.**

A synthesis of the major ideas and movements in the fields of art, history, literature, music, philosophy, and religion during the contemporary period (1789-1970) of Western Civilization.

#### **501. Readings in Philosophy. Three hours.**

An intensive study of selected philosophic classics or readings in a selected area of philosophy. May be repeated for different topics.

#### **502. Seminar in Ancient and Medieval Philosophy. Three hours.**

Study of selected topics in ancient and medieval philosophy. May be repeated for different topics.

#### **503. Seminar in Modern Philosophy. Three hours.**

Study of selected philosophers or topics in modern philosophy. May be repeated for different topics.

#### **504. Seminar in Contemporary Philosophy. Three hours.**

Study of selected philosophers or topics in contemporary philosophy. May be repeated for different topics.

#### **598. Humanities Essay. Three hours.**

#### **599. Humanities Thesis. Six hours.**

The following 400-level Philosophy courses may be taken for graduate credit:

#### **400G. Contemporary Philosophy. Three hours.**

Prerequisite: Philosophy 120 or 130 or permission.

A critical and comparative survey of twentieth-century systems; idealism, pragmatism, positivism, neo-Thomism, existentialism, naturalism and dialectical materialism.

#### **401G. Readings in Philosophy. Three hours.**

Prerequisite: At least one course in philosophy.

An intensive study of selected philosophic classics or readings in a selected area of philosophy. May be repeated for different topics.

#### **405G. Existentialism. Three hours.**

Prerequisite: At least one course in philosophy or permission.

Readings from both the philosophical and literary sources of existentialism. The works of Kierkegaard, Nietzsche, Sartre, Jaspers, Heidegger, Kafka, Camus, Marcel and Tillich are included.

#### **420G. Philosophy of History. Three hours.**

Prerequisite: One course in philosophy or permission.

A survey of classic and modern theories about the nature, meaning and goal of history; criteria for the evaluation of historical data; representative philosophies of history: Augustine, Hegel, Marx, Spengler, Toynbee, Sorokin.

## *Philosophy and Religion*

#### **425G. Twentieth Century British Philosophy. Three hours.**

Prerequisite: One course in philosophy or permission.

An examination of the types of philosophical analysis which emerged between the two world wars and which have exerted such a great influence on recent philosophical thought in England and the United States. Included will be the contributions of Gilbert Ryle, John Wisdom, John Austin, P. F. Strawson, Bertrand Russell, G. E. Moore and Gottlob Frege.

#### **432G. Early Political Philosophy. Three hours.**

A survey of political philosophy from Plato through Thomas Aquinas. See Government 432.

#### **433G. Modern Political Philosophy. Three hours.**

Prerequisite: One course in philosophy or permission.

Political Philosophy from Machiavelli to the present. See Government 433.

#### **440G. Metaphysics and Epistemology. Three hours.**

Prerequisites: One course in philosophy or permission.

An intensive study of contemporary and classical views concerning such topics as: the mind-body problem, determinism, causation, God; recent and contemporary theories concerning the origin, nature and validity of knowledge.

#### **450G. Philosophy and Religion of the Middle Ages. Three hours.**

Prerequisite: One course in philosophy or religion or permission.

An intensive study of the religious and philosophical thought patterns of Western civilization during the Middle Ages. Emphasis on St. Augustine and St. Thomas Aquinas.

#### **499G. Research in Philosophy. Three hours.**

Prerequisite: Only for Philosophy majors in senior year.

Directed study and research in one area of philosophy. The research will culminate in an acceptable thesis.

### **Graduate courses in Religion:**

#### **501. Graduate Seminar in Religious Studies. Three hours.**

A topical seminar examining specific issues in one of the areas of concentration of religious studies. May be repeated for different topics.

The following 400-level Religion courses may be taken for graduate credit:

#### **400G. Contemporary Religious Thought. Three hours.**

Prerequisite: One Religion course or permission.

A seminar course in the writings of the creative theological minds of the Twentieth Century.

#### **401G. Religion Seminar. Three hours.**

Prerequisite: One Religion course or permission.

A seminar with rotating topics designed primarily for advanced students in religion. Course may be repeated for different topics.

#### **405G. Current Issues in New Testament Studies. Three hours.**

Prerequisite: Either 300, 301, or 305.

A study of one or more of the major literary-historical problems of New Testament studies and a consideration of the thought of one or more of the more influential contemporary New Testament scholars.

## Philosophy and Religion/Physical Education and Recreation

### 420G. The Age of the Apostles. Three hours.

Prerequisite: Religion 100 or 305 or permission.

An investigation of the historical and intellectual developments of the first century of Christianity (A.D. 30-150) and special study of selected relevant New Testament and early Christian documents.

### 440G. Judaism. Three hours.

Prerequisite: Junior standing.

An attempt to integrate the history, literature, religion, art and music of eastern European and American Jewry in order to provide the student with a cultural experience in Judaism. A field trip to a Nashville synagogue is required.

### 4456G. The Religious Traditions of Israel. Three hours.

Prerequisite: Six hours of religion (preferably 101 and 310) or permission. A study of the development of ancient sacred traditions of the Hebrew people and their formative influence upon the structure of the five books of Moses.

### 450G. Philosophy and Religion of the Middle Ages. Three hours.

See Philosophy 450.

### 499G. Research in Religion. Three hours.

Prerequisite: Open only to religion majors in their senior year. Directed study and research on one area of religious studies.

## PHYSICAL EDUCATION AND RECREATION

### Graduate Faculty:

Professors: Karsner, Kirchner, Oglesby (Head of Department)

Associate Professor: Jones

Assistant Professors: Kinnear, Laney, Little, Meadors

### Degrees Offered:

Master of Science in Physical Education; Master of Arts in Education (Physical Education major or minor); Master of Public Service (Recreation and Park Administration option)

Diversified programs leading to additional depth or breadth in a selected area of physical education and recreation are available to candidates for graduate degrees. A highly qualified staff and outstanding facilities complement these graduate offerings. Contemporary research and literature are fundamental in all courses. The department maintains laboratories for study of human motor behavior and physical performance and strong encouragement is given students to actively pursue personal research interests.

## Physical Education and Recreation

### Master of Science (M.S.) Degree in Physical Education

Although many candidates for a master's degree are interested in public school teaching, some students would receive greater benefit from a degree program with total concentration in Physical Education. The M.S. Degree in Physical Education has been designed to meet the needs of these individuals. Considerable leeway in course selection is available allowing the candidate to acquire great depth within this specific academic discipline. This program requires a demonstration of competency in use of a research tool. Candidates are encouraged to write a Master's thesis.

Required: PER 501

Selective with adviser's consent: 12-27 hours of Physical Education

Electives: 0-5 hours from allied areas

### Master of Arts in Education (Physical Education major or minor)

This program provides graduate coursework in physical education and recreation, and is designed for the public school teacher. The student following this program must meet all requirements for Standard High School certification.

#### Physical Education Major

Required: 15-21 hours in physical education including PER 501 and three courses to be selected from PE 502, 503, 504, 505 and 506. Remaining hours in physical education are electives.

Professional Education: Nine-15 hours (see Secondary Education).

#### Physical Education Minor

Required: 12-15 hours in physical education including six hours to be selected from PE 502, 503, 504, 505 and 506. Other physical education courses to be taken to allow a minimum of 12 hours.

Professional Education: 15-18 hours (see Secondary Education).

### Master of Public Service (Recreation and Park Administration Option)

This degree is an interdisciplinary program consisting of offerings from several departments. It is designed to prepare individuals to serve in government positions which require administrative training as well as knowledge of the particular areas they are to administer.

### Physical Education and Recreation

This program is a non-teacher certification plan with nine hours required in the public service core and 21 hours available in recreation and/or related areas. It is specifically designed to prepare individuals for positions of leadership in recreation and park administration.

*All candidates for the Master of Public Service degree (regardless of the option chosen) are required to complete a core area of 9 to twelve hours including Government 540—Public Administration (which is required of all).*

The remaining hours of the core may be selected from the following courses:

- Economics 550—Government Financial Policy and Administration
- Geography 580—Problems in Urban Geography
- Government 511—Seminar in State and Local Government
- Sociology 565—Studies in the Community
- Psychology 551—Social Psychology of Organizations

In addition to the core requirements, the following courses are within the recreation sequence: from which 15 hours may be selected: (for course descriptions, see page 149).

- P.E.R. 501—Analysis of Research in Physical Education and Recreation. Three hours.
- Rec. 513—Organization, Administration, and Supervision of Parks, Playgrounds, and Recreation Programs. Three hours.
- Rec. 515—Planning and Maintenance of Park and Recreation Facilities. Three hours.
- Rec. 517—Construction and Utilization of the Survey in Recreation. Three hours.
- Rec. 519—Fiscal Practices for the Administrator of Recreation and Parks. Three hours.
- Rec. 521—Public Relations for Parks and Recreation Programs. Three hours.
- Rec. 481G—Camp Administration and Outdoor Recreation. Three hours.
- Rec. 483G—Social Recreation. Three hours.
- Rec. 484G—Community Centers and Playgrounds. Three hours.

### Physical Education and Recreation

Rec. 485G—Development of Nature Oriented Areas and Facilities. Three hours.

Rec. 487G—Outdoor Education Leadership. Three hours.

Rec. 489G—Professional Field Experiences in Recreation and Parks. Three hours.

In addition, six hours may be selected from courses within the field of recreation or from allied areas.

#### General Graduate Courses:

**P.E.R. 501. Analysis of Research in Physical Education and Recreation.** Three hours.

A critical analysis and review of selected studies in the physical education and recreation literature related to methods, materials, techniques, and planning of research studies used and conducted by the profession. (To be taken in first term of enrollment at Western Kentucky University.) (Fall and Summer)

**P.E.R. 520. Interpretation of Physical Education and Recreation Data.** Three hours.

Prerequisite: PER 501. Application of statistical techniques to physical education and recreation data. Basic principles and techniques in designing and analyzing physical education and recreation problems are emphasized. (On demand)

**P.E.R. 530. Independent Investigations in Physical Education and Recreation.** One to three hours.

Prerequisite: PER 501 and consent of instructor. Special research problems or projects of organizational, administrative, or supervisory nature in the areas of physical education or recreation. (Each semester)

**P.E.R. 560. Thesis.** Six hours.

The master's thesis is to be directed by a member of the Graduate Faculty of the Department. (Each semester)

#### Graduate Courses in Physical Education.

**P.E. 502. Philosophical Bases of Physical Education and Athletics.** Three hours.

A comparative analysis of the influence of major educational philosophies upon physical education and athletics is made with a view to preparing the student to develop a practical and usable personal philosophy of modern physical education and athletics. (Fall and Summer)

## *Physical Education and Recreation*

### **P.E. 503. Motor Learning. Three hours.**

Prerequisite: Research Methods course.

A study of the theories and principles of learning as they apply to the acquisition of gross motor skills. Emphasis is placed upon the interpretation and practical application of experimental data.

### **P.E. 504. Physiological Bases of Motor Performance. Three hours.**

Application of physiological principles of motor activity. Inferences on improving instructional practices are presented.

### **P.E. 505. Foundations of Curriculum Construction. Three hours.**

Principles, procedures, and criteria for curriculum construction and revision, course building, and lesson planning in Physical Education. Critical evaluation of typical courses of study at various grade levels. The development of written guides is presented.

### **P.E. 506. Psychological Aspects of Sport and Performance. Three hours.**

Prerequisite: Research methods course.

A study of the various psychological parameters on sport performance.

### **P.E. 507. Sport in Culture. Three hours.**

An examination of the sports movement in America from a socio-cultural viewpoint along with an in-depth analysis of current problems and trends.

### **P.E. 510. Seminar: Facilities, Construction, and Equipment. Three hours.**

Principles, standards, practices and problems in planning, constructing, administering the building program, maintaining the facilities and in purchase and care of equipment. Includes such topics as evaluation of existing facilities, survey of needs, equipping the plant, program planning, development of educational specifications, selecting of an architect, and attaining efficiency and economy through design and construction.

### **P.E. 511. Theory in Administration and Supervision of Physical Education and Athletics. Three hours.**

A study of the implications of basic administrative theory and research for the administration of Physical Education and athletic programs.

### **P.E. 512. Seminar: Administration Problems in Physical Education and Athletics. Three hours.**

Organization and control over programs of physical education and athletics at various education levels. A discussion of controversial issues in physical education and in athletics and practice in seeking solutions to them.

**The following 400-level courses in Physical Education may be taken for graduate credit:**

### **454G. Problems and Trends in Elementary Physical Education. Three hours.**

An investigation of the current problems and trends in elementary school physical education.

## *Physical Education and Recreation*

### **490G. Evaluation in Physical Education. Two hours.**

Prerequisite: Education 340.

A survey of the field of testing in physical education, including a review of the literature on testing, scope of testing and its value. Practical work in the organization and administration of tests is included.

### **491G. Physical Diagnosis and Corrective Physical Education. Three hours.**

Recognition of abnormalities: exercise for correction.

## **Graduate Courses in Recreation:**

### **Rec. 513. Organization, Administration, and Supervision of Parks, Playgrounds, and Recreation Programs. Three hours.**

Detailed study of the organization and administration of recreation of federal, state, and local levels, financing budget, and personnel selection and supervision, departmental organization, administration practices, legislative provision, governmental controls, and correlation and integration of the entire recreation program into the culture and society of the community.

### **Rec. 515. Planning and Maintenance of Park and Recreation Facilities. Three hours.**

Principles and problems involved in planning and maintenance of park and recreation facilities are considered. Relationship of facilities to program needs are discussed. Field trips to areas and facilities are conducted.

### **Rec. 517. Construction and Utilization of the Survey in Recreation. Three hours.**

Planning, application, and evaluation of the survey as a means of determining recreation program needs in selected settings. Community recreation surveys are conducted as class projects.

### **Rec. 519. Fiscal Practices for the Administrator of Recreation and Parks. Three hours.**

Construction of the budget, financial record-keeping, purchasing procedures, personnel problems, and office management related to recreation constitute pertinent topics of the course. Insurance programs and legal problems are also included.

### **Rec. 521. Public Relations for Parks and Recreation Programs. Three hours.**

Effective communication among colleagues, program participants, and the public through the use of all types of audio-visual devices and techniques are encompassed in the course.

**The following 400-level Recreation courses may be taken for graduate credit:**

### **481G. Camp Administration and Outdoor Recreation. Three hours.**

Status, purpose, organization and administration of outdoor recreation programs for various types of agencies and camps. Topics include program planning, selection and training of staff and health and safety considerations. (Every semester)

## Physical Education and Recreation/Physics and Astronomy

### 483G. Social Recreation. Three hours.

Materials and techniques for planning, conducting and evaluating programs and activities relative to social events for groups of various sizes and ages in different social situations. (Every semester)

### 484G. Community Centers and Playgrounds. Three hours.

Various aspects of playground and community center operation. Teaching techniques; essential elements of programming; problems relating to operation and planning community recreation programs of various types. (Every semester)

### 485G. Development of Nature Oriented Areas and Facilities. Three hours.

A study of nature trail design and preparation, live and inanimate exhibit design and preparation, resources inventory, buildings, exhibit material purchase, vandalism and other problems related to the development of nature oriented areas and facilities. (Every semester)

### 487G. Leadership in Outdoor Education. Three hours.

A study of the importance of such elements as field trips, nature crafts, audio-visual aids and interpretive materials and programs in the development of outdoor education as a recreational activity. (Every semester)

### 489G. Professional Field Experiences in Recreation. One to eight hours.

Experience in recreation planning, leadership, supervision and program evaluation through work in community recreation and private agency programs. This in-service experience is supervised and controlled by University faculty members and personnel from area recreation agencies. (Every semester)

## PHYSICS AND ASTRONOMY

### Graduate Faculty:

Professors: Buckman, Russell, Six (Head of Department)

Associate Professors: Humphrey, Longmire, Moore

Assistant Professors: Coohill, Dorman, Parks, Wawrukiewicz, Wolff

### Degrees offered:

Master of Science in Physics; Master of Science in Engineering Physics; Master of Arts in Education (Physics minor)

The Department of Physics and Astronomy requires a grade point average of at least 3.0 to be admitted in good standing. Promising students will also be accepted; however, they may expect to be required to take some courses of a transitional nature if their undergraduate preparation is incomplete, in order to advance to the level of regular first-year graduate courses.

## Physics and Astronomy

The graduate programs in the Department of Physics and Astronomy are flexible to the extent that a student can select up to nine hours of related courses in biophysics, physical chemistry, geophysics, astronomy, or environmental science to prepare for a career in those fields which "bridge" two or more of the traditional disciplines.

**Master of Science in Physics.** The *Master of Science* degree is designed to prepare students to continue graduate work at the Ph.D. level in physics or some closely related discipline. The applicants should have physics preparation at the undergraduate level, extensive enough to include an intermediate course in mechanics (Stevenson or Symon), electricity and magnetism (Reitz and Milford), and modern physics (Weidner and Sells). Preparation in mathematics should include ordinary differential equations, vector analysis, and possibly functions of a complex variable.

The M.S. in Physics requires 30 semester hours, no more than six of which may be thesis research numbered 699. Each candidate for the M.S. in Physics is required to complete an acceptable thesis. At least half of the 24 hours of regular work must be in courses numbered 500 and above. At least 15 hours of the regular course work must be in the student's major field of study. All graduate students in physics must satisfactorily complete two of the three graduate "core" courses:

540—Electromagnetic Theory

550—Classical Mechanics

580—Quantum Theory

The student wishing to satisfy the language requirement must select either German, French, or Russian. If the student elects the research tool (eg., computer programming, statistics) in lieu of the language requirement, his choice of courses must have the approval of the chairman of his graduate committee and the departmental chairman.

A final examination (oral and/or written) is given to all candidates. Such an examination will include defense of the thesis and may include other subjects.

**The Master of Science in Engineering Physics** is to provide additional formal academic training to students who intend to assume positions in industrial or governmental laboratories. More emphasis is placed on the applied nature of physics in designing the curriculum.

In addition to general Graduate College requirements, the students

## *Physics and Astronomy*

should have a major in one of the fields of physical science or engineering.

Twenty-four semester hours of course work and six semester hours of thesis research are required. Normally, 15 to 18 semester hours will be taken in physics, and six to nine semester hours in a minor will be permitted. There is no language requirement.

The student's graduate thesis advisor will be assigned upon the completion of 15 semester hours of course work and after selection of a thesis topic. A thesis reporting the results in accordance with the regulations of the Graduate College must be submitted.

A final examination (oral and/or written) is given to all candidates. Such an examination will include defense of the thesis and may include other subjects.

**The Master of Arts in Education** with a physics minor is designed to enhance the competence of physics and science teachers at the secondary school level. There are two program options leading to the Master of Arts in Education: the Science Area major (in which the student may take some work in Physics and Astronomy) and the Physics minor. Graduate courses are available which familiarize the teacher with modern instructional techniques and curricula while strengthening his overall physics and astronomy background.

**Financial Aid.** The Department of Physics and Astronomy has several teaching assistantships available, ranging from \$2100 to \$2800 for the nine-month academic year. These require that the student assist in the instruction of courses and laboratories in the department. The total number of work hours per week is approximately 15. If desired, summer assistantships can be arranged. The graduate students are provided ample office facilities for study and student consultation.

**Research.** Graduate thesis problems are available in the following areas:

atomic collisions	optical astronomy
biophysics	radiation dosimetry
electron physics	radio astronomy
nuclear physics	theoretical physics

Investigations of galactic structure and binary stars (financed by the Research Corporation and the National Science Foundation) are carried on at the Kitt Peak National Observatory, in Tucson, Arizona. Studies of quasars and related extragalactic objects are being conducted using earth satellite facilities of the National Aeronautics and Space

## *Physics and Astronomy*

Administration as well as the ground-based optical observatory at the University of Florida. An atomic collision facility has been assembled, by cooperative agreement with the National Aeronautics and Space Administration. Intermediate energy nuclear processes are studied using Western's neutron generator and multichannel analyzer. The facilities of Oak Ridge Associated Universities are utilized for student projects. Medical physics experiments in radiation dosimetry, supported by the Department of Health, Education and Welfare, aim to develop new detectors of total radiation dose. Two professors are testing the ability to predict biophysical effects in an organism when it is subjected to a specified radiation field. This research is jointly supported by the Department of Biology. In cooperation with radio astronomers at the University of Florida, Western's faculty members are deciphering the radio signals from the planet Jupiter. Radio telescopes, located ten miles from the campus, are one end of a very long baseline interferometer extending from Bowling Green, Kentucky, to Maipu, Chile.

### **Graduate Courses :**

#### **510. Methods of Mathematical Physics I. Three hours.**

Prerequisite: Differential Equations.

Selected topics from the mathematical methods of classical physics.

#### **520. Atomic and Molecular Spectra. Three hours.**

Prerequisite: Physics 480.

A study of the structure of atomic and molecular spectra including quantum mechanical energy states, wave mechanical rules for combining momenta and magnetic moments, the Stark effect, and the Zeeman effect.

#### **530. Statistical Mechanics. Three hours.**

Prerequisite: Physics 450, 480.

An introduction to statistical theories of many body systems and their thermodynamic consequences. Topics include the Boltzmann equation, Liouville's theorem phase space, ensemble theory, entropy and probability, partition functions, equations of state, and quantum statistics.

#### **540. Electromagnetic Theory. Three hours.**

Prerequisite: Physics 440.

Electrostatics, magnetostatics, and potential theory; Maxwell's electrodynamics; the theory of wave optics, refraction, interference and diffraction; radiation of electric and magnetic multipole fields.

#### **550. Classical Mechanics. Three hours.**

Prerequisite: Physics 450.

Dynamics of particles and rigid bodies, the methods of Lagrange and Hamilton, the Hamilton-Jacobi equation, and the theory of small vibrations.

## Physics and Astronomy

### 580. Quantum Theory. Three hours.

Prerequisite: Physics 480.

Wave and matrix mechanics, general operator methods, angular momentum, symmetry principles and conservation theorems, variational principle and elementary perturbation theory.

### 598. Graduate Seminar. One hour.

Discussions of recent and current literature on developments in experimental and theoretical physics.

### 610. Methods of Mathematical Physics II. Three hours.

Prerequisite: Physics 510.

Selected topics from the mathematical methods of quantum physics.

### 660. Theory of Solids. Three hours.

Prerequisite: Physics 480.

A study of matter in the condensed state emphasizing quantum mechanical aspects, the behavior of electrons in solids and the thermal and magnetic properties of matter.

### 670. Theoretical Nuclear Physics. Three hours.

Prerequisite: Physics 480.

Static properties of nuclei, descriptive aspects of radioactivity and nuclear reactions, systematics of nuclear energies, nuclear models, nuclear decay, nuclear reactions, and nuclear forces.

### 675. Advanced Topics in Physics. One to Three hours.

Prerequisites: Graduate standing and permission of the instructor.

Each topic is a course in directed study under the supervision of a faculty member. Available for full credit in subsequent sessions with change of content.

### 699. Research. One to Six hours.

Courses which may be taken for graduate credit toward the M.A. in Education (Physics minor) or may serve as part of the Science Area major in the M.A. in Education:

### 501. Classical Developments in Physics. Three hours.

A general review of classical physics for the junior high and high school teacher, covering the discovery of physical laws, the origin of forces, motion, energy, momentum, conservation principles, wave phenomena, and electromagnetics. The goal is comprehension of the basis and nature of physical law, and the ability to convey this insight to others.

### 502. Modern Developments in Physics. Three hours.

A general review of quantum physics for the junior high and high school teachers covering atomic structure, the nucleus, elementary particles, probability and uncertainty, and special relativity. The impact of twentieth century discoveries on the foundations of physical law will be emphasized. The goal is awareness of the vitality and influence of physics and the ability to convey this to others.

## Physics and Astronomy

### 503. Physics Demonstrations and Laboratory Exercises. Three hours.

Designed to acquaint the junior high and high school teacher with laboratory equipment and demonstrations designed for use in secondary education. A laboratory library containing approximately sixty experiments, in place, will enable the teacher to become experienced with equipment. The purpose of the course is to develop confidence in the teacher and instill the desire to enhance his lectures and laboratory instruction through the use of new techniques and apparatus.

### 505. Investigations in Physics. Three hours.

A literature search and study relating to a special topic of interest to the student with potential benefit to the teaching of physics.

### 401G-402G. Physical Science I and II. Three hours each.

Prerequisite: Permission of the instructor.

Systematic study of the primary physical properties of matter and forms of energy. Emphasis on measurement process, symbolism, graphical analysis, algebraic calculations, dimensional analysis and coherent systems of units. For teachers and prospective teachers.

### 405G. Astronomy for Teachers. Three hours.

Selected topics in astronomy for elementary and secondary teachers. Does not count toward physics major credit.

### 410G. Physics for Elementary Teachers. Three hours.

Prerequisite: Permission of the instructor.

A broad study, including laboratory experiences, of the areas of physics relevant to the teaching of science in the elementary school. This is a course for elementary teachers with a minimal science background.

### 425G. Modern Concepts of Physics. Three hours.

Prerequisite: One year of college physics.

Current ideas in atomic and nuclear physics, astronomy and space physics, solid state and low temperature physics are discussed at such a level that the prospective teacher will have a good understanding of modern concepts in physics and will be able to explain them to students. This course includes demonstrations and experiments, field trips, seminars, and occasional guest lectures.

The following 400-level courses may be taken for graduate credit:

### 404G. Experimental Physics 4. Optics. One hour.

Corequisite: Physics 441.

The objectives of the course are (1) to give the student a physical feeling for the conclusions and concepts of Optics, and (2) to teach him some of the techniques of experimental Optics.

### 406G. Experimental Physics 5. Solid State. One hour.

Corequisite: Physics 460, Solid State Physics.

The objectives are to teach solid state experimental techniques and to demonstrate the lecture material.

**407G. Experimental Physics 6. Nuclear. One hour.**

Prerequisites: Physics 302.

The objectives of the course are (1) to provide students experience with modern nuclear detection equipment, (2) to examine some of the nuclear properties via experimental methods, and (3) to demonstrate the usefulness of nuclear radiation as an analytical research tool.

**409G. Experimental Physics 7. Research Techniques. Two hours.**

Prerequisite: 2 years of college physics.

The practice of laboratory techniques most frequently required in experimental research. Includes drawing and fabrication of apparatus, glassblowing, design and operation of vacuum systems, technical photography, and statistical treatment of data.

**414G. Introductory Astrophysics. Four hours.**

Prerequisites: 2 years of college physics and permission of the instructor. A broad survey of topics in solar system and stellar astrophysics. This course treats radiation theory, solar phenomena; planetary physics and the origin of the solar system, the interplanetary medium; stellar evolution, interiors and atmosphere; the fundamentals of radio astronomy, pulsars, quasars and cosmic X-ray sources.

**431G. Radiation Biophysics. Four hours. (Also, Biology 431)**

Prerequisites: Physics 201-202 or Physics 231-232.

A treatment of the properties of the various forms of radiations and their interactions with, and effects on, living matter. The laboratory offers training in the monitoring of ionizing radiations and in the techniques of radioactive isotopes as applied in biological and clinical work.

**436G. Biophysics Seminar. One hour. (Also, Biology 436)**

Prerequisite: Junior-Senior Physics or Biology Majors. Seminar exercises for junior and senior students devoted to the discussion of selected topics of biophysical research.

**440G. Electricity and Magnetism. Three hours.**

Prerequisites: Physics 350 and Math 331.

The study of classical electricity and magnetism with emphasis on fields, potentials, conductors, dielectrics, steady currents, radiation and Maxwell's equations.

**441G. Optics. Three hours.**

Corequisite: Physics 404. Prerequisites: One year of college physics and one year of calculus.

A study of geometrical and physical optics including wave propagation, refraction, dispersion, defraction and polarization.

**450G. Theoretical Mechanics. Three hours.**

Prerequisites: Physics 350, Math 331.

A study of rigid body motion, moving coordinate systems, continuous media and Lagrange's equations.

**460G. Solid State Physics. Three hours.**

Prerequisite: Physics 320. Corequisite: Physics 406.

An introductory course in the theory of solids including such topics as geometrical and X-ray crystallography, Maxwell-Boltzmann and Fermi-Dirac statistics, free electron theory of metals, Brillouin zones, band model of semiconductors and the Hall effect.

**465G. Geophysics. Three hours. (Also, Geology 465)**

Prerequisites: Geology III and one year of college physics or permission of the instructor.

The basic fundamentals of general and exploration geophysics. The initial topics discussed include the origin of the earth and solar system, the earth's interior, geochronology, gravity and isostacy, seismology, the earth's heat, geomagnetism, upper atmosphere, continents and ocean basins, ridges and island arcs and continental drift. The theory and applications of exploration geophysics are also covered, especially gravity, magnetic and seismic methods.

**470G. Nuclear Physics. Three hours.**

Corequisite: Physics 407. Prerequisite: Physics 320.

The properties of the nucleus including nuclear forces, alpha emission, radioactivity, fundamental particles and particle accelerators.

**475G. Selected Topics in Physics. One to three hours.**

Prerequisite: Senior standing and permission of the instructor.

Each topic is a course in directed study under the supervision of a faculty member. The following topics are contemplated: plasma physics, wave motion, physical electronics, and radio astronomy. Available for full credit in subsequent sessions with change of content.

**480G. Quantum Mechanics. Three hours.**

Prerequisites: Physics 320, 350, 450.

A study of the fundamental principles of quantum mechanics including the hydrogen and helium atoms, the harmonic oscillator and the Schroedinger wave equation.

**PSYCHOLOGY****Graduate Faculty:**

Professors: Cave, Cunningham, Dotson, Floyd, Laird, Robe (Head of Department)

Associate Professors: Clark, Craig, Reese, Simpson

Assistant Professors: C. Layne, Martray, McFarland, Mendel, Metze, Miller, Owen, Shiek

**Degrees offered:**

Master of Arts in Psychology; Master of Arts in Education (Psychology major or minor)

**Master of Arts in Psychology**

This program provides preparation for students who seek teaching positions at the college level and provides specialized skills for students who wish to pursue careers in industry, government, school or clinical psychology.

There are a number of options available to students, depending upon specific goals, but most are involved in three plans.

1. A two year training sequence in Clinical or School Psychology
2. A pre-doctoral sequence in General-Experimental Psychology
3. A General Psychology option which prepares one to teach at a college or high school level, enter business or industry, or to move on to doctoral programs in allied areas.

Admission requirements are similar in all programs. Applicants should have a statistics and experimental methodology course plus some background in general psychology in the areas generally covered in a History and Systems of Psychology course. There are no specific number of course hours required. The aptitude score on the GRE (combined verbal and quantitative) must be supplied and a minimum of 850 is required. All applicants should arrange for two letters of recommendation to be sent to the departmental admissions committee.

The minimum undergraduate grade point average required for consideration is an overall GPA of 2.5 (four years) and a 3.0 in psychology courses. All M.A. programs in Psychology require an acceptable thesis and the research tool requirements established by the student's committee. At a point when the major coursework components within a program are completed, but prior to the approval of a thesis topic, each student must pass a set of written and/or oral qualifying examination questions which are prepared by the student's committee. There is also a final oral examination over the thesis.

The following is a more detailed listing of course requirements which made up each option.

**Clinical or School Psychology**

This is a two year sequence which prepares a student to assume a position as M.A. level Clinical or School Psychologist. Upon completion of this program a student would be recommended to the State Board of Psychological Examiners for certification and would be recommended to prospective employers. Generally this is considered to be a practice oriented Masters degree; a student does not usually plan to move directly into a doctoral program. If a student wanted to move

on to a doctoral program, several years successful experience in a clinic or other setting would be helpful.

**A. Undergraduate preparation should include the following areas.**

*Abnormal Psychology	Personal Adjustment and
*Social Psychology	Mental Hygiene
*Personality Theory	Physiological Psychology
*Psychological Testing	

**B. Graduate level courses which make up the core of the program:**

Psychology 540, 541, 550, 560, 561, 562, 563, \*\*592, 640, 641, 642, 660, 661, 662, \*\*\*512, \*\*\*599.

Minimum hours to complete the program: 40 hours.

School Psychology requirements: 43 hours.

Note: \*—Required before graduate work initiated.

\*\*—Required for School Psychometrist or School Psychologist

\*\*\*—Required for all M.A. programs in Psychology

**Pre-Doctoral General-Experimental**

Some doctorate granting departments are showing a greater interest in admitting students with a strong M.A. background. This plan has been designed for those students who wish to enter a M.A. program and apply for admission to a doctoral program at a later time. If a student anticipates that he would apply in a specialized area, such as Social, Clinical, etc., courses in these areas of specialization should be included in the program.

When this program is completed students will be recommended to appropriate doctoral programs or for teaching positions in colleges or community colleges, but should not consider themselves prepared for recommendation as clinical or school psychologists.

**A. Basic Course Sequence (These courses are required of all pursuing this program.)**

Psychology 500, 512, 513, 599.

**B. Areas of Specialization (select 4 of the 8 areas)**

Physiological Psychology (580), Clinical Psychology (541), Psychometrics (563), Developmental (520, 521, 522), Cognition (523), Motivation (516), Social Psychology (522), Personality (550).

Minimum program requirements: 30 hours

**General Psychology With A Specialization in Industrial Psychology**

This specialization is designed to equip one with specific psychological skills utilized by business and industry.

## Psychology

Although this program may serve as a bridge to doctoral training in Industrial Psychology, it is intended primarily for those students seeking a Master's as a terminal degree, and for whom the development of skills required by industry is a primary concern. In addition to meeting the requirements of the General Psychology Program, the student will also achieve some measure of competence in each of the following areas: employee selection and placement, test construction and validation, training, motivation, job satisfaction, and leadership.

### General Psychology

For those students who do not plan to practice as a Clinical Psychologist or apply for admission to a doctoral program in Psychology, a highly flexible option is available. Students who complete this option will be recommended for teaching positions, admission to doctoral programs in allied areas, or other areas of specialization.

Some students are not ready to commit themselves to any of the more specialized programs and choose to enter this program first, then move on to either a Clinical or General-Experimental program.

Coursework requirements: Psychology 512, 563, 599, and 18 hours of Psychology electives. Total minimum requirements: 30 hours.

### Master of Arts in Education (Psychology major or minor)

This program provides additional graduate coursework in psychology for secondary school teacher. Students following this program must have met all requirements for Standard High School Certification. The student majoring in psychology may take a minimum of 18 or a maximum of 21 hours in psychology, while the student minoring in psychology may take a minimum of 12 or a maximum of 15 hours in psychology. The remaining hours will be taken in professional education courses. The thesis is recommended.

### School Psychometrist

A specialized program which meets Kentucky certification of School Psychometrists is also available. Detailed information on this program may be obtained at the Psychology Department.

### Graduate Courses in Psychology :

#### 500. Trends and Scientific Approaches in Psychological Thinking. Three hours.

Prerequisite: Graduate standing and permission of instructor.

A survey of the historical and philosophical bases of contemporary psychological thought and research with emphasis on the philosophy and logic of

## Psychology

science especially as it pertains to psychology. The understanding and appropriate usage of scientific terminology is also stressed. (Offered Spring '75 and alternate years). Craig, Miller

#### 510. Advanced Educational Psychology. Three hours.

Psychology of learning; different psychological theories; psychological methods and techniques; experimental literature. (Fall, Spring, Summer). Owen, Simpson

#### 511. Psychology of Learning. Three hours.

A study of theories of learning including conditioning, social learning, reinforcement, problem solving, motivation, and structure of the learning situation. (Fall, Spring, Summer). Metze, Craig, Robe, Simpson

#### 512. Seminar in Experimental Design. Three hours.

This course is a basic required course for all graduate students in psychology. It is designed to develop an understanding of the principles of experimental design and the application of appropriate statistical techniques. Included in this course will be the design of an experimental project. (Fall, Spring). Craig

#### 513. Advanced Statistical Analysis. Three hours.

Prerequisite: Graduate standing and Psychology 512 (or permission of instructor).

Advanced analysis techniques appropriate to psychological research will be studied. Such procedures as the more complex forms of the analysis of variance, the analysis of covariance, and various types of non-parametric statistics will be emphasized. (Offered Spring '74 and alternate years). Craig, Miller

#### 516. Advanced Study in Motivation. Three hours.

Prerequisite: Graduate standing and permission of instructor. In depth analysis of historical and present motivation theories. Particular stress will be placed on a current literature survey of both human and animal research. Offers an opportunity for the integration of concepts of scientific logic with a specific area of psychological inquiry. (Offered Fall '74 and alternate years). Reese

#### 520. Psychology of Individual Differences. Three hours.

A survey of research and theory in developmental aspects of behavior from the prenatal period to adulthood with emphasis upon individual differences. (Offered Fall, Spring, Summer). Martray, Laird, Owen

#### 521. Advanced Child Psychology. Three hours.

A course in child psychology for graduate students, with particular emphasis upon a critical review of current research in child development. (Offered Fall). Cunningham

#### 522. Advanced Adolescent Psychology. Three hours.

A critical review of current research and theories in the area of adolescent psychology as they relate to physical, social emotional, and intellectual development. (On demand). Staff

**523. Cognitive Theory. Three hours.**

A study of information processing, thinking and cognition. This course will cover major theories and research techniques in the area of cognitive theory. (On demand). Craig

**540. Behavior Problems of Childhood and Adolescence. Three hours.**

A descriptive and theoretical survey of the major forms of psychopathology in children and adolescents, with emphasis upon recent research, classification systems and developmental patterns. This course will also cover clinical and school treatment of neurotic, psychotic, sociopathic, organic syndromes, and other behavior problems encountered in the school setting. (Offered Fall, Spring, Summer). Shiek

**541. Introduction to Clinical Psychology. Three hours.**

An introduction to methods and research in clinical psychology with an emphasis upon the use of clinical reports prepared for schools and clinics. (Offered Spring, Summer). Layne, Clark

**550. Personality Theory. Three hours.**

A survey of basic psychological principles underlying the study of personality in relation to a social environment. Among the topics discussed are: theories of personality, the process of socialization of the individual, factors influencing adjustment to social environment. (Offered Fall, Summer). Dotson, Layne

**551. Social Psychology of Organizations. Three hours.**

Designed to provide an understanding of the dynamics of groups and organizations. A survey of current theory and research in psychology of organizations. (Offered Fall, Spring, Summer). Mendel

**552. Advanced Social Psychology. Three hours.**

Prerequisites: Graduate standing and permission of instructor.

The behavior of the individual is investigated in relation to social contexts. An in-depth analysis centers around such topics as group dynamics, attitude formation and change, social influence processes, socialization and language use in communication. (Offered Fall, Spring). McFarland

**560. Individual Assessment—Wechsler. Two hours.**

Prerequisites: Graduate standing and permission of instructor.

The course will involve administration and interpretation of the WICS, WAIS, WPPSI, and other individually administered Wechsler-type tests used as basic tools in education, occupational guidance and clinical diagnostics. Effective report writing and basic clinical practice will be stressed. This course requires the administration of a minimum of 25 individual tests. (Concurrent enrollment in Psychology 562 is required). (Offered Fall, Spring). Shiek

**561. Individual Assessment—Binet. Two hours.**

Prerequisites: Graduate standing and permission of instructor.

The course will involve administration and interpretation of the Stanford-Binet Intelligence Scale and other Binet-type tests commonly used in educational, vocational guidance and clinical diagnostics. Effective report writing

and basic clinical practice will be stressed. This course requires the administration of a minimum of 25 individual tests. (Concurrent enrollment in Psychology 562 is required). (Offered Fall, Spring). Robe

**562. Practicum in Psychological Assessment. One to three hours.**

Corequisite. Psychology 560 or 561.

Supervised experience in the administration and interpretation of tests used in an educational or clinical setting for the diagnosis of intellectual and learning problems. This course will include development of realistic recommendations which can be used by teachers and clinicians to modify individual behavior. (May be repeated.) (Offered Fall, Spring). Robe, Shiek

**563. Tests Construction and Psychometric Theory. Three hours.**

An introduction to psychometrics with an emphasis upon both technical and ethical problems which are involved in the use and construction of psychological measurement instruments. The student will survey existing tests within the field and learn to communicate test results to both professionals and non-professionals. This is a required course for all graduate students in psychology. (Offered Spring, Summer). Robe, Shiek

**580. Advanced Physiological Psychology. Three hours.**

Prerequisite: Graduate standing and permission of instructor.

Provides a knowledge of anatomy of the nervous system, relationships among the components of the nervous system and behavior, and the current theories of physiological psychology. Training in physiological research techniques such as electrical recording and electrical and chemical stimulation will be given. (Offered Fall '74 and alternate years). Miller

**581. Laboratory in Advanced Physiological Psychology. One hour.**

Corequisite: Psychology 580.

Familiarity with physiological techniques of electrical recording and electrical chemical stimulation will be given. (Offered Fall '74 and alternate years). Miller

**590. Readings or Research in Psychology. One to three hours.**

Prerequisite: Departmental permission only.

Individual programs of reading or conduct of research studies. Arrangements must be made for supervision before enrollment in this course. (On demand). Staff

**591. Internship in College teaching. One to two hours.**

Prerequisite: Permission only.

A study of the problems and methods of teaching at the college level. Students enrolled in this course will be concurrently teaching a college course in introductory or general psychology. (On demand). Staff

**592. Seminar and Field Experiences in School Psychometry. Three hours.**

Prerequisites: Graduate standing and permission.

A professional seminar and field experience for school psychometrists and psychologists to be taken during the student's last semester in residence. This course will involve staff and students from allied specialists such as Counselor Education, Special Education, Reading and School Administration.

Comprehensive Pupil Personnel services will be emphasized, with the School Psychometrist as a working member of the educational-diagnostic team composed of the teacher, counselor, principal, pupil, parent and psychometrist. Field experiences in consultation, testing, curriculum development and educational program evaluation will be an integral part of this course. (Offered on demand). Shiek, Robe

**599. Master's Thesis in Psychology. Six hours.**

Open only to candidates for the M.A. degree who are engaged in thesis research or writing. (Offered on demand). Staff

**640. Psychopathology. Three hours.**

Prerequisite: Permission only.

A descriptive and theoretical survey of the major forms of child and adult psychopathology with emphasis upon recent research, classification systems, modification of deviant behavior and developmental patterns of learning and motivation variables. Experimental studies including the experimental induction of abnormal behavior in animals will be reviewed. (Offered Fall). Clark

**641. Clinical Interviewing and Psychotherapy I. Two hours.**

Prerequisite: Permission only.

A study of selected theories and techniques of psychotherapy and counseling involving academic, vocational, learning, and emotional problems. Consideration of group therapy, research, clinical topics, and professional and ethical issues. Course experiences include role playing, tape recorded interviews, and analysis of case materials. (Concurrent enrollment in 662 is required). (Offered Fall). Dotson

**642. Clinical Interviewing and Psychotherapy II. Two hours.**

Prerequisite: 641. Permission only.

A continuation of 641 with an emphasis upon group, family and marital psychotherapy. (Students will concurrently enroll in 662). (Offered Spring). Dotson

**660. Psychological Evaluation I. Two hours.**

Prerequisite: 560. Permission only.

An introduction to personality diagnosis using objective and projective techniques with an emphasis upon current research interpretation, and communication of assessment information. (Concurrent enrollment in 662 required). (Offered Fall). Layne

**661. Psychological Evaluation II. Two hours.**

Prerequisite: 660. Permission only.

A continuation of 660 with emphasis upon the integration of data obtained through various assessment instruments and techniques. Focus on specialized procedures for the evaluation of personality, functional disorders, perceptual-motor problems, and organic and intellectual deficit in clinical, educational, and rehabilitation settings. (Concurrent enrollment in 662 required.) (Offered Spring). Layne

**662. Practicum in Psychological Practice. One to three hours.**

Students enrolled in 641, 642, 660, or 661 will receive supervised practice

in schools, clinics, specialized training centers and hospitals. Those preparing careers in school or clinical psychology will enroll in 662 for a minimum of two semesters. (Offered Fall and Spring). Dotson, Layne

**The following 400-level courses in Psychology, may be taken for graduate credit:**

**400G. History and Systems of Psychology. Three hours.**

Prerequisite: Nine hours in Psychology.

This course reviews the main historical systems of psychology; the introspectionist, functionalist, purposive, psychonalytic, behaviorist, gestalt, existentialistic and humanistic psychologist. The purpose is to acquaint the student with recent history of psychology and to help him identify important systematic trends in contemporary writings in psychology and their underlying assumptions. This is a required course for all majors and highly recommended for minors. (Spring, Fall, Summer). Cave, Miller

**410G. Psychology of Learning. Three hours.**

Prerequisites: Psychology 201 and 210 or permission.

Facts and principles of human and animal learning, especially as these have been treated in theories attempting to provide a general framework for understanding what learning is and how it takes place. (Fall, Spring, Summer). Metze, Miller, Reese

**411G. Psychology of Sensation and Perception. Three hours.**

Prerequisites: Psychology 201 and 210 or permission.

This course covers basic data and theories of psychophysics, illusions and other topics fundamental to the understanding of sensory and perceptual processes. (Spring). Craig, Miller

**412G. Psychology of Motivation and Emotion. Three hours.**

Prerequisites: Psychology 201, 210 or 410 or permission.

A study of the ways in which needs, desires and incentives influence behavior. Includes a review and critical analysis of research on motivational processes in human and animal behavior and the development of motivation and emotions. (Fall). Reese

**432G. Psychology of the Gifted and Creative. Three hours.**

Prerequisites: Psychology 100.

The course covers identification of gifted children and adults with an emphasis upon the development of educational programs which maximize the development of giftedness. Included will be a critical review of research and literature in the areas of giftedness and creativity. (Fall, Spring, Summer). Laird

**440G. Abnormal Psychology. Three hours.**

Prerequisites: Six hours in psychology.

An introductory course in the field of abnormal psychology with emphasis upon forms of abnormal behavior, etiology, developmental course, interpretations, behavioral manifestation and treatment programs. (Fall, Spring, Summer). C. Layne, Clark

**441G. Psychological Aspects of Alcoholism. Three hours.**

Prerequisites: Psychology 440 and permission of instructor.

An intensive study of theories and research regarding alcoholism; emphasis on application of psychological theories to the treatment of alcoholism, and on psychological research regarding alcoholism. (Spring). C. Layne

**443G. Behavior Theory and Application. Three hours.**

Prerequisite: Psychology 410 (Learning Theory), or enrollment in Special Education sequence.

A theoretical and applied understanding of behavior psychology (Behavior Modification). Both theory and application of techniques for modifying behavior in clinics, hospitals, child rearing and education will be covered. Cross listed with Special Education 443. (Fall, Spring, Summer). Reese

**450G. Introduction to Personality Theory. Three hours.**

Prerequisites: Nine hours of psychology or permission.

An overview of the major theoretical approaches to the study of personality. This will include theorists of historical note as well as contemporary theorists. The course will serve as a survey of major names, avenues of analysis and concepts in the field of personality. (Fall, Spring, Summer). Stevenson, McFarland

**490G. Readings or Special Problems in Psychology. One to three hours.**

Prerequisite: Permission only.

Advanced students will identify and conduct research and/or reading concerning problems in Psychology under the direction of faculty members. (On demand). Staff

**READING AND SPECIAL EDUCATION****Graduate Faculty:**

Professor: Englebright (Head of Department)

Associate Professors: Gibbs, F. Reese

Assistant Professors: Crooks, Panchyshyn, Rich

A. Within the guidelines of the curricula leading to the Standard Elementary Certificate or the Standard Secondary Certificate and the M.A. in Education Degree the following curriculum leading to endorsement as Reading Specialist is offered:

## 1. Twelve semester hours in the following courses:

Ed. 519 Foundations of Reading Instruction

Ed. 520 Diagnosis of Reading Disabilities

Ed. 521 Correction of Reading Difficulties  
(Practicum)

Ed. 522 Investigations in Reading

following Index

\*Application Form (Form A)

2. Twelve semester hours individually prescribed from nonprofessional education courses.

3. Six semester hours in educational foundation courses as follows:

- a. Ed. 500 Research Methods
- b. Ed. 503 Elementary Curriculum or  
Ed. 580 The Curriculum

Prerequisites for admission to the program include appropriate courses in reading methodology and tests and measurements.

Requirements for Endorsement as Reading Specialist also include a Masters Degree and three years of successful teaching experience.

B. A program leading to endorsement of an Elementary or Secondary Education Certificate in Educable Mental Retardation or combination Educable Mental Retardation—Trainable Mental Retardation is available.

C. The curriculum leading to a Standard Elementary or Standard Secondary Certificate endorsed in Educable Mental Retardation and the M.A. in Education Degree is as follows:

- 1. Twenty-one semester hours in the following courses:  
Ed. 516 Research and Issues: The Exceptional Child  
Ed. 517 Problems in Mental Retardation  
Ed. 441G Methods & Materials of Teaching the Educable Handicapped  
Ed. 442G Methods & Materials of Teaching the Educable Handicapped Young Adult  
Ed. 519 Foundations of Reading Instruction  
Ed. 520 Diagnosis of Reading Disability  
Ed. 518 Seminar: Problems in Special Education

2. Nine semester hours individually prescribed from nonprofessional education courses.

3. Six semester hours in educational foundation courses as follows:

- a. Ed. 500 Research Methods
- b. Ed. 503 Elementary Curriculum or  
Ed. 580 The Curriculum

4. Ed. 492E—Student Teaching: Educably Mentally Handicapped or Ed. 492L—Lecture in Lieu of Student Teaching is required.

5. A combination Educable Mental Retardation—Trainable Mental Retardation endorsement may be obtained by extending the above curriculum to include Ed. 415G—Methods and Materials

for Teaching the Trainable Mentally Retarded Child, Ed. 443—Behavior Theory and Application, and Ed. 492T—Student Teaching: Trainably Mentally Handicapped.

D. A specialization in Reading is offered within the guidelines of the Specialist in Education (Ed.S.) Degree for elementary teachers (p. 79) or Secondary teachers (p. 174).

For graduate courses in Reading and Special Education, see pages 58-71.

## SCHOOL ADMINISTRATION

### Graduate Faculty:

Professors: Christenson (Head of Department), Frady

Associate Professors: G. Farley, Williams

Assistant Professor: Ball

### Specialist in Education Degree in School Administration

The Specialist Degree in Education (Ed.S.) in School Administration is an advanced professional degree involving a minimum of 30 semester hours of graduate study beyond the Master's Degree. It is designed to help educational administrators become more competent members of their profession and to meet specific goals and objectives in the student's area of specialization.

Program specialization areas available to students are School Business Administration, Elementary School Administration, Secondary School Administration, Director of Pupil Personnel, Supervision of Instruction, and General School Administration.

Eligibility for admission to these programs will be based upon the criteria and guidelines adopted by the University, see pages 13, 14.

### Professional Certificate for School Administration and Supervision

The curriculum in School Administration Programs is designed (1) to give qualified personnel the opportunity to acquire attitudes, advanced knowledge, understandings, and skills in their fields of interest, and (2) to prepare qualified personnel to perform effectively the leadership responsibilities in the elementary and secondary schools.

The courses and experiences provided are designed to meet professional certification standards in school administration and supervision. Programs are offered and the certificate may be endorsed in the following areas: Elementary Principal, Secondary Principal, Supervisor of In-

\*Application Form (Form A) \_\_\_\_\_ following Index

struction, Director of Pupil Personnel, School Business Administrator, and Superintendent. The Professional Certificate for School Administration and Supervision shall be issued initially upon completion of a program of preparation for one of the previously-mentioned school leadership positions. The certificate shall be endorsed for the specific position for which the program of preparation has been completed. When the Professional Certificate for School Administration and Supervision has been issued and endorsed for one position it may be further endorsed for any of the other positions upon completion of that particular program.

**All School Administration Programs, with the exception of School Business Administration, require additional study above and beyond the Master's Degree. To be endorsed for the Superintendency a minimum of thirty hours beyond the Master's degree is required.**

Application for admission to School Administration Programs (except School Business Administrators) should be made after the completion of the M.A. degree. Acceptance in these programs will be based on the recommendations of a selection committee, using as a basis for approval the following criteria:

- 1 Satisfactory experience in public or private schools.
- 2 Recommendations from school officials where the experience was obtained.
- 3 Recommendations from graduate faculty members with whom the candidate has had courses.
- 4 Satisfactory standardized test scores indicating achievement and a potential for growth.
- 5 Satisfactory scholastic record.
- 6 Personal interview.

### Curriculum for School Business Administrators Leading to a Master's Degree and Standard Certification:

#### Provisional Certificate:

- 1 Completion of a Bachelor's Degree.
- 2 Completion of eighteen hours toward Standard Certificate.
- 3 Two years successful experience in Government, Business, or Education.

#### Standard Certificate:

- 1 Completion of M.A. Degree.
- 2 Three years experience as a School Business Administrator.

**Required Courses in Education:**

- 577 History and Philosophy of Education
- 585 Fundamentals of School Administration
- 677 School Law
- 676 School Finance
- 678 School Building
- 500 Research Methods

Additional Required Courses or Demonstrated Competency in the following:

- Office and Personnel Management
- Accounting
- Public Finance
- Taxation
- Business Law
- School Business Management
- Data Processing

**Curriculum for Elementary School Principal Endorsement:**

The professional Certificate for School Administration and Supervision may be endorsed for the position of Elementary School Principal when the following conditions have been met:

1. Completion of the requirements for the Standard Elementary Certificate.
2. Admission to the curriculum for the elementary school principalship in accordance with selection and admission criteria.
3. Completion of a minimum of 45 semester hours of graduate credit including the Master's degree.
4. Three years of successful teaching experience.

Required Courses in Education

- 500—Research Methods
- 500—Introduction to Guidance
- 585—Fundamentals of School Administration

Fifteen hours of departmental electives with emphasis in elementary education are to be selected from the following areas:

- Administration
- Curriculum
- Supervision
- Behavioral Sciences

**Curriculum for Secondary School Principal Endorsement:**

The Professional Certificate for School Administration and Supervision may be endorsed for the position of Secondary School Principal when the following conditions have been met:

1. Completion of the requirements for the Standard High School Certificate.
2. Admission to the curriculum for the secondary school principalship in accordance with selection and admission criteria.
3. Completion of a minimum of 45 semester hours of graduate credit including the Master's degree.
4. Three years of successful teaching experience.

Required Courses in Education

- 500—Research Methods
- 550—Introduction to Guidance
- 585—Fundamentals of School Administration

Fifteen hours of departmentally approved electives with emphasis in secondary education are to be selected from the following areas:

Administration

Curriculum

Supervision

Behavioral Sciences

**Curriculum for Director of Pupil Personnel Endorsement:**

The Professional Certificate for School Administration and Supervision may be endorsed for the position of Director of Pupil Personnel when the following conditions have been met:

1. Completion of the requirements for either the Standard Elementary Certificate or the Standard High School Certificate.
2. Admission to the curriculum for Director of Pupil Personnel in accordance with selection and admission criteria.
3. Completion of a minimum of 45 semester hours of graduate credit including the Master's degree.
4. Three years of successful teaching experience.

Required Courses in Education

- 500—Research Methods
- 550—Introduction to Guidance
- 583—Accounting for Pupil Personnel
- 585—Fundamentals of School Administration

## School Administration

Nine hours of departmentally approved electives are to be selected from the Behavioral Sciences.

### Curriculum for Supervisor Endorsement:

The Professional Certificate for School Administration and Supervision may be endorsed for the position of Supervisor of Instruction when the following conditions have been met:

1. Completion of the requirements for either the Standard Elementary Certificate or the Standard High School Certificate.
2. Admission to the curriculum for Supervision of Instruction in accordance with selection and admission criteria.
3. Completion of a minimum of 45 semester hours of graduate credit including the Master's degree.
4. Three years of successful teaching experience.

#### Required Courses in Education

500—Research Methods

585—Fundamentals of School Administration

—Advanced Reading

Departmentally approved electives are to be selected from the following areas:

6 hours in Curriculum (elementary or secondary)

6 hours in Supervision

3 hours in Administration

9 hours in approved subject-matter areas

### Curriculum for Superintendent Endorsement:

The Professional Certificate for School Administration and Supervision may be endorsed for the position of School Superintendent when the following conditions have been met:

1. Completion of the requirements for either the Standard Elementary Certificate or the Standard High School Certificate.
2. Admission to the curriculum for the Superintendency in accordance with selection and admission criteria.
3. Completion of a minimum of 60 semester hours of graduate credit including the Master's degree.
4. As a general rule, a minimum of 21 graduate hours outside of education must be completed within the 60 hour minimum.
5. As a general rule, 39 graduate hours in professional education must be completed in the sixty-hour minimum.

## Secondary Education/Sociology and Anthropology

6. Five years of successful experience in teaching or administration.

For a description of School Administration courses, see pages

#### Required Courses in Education

676—School Finance

677—School Law

678—School Plant Administration

Approved electives to be selected in professional education, behavioral sciences and/or subject-matter fields in order to complete certification requirements and satisfy administrative competencies.

For graduate courses in School Administration, see pp. 58-71.

For basic guidelines on Rank I School Administration, see p. 191.

## SECONDARY EDUCATION

### Graduate Faculty:

Professors: Brenner, Laman, Power (Head of Department), Scarborough

Associate Professors: Estes, Johnson, Koper, McGuire, Melville, Nolan, Taylor

Assistant Professors: DeMars, Dillingham, Hanes, Pollock

### Degrees offered:

Master of Arts in Education (Secondary Education major or minor); Specialist in Education for Secondary Teachers.

#### Master of Arts in Education (Secondary Education major or minor)

The Standard High School Certificate, valid for ten years, shall be issued to a person who meets the requirements of law and general regulations of the State Board of Education and files a transcript of credits showing the completion of the four-year curriculum for the training of high school teachers as prescribed by the Council on Public Higher Education, and who, in addition thereto, completes the requirements for a Master's Degree in a standard graduate school as prescribed.

The curriculum leading to the Standard High School Certificate is based upon the following:

1. Completion of the requirements for the Master's Degree which shall be based upon at least 30 semester hours of graduate

\*Application Form (Form A) following Index

work. For students who write a thesis, a minimum of 24 semester hours is required.

2. At least 15 of the 30 hours required for the Master's Degree must be in courses open only to graduate students.

3. At least nine semester hours of the required work shall be in professional education courses designed to develop the recommended competencies. If only nine hours in professional education are completed, all nine hours must be in courses open only to graduate students. These courses will be chosen according to the student's needs after consultation with the student's graduate advisor in education, and they shall be selected from the following areas:

- a. A general study of curriculum development
- b. Research Methodology (Education 500 Research Methods, is required of all students pursuing the M.A. in Education.)
- c. Advanced study in human growth and development
- d. The psychology of learning
- e. A seminar in instruction devoted to the method of teaching
- f. Foundations in education—sociological, psychological, philosophical, historical

At least 12 of the 30 semester hours required for the degree shall be non-professional subject matter courses. These courses should be selected from areas that will strengthen the academic specialization of the secondary teacher and/or to further develop the general education background. Persons holding the Provisional High School Certificate for Vocational Agriculture may satisfy this section of the requirements with a minimum of six semester hours graduate credit rather than twelve.

The remaining courses should be selected on the basis of the individual needs of the student in keeping with policies developed by the institution.

#### **Specialist Degree in Education for Secondary School Teachers**

The Specialist Degree in Education for secondary teachers is an advanced professional degree involving a planned program of study beyond the master's degree. It is designed to help secondary teachers become more competent in their specialized areas.

The primary purpose of the program is to improve the competencies of secondary classroom teachers by (1) providing opportuni-

ties for further study in depth and/or breadth in their teaching field, (2) increasing their understanding of human behavior and the processes of teaching and learning, (3) deepening and broadening their competencies in supportive areas, and (4) stimulating understanding and utilization of research in the field of secondary education.

To be eligible for admission to the program, the student must (1) hold a master's degree from an accredited college or university with a grade point average of 3.25 for graduate work at the master's degree level, (2) have two years of successful teaching experience and the necessary academic background to pursue work designed to produce the master secondary school teacher, and (3) attain a minimum composite GRE score of 800.

Application for admission to the program is made through the Graduate College. The application must be supported by (1) two official copies of transcripts covering undergraduate and graduate work, and (2) recommendations from two graduate faculty members and two professional associates in administrative and/or supervisory roles.

In addition to the general requirements (p. 13), the thesis project must be related to secondary school teaching.

The Specialist in Education for Secondary Teachers permits concentrated study in the science area, social science area, language arts area, and vocational areas. For specific details, contact the Department of Secondary Education and the department in which you desire to study.

#### **Special Education**

A program in special education is available for persons certified in secondary education. For a description of the program, see p. 166.

For a description of Secondary and Special Education courses, see pages 58-71.

For basic guidelines on Rank I Teacher programs, see p. 191.

## **SOCIOLOGY AND ANTHROPOLOGY**

#### **Graduate Faculty:**

Professors: Baali, Dansereau (Head of Department), DiBella, Wittman, Yokley

Associate Professors: Beck, Dunn, Grimm, Wozniak

Assistant Professors: Kalab, Toups

#### **Degrees offered:**

Master of Arts in Sociology: Master of Arts in Education (So-

## *Sociology and Anthropology*

**Sociology and Anthropology** (Social Science Area major; Sociology minor); Master of Arts in Education (Social Science Area major composed partially of Sociology courses)

### **Master of Arts in Sociology**

This program is designed to provide a sound methodological and theoretical foundation for students who contemplate pursuing graduate studies beyond the master's level; to give a thorough preparation for those students who seek teaching positions at the college level; and also to transmit the basic specialized skills for those students who elect to pursue careers in industry or governmental service.

In addition to general Graduate College requirements, the student should have a B average for all undergraduate work in Sociology. Promising students with limited grade or course deficiencies may be considered for admission to the program upon completion of an approved program of study for the removal of the deficiencies.

Persons admitted to the program should also have previously had a minimum of eighteen hours in Sociology including the following courses or their equivalent:

Methods of Social Research (390), Social Statistics (350), History of Social Thought (360), and Contemporary Sociological Theory (385).

In unusual circumstances where special competence has been developed through experiences other than traditional course-work or extensive course-work in related disciplines, the above departmental requirements may be relaxed or adjusted by approval of the Department Head.

To fulfill the minimum requirements for the Master of Arts in Sociology the student may elect to study under either Plan A or Plan B. Under Plan A, a minimum of 24 hours of acceptable course work and a thesis, equivalent to six graduate hours, are required. Students who anticipate future doctoral study are encouraged to pursue Plan A. Under Plan B, a minimum of 36 hours of acceptable course work must be completed; the thesis is not required; however, the student is expected to have demonstrated an ability to write scholarly sociological papers. The courses constituting a student's program must form a uniform and coordinated whole as determined by the student's departmental graduate advisory committee.

One-fourth of the required credits, exclusive of thesis, may be taken in another field. The same limitation exists for the taking of credits

at the 400 level. Exceptions to either of the above must be approved by the Department Head.

Basically the curriculum will consist of a sequence of core theoretical and methodological courses and several additional courses essential to a strong foundation in sociology. Specialization may be directed toward three major areas: (1) criminology and corrections; (2) the sociology of work and work organization; and (3) urban sociology and demography.

The purpose of the criminology and corrections emphasis is to provide professional education for those students interested in careers in the fields of correctional administration, probation and parole, institutional program management, and delinquency control programs. In addition, it is intended to provide academic education in criminology with special emphasis on evaluation and research.

The emphasis in the sociology of work and work organization is intended to provide the student with specialized training in industrial sociology and manpower research and development to equip him to pursue a career with industry, government, or foundations in industrial research, human resource development programs, and applied manpower development.

The purpose of the urban sociology and demography emphasis is to provide the student with the appropriate knowledge and skills necessary for careers with industry, government, or foundations in the fields of urban affairs, population analysis and forecasting, community development, and urban environment research.

Programs specifically intended to satisfy student needs may be planned in such areas as social psychology, social institutions, and race and cultural relations.

All students enrolled in the Master's program will be required to take the following core courses: Sociology 580, 590, and 595. All participants in Plan A will enroll for Sociology 596 and 597.

Prior to the final master's examination the applicant must demonstrate either:

1. Ability sufficient to do scholarly reading in a foreign language appropriate to the major area, or
2. Mastery of appropriate research tools which will contribute to research proficiency.

### **Master of Arts in Education (Social Science Area major; Sociology minor)**

This program, designed for the public school teacher, provides

## *Sociology and Anthropology*

graduate coursework in sociology and anthropology. The student following this program must meet all requirements for Standard High School certification. The student wishing to pursue this program with emphasis in sociology is advised to follow the Social Science Area major which allows him to take 9-12 hours within the Department of Sociology and Anthropology and the remaining 6-9 hours in other social science departments. One who minors in sociology may take a minimum of 12 or a maximum of 15 hours in the department. The remaining hours will be taken in professional education courses.

### **Graduate Courses in Sociology :**

#### **505. Elements of Sociology. Three hours.**

Prerequisite: Graduate standing.

Designed as an advanced first course in basic sociology for the nonsociology graduate student. The conceptual problem of interaction is examined in terms of demography and ecology, culture and personality, and social structure and process. (Offered on demand)

#### **520. Studies in Family Relations. Three hours.**

Prerequisite: Sociology 505, or six hours of sociology and consent of the instructor.

An analysis of the family institution; the impact of modern culture on the family. (Fall and on demand in Summer)

#### **530. Seminar in the Sociology of Deviant Behavior. Three hours.**

Prerequisite: Sociology 505 or nine hours of sociology courses and consent of the instructor.

A systematic overview of selected types of deviant behavior with particular emphasis on criminality, delinquency, drug addiction, and alcoholism. Special attention will be given to current sociological theory and research in the field. (Fall)

#### **545. Seminar in Society, Personality, and Behavior. Three hours.**

Prerequisite: Sociology 505 or nine hours of sociology courses and consent of the instructor.

The course will focus on the study of inter-personal relations in different situations and from various perspectives. Among the concepts and problems to be considered are attitudes, norms, values; crucial factors in motivation and the actor's definition of the situation. Extensive observation of natural groups and experimental manipulation of arranged groups will provide data for testing specific hypotheses. (Spring)

#### **564. Demography. Three hours.**

Prerequisite: Sociology 505 or nine hours of sociology and consent of the instructor.

An advanced course in the quantity and quality of population. It will consist of a review of the demographic processes such as mortality, fertility and migration, with emphasis on measurements, methods, and analytical techniques.

## *Sociology and Anthropology*

The course will also include a review of important theories and issues in demography. (Spring)

#### **565. Studies in the Community. Three hours.**

Prerequisite: Sociology 505 or six hours of sociology, and permission of the instructor.

Ecological and social concepts of the community; the structure and function of the community. (Fall, Spring)

#### **566. Industry and Community. Three hours.**

Prerequisite: Sociology 505 or nine hours of sociology.

Analysis of industry in its community context exploring the interaction of industry with its immediate environment; social structure of the work-place as an extension of community; the impact of industry on community organization; the interaction of man, machine and colleague group within industrial organization; occupational roles, career patterns, social control within occupations and professions; and the social aspects of industrial conflict. (On demand)

#### **570. Studies of Social Systems. Three hours.**

Prerequisite: Sociology 505 or nine hours of sociology and permission of the instructor.

Use of organizational theory and its application to social systems. (On demand)

#### **572. Seminar in Social Change. Three hours.**

Prerequisite: Graduate standing as a sociology major or 18 hours of sociology. A seminar focusing upon the various approaches to social change and social disorganization as dealt with by the major sociological theorists, both past and present. The origin, nature, consequences and future outcome of social change and disorganization will be given consideration. (Fall)

#### **575. Complex Organizations. Three hours.**

Prerequisite: Sociology 505 or nine hours of sociology.

Analysis of the goals, internal structure, and environmental relations of large organizations. Special emphasis is placed upon the emergence of bureaucracies, competing theoretical frameworks for viewing organizations, and the analysis of organizational change. (Spring)

#### **580. Advanced General Sociology. Three hours.**

Prerequisite: Eighteen hours of sociology.

An overview of sociology presented through an examination of the various sub-disciplines of the field and the most important developments in each. Particular attention will be paid to recent research and theory in the various sub-fields. (Fall)

#### **590. Sociological Research Design and Analysis. Three hours.**

Prerequisite: Eighteen hours of sociology.

The examination of concept definition, model building, and research design appropriate to problem and data, including a review of representative research studies and students' designs. The course will include a schedule of readings,

## *Sociology and Anthropology*

field work, reports, and discussion designed to acquaint the sociology major with advanced social research methodology, techniques, and procedures. (Fall)

### **595. Seminar in Sociological Theory. Three hours.**

Prerequisite: Eighteen hours of sociology.

An analysis of current sociological theories, including a survey of recent approaches to the construction and application of systematic theoretical models. The course will include a schedule of readings, papers, and discussion designed to give the student a broad knowledge of sociological literature and theory. (Spring)

### **596-597. Thesis Writing. Three hours each.**

Prerequisite: The consent of the Department Head. (Fall, Spring, Summer)

### **635. Seminar in Family Theory and Analysis. Three hours.**

Prerequisite: Sociology 420, 520, or nine hours of graduate level sociology. An advanced seminar to serve as one of the concluding courses in the graduate sociology series. Major emphasis will be placed upon the basic theoretical and conceptual frameworks which have been used in past analytical studies of the family, as well as the use of these frameworks for current and future analyses. Emphasis will also be given to familiarizing the student with the large body of theoretical and empirical literature which exists on the family. (On demand)

### **640. Seminar in the Sociology of Work. Three hours.**

Prerequisite: 12 hours in sociology of which at least six must have been at the graduate level. The student must have had at least one of the following courses: Sociology 346, 445, 450, 566, or 575, or equivalent.

An advanced seminar which considers the meaning of work and its social import in contemporary society. Work is viewed through the theoretical framework of a social system, and attention is accordingly given to the constituent structural components of work as well as the inherent systemic linkages. Special emphasis is devoted to the integration of sociological theories of work and the procedures used in the sociological analysis of work. (On demand)

## **The following 400-level courses in Sociology may be taken for graduate credit:**

### **400G. Juvenile Delinquency. Three hours.**

Prerequisite: Sociology 365 or the consent of the instructor.

Optional for students anticipating either sociology or social work or teaching as a career. A study of general conditions related to juvenile delinquency, including a critical examination of trends and methods of treatment. (Fall, Spring)

### **410G. Urban Sociology. Three hours.**

Prerequisite: Nine hours of Sociology. A course dealing mainly with the impact of city life on social actions, social relationships, and social institutions. Emphasis will be placed on the rise and significance of cities in American life, with special attention on modification of educational, political, and religious institutions as well as housing, transportation and communication. (Fall)

## *Sociology and Anthropology*

### **415G. Sociology of Religion. Three hours.**

Prerequisite: Nine hours of Sociology or consent of instructor.

Study of the various forms and content of religious organizations and movements and the behavioral and attitudinal concomitants of religious affiliation. (Spring)

### **420G. The Family. Three hours.**

Prerequisite: Nine hours of sociology.

Optional for students anticipating either sociology, social work, or teaching as a career. An analysis of the family institution, its structure and function, and the dynamics of social change on family interaction and organization. (Fall, Spring)

### **433G. Correction and Confinement. Three hours.**

Prerequisite: Sociology 365 or the consent of the instructor.

An examination of modern penology to include a survey in the structure and function of the correctional process, and a specialized study of trends, legislation, experiments and accomplishments in correctional programs. Topics such as inmate classification, institutional treatment and control and program evaluation will be emphasized. (Fall)

### **435G. Probation and Parole. Three hours.**

Prerequisite: Nine hours of Sociology. A survey of community treatment of convicted law violators, as part of the correctional process. Examines the role of probation and parole personnel. Attention is given pre-sentence investigation and selection, supervision and release. Includes prediction of behavior during and after probation and parole as well as administrative and judicial processes involved. May include field trips when practical. (Spring)

### **445G. Industrial Sociology. Three hours.**

Prerequisite: Sociology 346 or consent of the instructor.

The study of the factory as a social system, and the interrelation of industry and the social order. Selected problems of technological change, industrialization, and human relations in industry are examined. Attention is given to research implications for industrial behavior. (Spring and Alternate Summers)

### **450G. Occupations and Professions. Three hours.**

Prerequisite: Sociology 346 or the consent of the instructor.

An analysis of occupation specialization and the nature of occupational organization. A variety of occupations and professions will be examined to determine the place of work in the life of their members. Special attention will be paid to the impact of occupational membership on the behavior of the individual. (Spring, Alternate Summers)

### **465G. Mass Society and Mass Communication. Three hours.**

Prerequisite: Sociology 110 or Sociology 295 and consent of instructor.

An in-depth study of the relationship between the organization of mass society and its communication media. Propaganda and other mass persuasion techniques are examined as these relate to the formation, alteration or maintenance of public opinion and mass values. Particular emphasis is given to the impact of television on culture and social structure. Additional foci include

## *Sociology and Anthropology*

a cross-cultural, structural-functional analysis of the media as social systems. (Spring)

### **495G-496G. Directed Study. Three hours.**

Prerequisite: Consent of the Department Head. This elective is available to superior students who wish to conduct individual, intensive reading and research in a specific area of sociology in close cooperation with supervising faculty. Submission of such projects to student sections of regional professional meetings is encouraged. (Fall, Spring, Summer)

## **Graduate Courses in Anthropology:**

### **507. Elements of Anthropology. Three hours.**

Prerequisite: Graduate standing.

Designed as an advanced first course in basic anthropology for the non-anthropology graduate student. The course will be organized around the concept of culture, discussing such problems as the nature of culture, the materials of culture, the structure of culture, aspects of culture, cultural dynamics, and cultural variation. The course will attempt a general overview of the field of anthropology.

### **555. Seminar in Anthropological Theory. Three hours.**

Prerequisite: Consent of the Department Head.

An examination of the history and development of anthropological thought to the end of the nineteenth century and a survey of contemporary anthropological thought, with special reference to the methods and theory of scientific anthropology.

### **570. Appalachian Folklore and Folk Life. Three hours.**

See: English 570.

### **572. Applied Folklore. Three hours.**

See: English 572.

### **577. Techniques and Materials in Folklore Studies. Three hours.**

See: English 577.

### **578. Folklore and Folk Life Research. Three hours.**

See: English 578.

### **579. Directed Study and Research in Folklore. Three hours.**

See: English 579.

The following 400-level courses in Anthropology may be taken for graduate credit:

### **440G. Cultural Anthropology. Three hours.**

Prerequisite: Anthropology 150 or consent of the instructor.

A study of selected topics in ethnological theory and methods of analysis. Attention is given to comparative and functional analysis of culture configuration, and also to the historical development of theory in anthropology. (Spring)

## *Sociology and Anthropology/Speech and Theater*

### **491G-492G. Field Course in Archaeology. One to three hours each.**

Prerequisite: Anthropology 151, 280, 330 or consent of the instructor.

A field course emphasizing the techniques used by archaeologists for the recovery, preservation and recording of information pertaining to man's past. Course content includes archaeological survey, site excavation mapping and recording techniques and cataloging procedures. Excavation will usually be conducted on prehistoric Indian sites. (Fall, Spring, Summer)

### **495G-496G. Directed Study. Three hours per semester.**

Prerequisite: Consent of the instructor. (Fall, Spring, Summer)

## **Graduate Courses in Social Work:**

### **530. Seminar in the Sociology of Deviant Behavior. Three hours.**

Same as Sociology 530. Prerequisite: Sociology 505 or nine hours of sociology courses and consent of the instructor.

The following 400-level courses in Social Work may be taken for graduate credit:

### **425G. Problems in Social Welfare. Three hours.**

Prerequisite: Social Work 476 or 477.

Problems of current importance in the field of social welfare are identified and examined. Emphasis is placed on issues and problems in public welfare. The student in the seminar will be expected to give reports and papers on a topic related to a problem or issue identified in field experience as well as to do intensive reading on that topic. (Fall, Spring, Summer)

### **469G. Social Action. Three hours.**

Prerequisite: Nine hours of Social Work or permission of the instructor.

Concepts from the behavioral sciences are examined to aid the student in analyzing community structure and organization for the purpose of effecting change. Application of planned change theory will be sought in relation to defined social welfare needs. A social system orientation is used as the basis of theory. (Fall)

### **475G. Social Welfare Administration. Three hours.**

Prerequisite: Social Work 330 or permission of instructor.

Identification and analysis of the process of administration as related to practice. Emphasis is placed on the role of the worker in the processes by which groups and individuals meet community needs through planning, organizing, administering and coordinating social welfare services. (Spring)

## **SPEECH AND THEATRE**

### **Graduate Faculty:**

Distinguished Professor: Mitchell

Professors: Howard, Wilson

## Speech and Theater

Associate Professors: Capps (Head of Department), Leonard

Assistant Professors: Corts, Kell, O'Conner, Pearse, Stearns

### Degrees offered:

Master of Arts in Speech; Master of Arts in Education (Speech major or minor); Master of Arts in Education (Theatre minor)

#### Master of Arts in Speech

The program provides preparation for students wishing to teach at the college level; for those wishing to pursue additional graduate study; for those wishing careers in government or other fields where advanced study in speech would be helpful.

The candidate for the Master of Arts degree in speech may pursue Plan A or Plan B for the degree. The student should advise with his committee in the early stages of the program which plan he will follow. Students who anticipate additional study after the M.A. are strongly encouraged to follow Plan A.

The program is designed to give maximum flexibility to students pursuing the degree. Courses are organized in such a manner as to allow concentration in one of the following areas within the department: Communication Theory, Interpretation, Rhetoric and Public Address, Theatre and General Speech. Students may, with the permission of their advisor, take courses in related departments.

In order to pursue a graduate degree in speech a student must first be eligible for admission to the Graduate College. He also must have at least a minor (18 hours) in speech or the equivalent.

#### Master of Arts in Education (Speech major or minor; Theatre minor)

This program provides additional graduate coursework in speech or theatre and is designed for the public school teacher. The student following this program must meet all requirements for Standard High School Certification. The student majoring in speech may take a minimum of 18 or a maximum of 21 hours in speech, while the student minoring in speech or theatre may take a minimum of 12 or a maximum of 15 hours in that department. The remaining hours will be taken in professional education courses.

## Speech and Theater

### Graduate Courses in Speech:

#### 540. Seminar in Rhetoric and Public Address. Three hours.

Studies in theories of rhetoric through selected writers, periods and topics. The application of rhetorical standards to the speech-making of selected speakers, movements, areas, and periods. The course may be repeated once with a different topic.

#### 541. Seminar in Communication. Three hours.

Study of selected topics in communication theory. Suggested topics which may be covered: interpersonal communication, symbols in society, paradigms and models in communication theory, field research in communication, studies in political communication, etc. The course may be repeated once with a different topic.

#### 544. Theory of Interpretation. Three hours.

Consideration of the history and development of interpretive theory from ancient times to the present, tracing the use and development of the interpreter's art, with analysis of contemporary principles and practices.

#### 545. Seminar in Speech. Three hours.

The content of the course will vary from semester to semester depending upon the background of the students enrolled. If offered as independent study, the person will have an opportunity to pursue areas in which he has had adequate preparation. If offered as a class, timely topics will be covered.

#### 546. Seminar in Forensics. Three hours.

Seminar in Forensics will include a treatment of the principles and procedures involved in directing the standard forensic events. Events to be discussed are: debate, extemporaneous speaking, discussion, original oratory, analysis of a public address and some attention will be given to interpretative reading, duet acting, and story telling.

#### 549. Rhetorical Theory and Criticism. Three hours.

Development of the classical tradition in rhetorical theory, practice, criticism, and pedagogy, from pre-Aristotelian writings through those of the twentieth century British and American theorists. Analysis of major figures and works which contributed to that tradition.

#### 580. Diagnostic Procedures in Speech Disorders or Identification of Speech Disorders. One hour.

A study of the identification of speech disorders. Suggestions will be made as to the type of treatment available for the various types of problems.

#### 599. Thesis Research. Six hours.

Research, examination, and criticism of materials and the writing of a thesis.

**The following 400-level Speech courses may be taken for graduate credit:**

#### 405G. Phonetics. Three hours.

A study of speech sounds, their production and their acoustic properties.

## Speech and Theater

### 443G. Contemporary Rhetoric and Public Address. Three hours.

A survey of contemporary theories of rhetoric and persuasion related to public address combined with an analysis of contemporary public address. (Fall, spring)

### 445G. Research in Speech and Theatre. Three hours.

A general introduction to research in speech. Normally offered as an independent study course. (Fall, Spring, Summer)

### 446G. Classical Rhetoric. Three hours.

Greek and Roman theories of rhetoric; Plato, Aristotle, Cicero and Quintilian will be studies. (Alternate years Spring-even numbered years)

### 447G. American Public Address. Three hours.

A careful study and evaluation of selected speakers from American history. (Spring)

### 448G. British Public Address. Three hours.

The role of public discussion and persuasion in the development of English history as exemplified by significant English speakers and speeches.

### 481G. Introduction to Speech Pathology. Three hours.

An introduction to the field of speech pathology dealing with the development of speech and language, the cause and treatment of the simpler deviations from normal speech and language. The course will deal with identification of the more common speech problems and suggestions for the remedy of those problems. (Fall)

### 482G. Audiology. Three hours.

A review of the anatomy of hearing, the causes of loss of hearing and an introduction to the methods of testing, analysis and rehabilitation of people of all ages with hearing loss. (Spring)

### 483G. Speech Anatomy and Physiology. Three hours.

Designed to help students identify the structures and functions which comprise the speech mechanism. The relation of this mechanism to the production and development of speech and language will be treated. (Spring)

### 484G. Articulation Disorders. Three hours.

A study of the etiology, evaluation and management of articulatory disorders in children and adults.

## Graduate Courses in Theatre:

### 550. Seminar in Theatre. Three hours.

The course is designed to give graduate students the opportunity to further their experience in theatre through research and application. Students select for investigation interpretative, technical, or promotional problems according to their interests.

### 552. Dramatic Theory and Criticism. Three hours.

Study of the theories and practices within the theatre from Aristotle to present, establishing criteria for critical analysis.

## Speech and Theater

### 553. Restoration and Eighteenth Century Drama. Three hours.

Careful study of representative plays. Evaluation of influences, movements, and productions. Wide reading and individual study.

### 583. Shakespeare II. Three hours.

(See English 583)

## The following 400-level Theatre courses may be taken for graduate credit:

### 450G. Readers Theatre. Three hours.

Prerequisites: Speech 349 or permission of instructor.

A study of varied methods of group oral interpretation of literature with emphasis upon the short story, poetry, and drama. The course will include analysis of literature, preparation of Readers Theatre and Chamber Theatre scripts and performance in class projects. (Spring, Summer by demand)

### 452G. Stage Lighting. Three hours.

Lighting equipment is demonstrated and the student is provided practical experience in working with lights for the major productions, at a time other than the class period. Each student will design the lighting for a full length play. (Spring)

### 455G. American Drama. Three hours.

This course deals with the development of American Drama from its Colonial production of British plays and American adaptations of such plays to its present position in literature. This course enables the student to gain an over-view of American Drama as well as obtaining a study in depth of the works of the major American playwrights of the past forty years.

### 456G. Elizabethan Drama. Three hours.

An intensive study of the immediate predecessors and contemporaries of Shakespeare. (Spring)

### 458G. Theatre Practicum. Three hours.

Reading of plays and dramatic materials; study of various staging methods; choosing of script for production; prompt script with analysis of director's research; individual interpretation and production plans; final production. (Fall, Spring, Summer)

### 459G. Modern Drama. Three hours.

A selected study of dramatic literature since Ibsen with emphasis on evolving developments and trends in world theatre. (Alternate years—Fall—even numbered years)

### 499G. Studies in British Theatre. Three hours.

A study of the British theatre highlighted by a tour of England and the viewing of representative plays of the English theatre including visitations to supplementary historical and cultural sites.

## INTER-DISCIPLINARY PROGRAMS

The University offers two inter-disciplinary degrees: Master of Arts in Humanities and Master of Public Service.

### Master of Arts in Humanities

The graduate program in humanities is designed to provide the student a broad background in the intellectual and cultural achievements of a selected period of Western civilization. Building on the premise of the interrelatedness of all human endeavor, it traces the adventure of man's spirit as reflected in his history, literature, philosophy, and artistic accomplishments.

The minimum requirement for the Master of Arts in Humanities is thirty hours of graduate credit in courses approved by the advisor of the Humanities Program. At least 18 hours must be in courses numbered 500 or above.

The student will select one of three periods of Western civilization for his area of specialization: Ancient and Medieval; Renaissance through Enlightenment; Nineteenth and Twentieth Centuries. Twenty-one of the 30 hours are to be taken in one of these cultural periods and must include one course each from History, Literature, and Philosophy. Course work and independent research will be designed to give a comprehensive and integrated knowledge of the period.

Each student will take: (1) Philosophy 500, Humanities Seminar (three hours) and (2) Philosophy 599, Humanities Thesis (six hours) under Plan A or Philosophy 598, Humanities Essay (three hours) under Plan B. In either case, the research must be in the period chosen for specialization and must demonstrate a knowledge of the unifying relationships which exist between the various disciplines in the humanities. This research will be supervised by a member of the Graduate Faculty in the Department of English, History or Philosophy to be determined by the program advisor.

The student must demonstrate a reading ability adequate for scholarly work in either French or German. Students specializing in the ancient and medieval period may substitute either Greek or Latin.

The student must pass a final written examination during the last semester prior to graduation. The exam will center on his chosen period and include material from a selected bibliography given to the student upon entering the program.

### Master of Public Service

This degree is an interdisciplinary program consisting of offerings from several departments. It is designed to prepare individuals to serve in government positions which require administrative training as well as knowledge of the particular areas they are to administer.

Students pursuing the degree may select one of the following professional options:

- (1) Administration (see Department of Government, page 107)
- (2) Agriculture (see Department of Agriculture, page 24)
- (3) Child development and family living (see Department of Home Economics and Family Living, page 121)
- (4) City and regional planning (see Department of Geography and Geology, page 97)
- (5) Counseling (see Department of Counselor Education, page 56)
- (6) Recreation and park administration (see Department of Physical Education and Recreation, page 145)
- (7) Regional development (see Department of Economics, page 73)

## NON-DEGREE PROGRAMS

### Rank II—Non-Degree Program

Western Kentucky University provides the planned Fifth-Year Program for students who do not meet the general admission requirements of a degree program. This non-degree option can also be followed by students who want greater flexibility than is permitted in a degree program with regard to time allowed for completion, transfer limitations, and selection of courses.

Although the Fifth Year Program results in neither the master's degree nor standard certification, it does result in Rank II salary classification in Kentucky and renews the provisional teaching certificate.

### Guidelines

1. This program requires the completion of 32 hours of upper division undergraduate and graduate credits.
2. At least 18 hours must be taken at Western Kentucky University.

## Rank II/Rank I

3. A grade point average no less than that for undergraduate certification shall be required.
4. A minimum of 12 hours must be in professional education, a minimum of 12 hours in cognate areas, and, of the total of 32, a minimum of 12 hours in graduate level courses.
5. Course work taken by correspondence shall not apply to this program.

\*For further information and the guidelines of this program in connection with Rank-I-Teacher, see

## Rank I—Programs

Western Kentucky University offers the following Rank I programs in accordance with the minimum regulations prescribed by the Kentucky State Board of Education:

1. Rank I—Teacher (program leading to Rank I qualification for teachers)
2. Rank I—School Administration (the Professional certificate for School Administration and Supervision endorsed for School Superintendent)
3. Rank I—Standard Guidance (program leading to standard certification in Guidance).

## General Guidelines

Students who want to pursue any of these programs should apply through the office of the Dean of the Graduate College.

1. Rank I classification shall require the completion of either (a) 30 semester hours approved graduate level credit in addition to the requirements for a Rank II classification, or (b) 60 semester hours approved graduate level credit including a master's degree.
2. This program shall be planned in consultation with the student's advisor and shall be related to the professional needs of the student.
3. All of the course work must carry graduate credit, but a minimum of 15 semester hours must be in courses open only to graduate students.
4. On a Rank I program the student shall maintain a B standing, and no credit shall be given for a course grade lower than C.

## Rank I

5. Of the 30 semester hour program, at least 15 semester hours shall be taken at the college making the recommendation. The remaining 15 semester hours credit may be taken at the same institution or, upon approval of the college advisor, and the graduate college, at other institutions.
6. The Dean of the Graduate College shall certify to the State Department of Education when the curriculum requirements have been completed for Rank I program at the institution.

## Rank I—Teacher's Program

### Plan A—Based upon the Master's Degree

Students pursuing the Rank I—Teacher program under Plan A must have a minimum of 24 hours (of the total of 60 for the Master's and the Rank I) in academic work apart from professional education. These hours shall be in the candidate's major or minor, or area of preparation, or in supporting courses from other disciplines as approved by this institution.

### Plan B—Based upon Fifth Year Rank II Classification

Students pursuing the Rank I—Teacher program under Plan B must complete 30 semester hours of approved course work in addition to the requirements for Rank II classification for a minimum total of 62 hours. Of this 62 hour total, at least 24 hours must be in an academic area apart from professional education. These hours shall be in the candidate's major or minor, or area of preparation, or in supporting courses from disciplines as approved by this institution.

## Rank I—School Administration Program

Those pursuing Rank I—School Administration by following a program for endorsement under the Professional Certificate for School Administration and Supervision must possess the master's degree and complete Standard Elementary or Standard High School Certification before requesting any endorsement in this area. As a general rule, Western will require one-third (21 hours) of the total of 60 hours (on the Master's and Rank I) to be taken in the behavioral sciences or subject matter fields other than professional education.

## Rank I—Guidance Program

Those pursuing Rank I—Guidance by following the guidance program may complete the Standard Certificate for Guidance Counselors. This certificate is based upon the completion of the master's degree and

### Rank I/Doctoral Programs

the Provisional Guidance Certificate. As a general rule, Western will require one-third (21 hours) of the total of 60 hours (on the master's and Rank I) to be taken in the behavioral sciences or subject matter fields other than professional education. The remaining courses will be planned in the field of guidance. The Standard Guidance Certificate requires at least one year's experience as a full-time counselor on a Provisional Guidance Certificate. (For further details see Department of Counselor Education.)

## DOCTORAL PROGRAMS

### Cooperative-Doctoral with the University of Louisville

The program is limited to the Ph.D. with emphasis on Aquatic Biology. Admission requirements are described under admission procedures (p. 5); also see statement (p. 35).

The minimum time required for the Ph.D. degree is equivalent to three years of full-time graduate study, of which at least two years must be spent at the graduate level on the cooperative campus (Western Kentucky University campus and/or the University of Louisville campus). It is also required that a minimum of one year of full-time residence be spent on the cooperative campus.

The student's Graduate Committee will consist of at least five members with at least two members being from the University of Louisville Biology Department and at least two members being from the Western Kentucky University Biology Department.

Other requirements of the program include:

1. Comprehensive Examination. Upon entering the program, the student must take an examination over materials from the broad field of biology.
2. Study program. The student and his Graduate Committee will develop a program to fit the needs of the individual student. The program will consist of a major field and minor fields which are planned according to the need of the student.
3. Foreign Language. A student must demonstrate a reading knowledge in at least one modern foreign language before he can be admitted to candidacy for the degree.
4. Mathematics Requirement. The student must have satisfactorily

### Doctoral Programs

completed course work in calculus prior to application, or plan to meet the requirements early in the course of study.

5. Preliminary Examination. A preliminary examination, oral or written or both, must be successfully completed after the student has satisfactorily completed the major portion of the prescribed course work but before being admitted to candidacy.
6. Dissertation. A dissertation is required of all candidates for the Ph.D. degree.
7. Final Oral Examination. This examination is to be a defense of the dissertation and a demonstration of the candidate's mastery of his field.

### Joint-Doctoral with the University of Kentucky

Persons with outstanding qualifications who possess a masters degree or are nearing completion of a masters degree may petition to enter the joint program leading to the Ed.D. or Ph.D. in Education from the University of Kentucky.

To be eligible for admission to this program, in addition to having met the entrance requirements at Western, the student must meet the entrance requirements of the Graduate School of the University of Kentucky and the usual standards for admission to the doctoral program established by its College of Education.

A prospective candidate must file an application to enter the joint doctoral program with the Graduate College of Western Kentucky University. The applicant's qualifications will be evaluated by a screening committee which will make an appropriate recommendation to the University of Kentucky.

For each student admitted to the program a special advisory committee, known as the Special Doctoral Committee, will be appointed. This committee will represent both participating institutions.

Normally the student will continue in residence at Western Kentucky University for one school year (maximum 24 semester hours) after being admitted to the joint program. Variations as to period of residence at each institution may be approved by the student's committee in order that he may be better prepared to pass qualifying examinations.

Students desiring further information on this program should contact the Dean of the Graduate College, Western Kentucky University.

## ORGANIZATION OF THE UNIVERSITY

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**Western Kentucky University  
Graduate College**

(Form A)

**APPLICATION FOR ADMISSION**

1. Name:	(Last)	(First)	(Middle)	(Maiden)	2.	(Social Security No.)
3. Address: Present	(Street)			(City)	(State)	(Zip Code)
Home	(Street)			(City)	(State)	(Zip Code)
4. In an emergency, notify	(Name)			(City)	(State)	(Telephone Number)
5. Date of Birth	(Month)	(Day)	(Year)	6. Sex: <input type="checkbox"/> M <input type="checkbox"/> F	7. Marital Status: <input type="checkbox"/> Single <input type="checkbox"/> Married <input type="checkbox"/> Divorced <input type="checkbox"/> Widowed	
8. Citizenship	(Country)					
9. Race: <input type="checkbox"/> Negro <input type="checkbox"/> Caucasian <input type="checkbox"/> Oriental <input type="checkbox"/> Indian <input type="checkbox"/> Other						
10. Location of Employment	(City)			(State)	11. Are you a veteran? <input type="checkbox"/> Yes <input type="checkbox"/> No	
12. Current Occupation: <input type="checkbox"/> Education unrelated (please specify): <input type="checkbox"/> Education related: <input type="checkbox"/> Elementary; <input type="checkbox"/> Junior High; <input type="checkbox"/> Secondary <input type="checkbox"/> Guidance; <input type="checkbox"/> School Administration; <input type="checkbox"/> Other						
13. Type of Teaching Certificate Held (if any): Please specify type and area. <input type="checkbox"/> Provisional Elementary; <input type="checkbox"/> Provisional Secondary; <input type="checkbox"/> Provisional Guidance; <input type="checkbox"/> School Administration <input type="checkbox"/> Standard Elementary; <input type="checkbox"/> Standard Secondary; <input type="checkbox"/> Standard Guidance; <input type="checkbox"/> Specify:						
14. Undergraduate Degree-Granting Institution	(Institution)			(Degree)	(Year)	
15. Previous Graduate Study (if any):	(Institution)			(Degree)	(Year)	
16. Have you taken the Aptitude Section of the Graduate Record Examination? <input type="checkbox"/> Yes <input type="checkbox"/> No						
17. If previously enrolled at Western, give earliest date: _____ and most recent date: _____						
18. Have you been admitted to the Graduate College? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, when _____						
19. When do you plan to enroll? Year _____ <input type="checkbox"/> Fall <input type="checkbox"/> Spring <input type="checkbox"/> Summer 20. Where do you plan to enroll? <input type="checkbox"/> On Campus						
21. Are you a resident of Kentucky? (See instructions, reverse side) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Off Campus (Extended Campus)						
22. Do you plan to pursue a degree at Western? <input type="checkbox"/> Yes <input type="checkbox"/> No						
23. If you do not plan to pursue a degree, check the desired program from the following: <input type="checkbox"/> Rank I Teacher <input type="checkbox"/> Rank I School Administration <input type="checkbox"/> Rank I Guidance <input type="checkbox"/> Rank II Non-Degree <input type="checkbox"/> Transient (See Instructions, reverse side) <input type="checkbox"/> Special (See Instructions, reverse side)						
24. If you do plan to pursue a degree, check the desired program from the following:						

Master of Arts in Education	Master of Arts	Master of Science
<input type="checkbox"/> Secondary	<input type="checkbox"/> Child Dev. & Family Living	<input type="checkbox"/> Agriculture
major Education	<input type="checkbox"/> Economics	<input type="checkbox"/> Biology
minor	<input type="checkbox"/> English	<input type="checkbox"/> Chemistry
<input type="checkbox"/> Junior High	<input type="checkbox"/> Folk Studies	<input type="checkbox"/> Engineering Physics
major Education	<input type="checkbox"/> Government	<input type="checkbox"/> Geography
minor	<input type="checkbox"/> History	<input type="checkbox"/> Library Science
<input type="checkbox"/> Elementary	<input type="checkbox"/> Humanities	<input type="checkbox"/> Mathematics
<input type="checkbox"/> School Counselor	<input type="checkbox"/> Psychology	<input type="checkbox"/> Physical Education
<input type="checkbox"/> School Personnel Services	<input type="checkbox"/> Sociology	<input type="checkbox"/> Physics
<input type="checkbox"/> School Business Administrator	<input type="checkbox"/> Spanish	
	<input type="checkbox"/> Speech	

Master of:	Master of Arts in College Teaching in:	Specialist Degree in Education
<input type="checkbox"/> Business Administration	<input type="checkbox"/> Biology <input type="checkbox"/> History	<input type="checkbox"/> Counselor
<input type="checkbox"/> Music	<input type="checkbox"/> Chemistry <input type="checkbox"/> Humanities	<input type="checkbox"/> Elementary
<input type="checkbox"/> Public Service (option in):	<input type="checkbox"/> Geography <input type="checkbox"/> Spanish	<input type="checkbox"/> Secondary
<input type="checkbox"/> Administration	<input type="checkbox"/> Mathematics	<input type="checkbox"/> School Administration
<input type="checkbox"/> Agriculture		
<input type="checkbox"/> Child Dev. & Family Living	Cooperative-Doctoral	Specialist Degree in College Teaching
<input type="checkbox"/> City and Regional Planning	<input type="checkbox"/> University of Kentucky	<input type="checkbox"/> English
<input type="checkbox"/> Counseling	<input type="checkbox"/> University of Louisville	<input type="checkbox"/> History
<input type="checkbox"/> Recreation & Park Administration		
<input type="checkbox"/> Regional Development		

Mail to: Graduate College  
Western Kentucky University  
Bowling Green, Kentucky 42101

Signature \_\_\_\_\_ Date \_\_\_\_\_  
Date Received in Graduate College: \_\_\_\_\_

**Western Kentucky University  
Graduate College**

**Application Instructions and  
Residency Verification**

**Application Instructions**

**Transcripts.** Applicants who are not Western Kentucky University graduates must forward to the Graduate College two official transcripts from the undergraduate degree-granting institution showing the completed degree. Those applicants who have not completed their undergraduate degrees should forward only **one** official transcript at the time of application and **two** official transcripts after the degree is completed and recorded.

**Graduate Record Examination—Aptitude Section.** If the applicant has taken the Graduate Record Examination—Aptitude Section and has not had the scores forwarded to the Graduate College, he should do so.

**Transient Students.** Students working toward a degree at another institution, must complete Form A (Application for Admission), but they are not required to have transcripts forwarded.

**Special Students.** A Special Student is a student not seeking an advanced degree at Western Kentucky University. An application for special student status is not complete until an official transcript of the student's undergraduate degree is on file.

**Registration Packet.** The Application for Admission is used to prepare the student's initial registration packet for the semester or summer session which he plans to enroll. If his enrollment plans change, he must inform the Graduate Office prior to the semester or summer session in which he ultimately enrolls.

**Verification of Residency Status**

Please read the following statements carefully, sign and return to the Graduate College if you are claiming a Kentucky residency status.

The following statements are from guidelines which were adopted by the Commonwealth of Kentucky Council on Public Higher Education to provide common definitions, interpretations, and administration among the state-supported institutions of higher learning in Kentucky.

A person's **legal residence** is his permanent dwelling place. A student who has not established residence in Kentucky is classified as an out-of-state resident. For tuition purposes, a person does not establish a legal residence merely by spending time in Kentucky, payment of taxes, owning real property, or by attending an institution of higher education. A student who is eligible to enroll as a resident student in another state cannot be enrolled as a resident student at a Kentucky state-supported institution of higher learning. A legal residence is never lost until a new one is established. A student attempting to establish residence in his own right is presumed to have met the requirements for residency when he has maintained continuous residence in Kentucky for at least one academic year exclusive of any time spent in attendance at any institution of higher learning in Kentucky. Thus, residence must be established in Kentucky for a purpose other than enrollment at an institution of higher education. No person shall be presumed to have gained or lost in-state residence in Kentucky while serving in the Armed Forces. Persons assigned to military duty and residing in Kentucky for an indefinite period of time shall be considered residents of the Commonwealth of Kentucky. Aliens lawfully admitted to the United States for permanent residence may establish Kentucky residence in the same manner as any other non-resident. An alien who possesses a student visa cannot be classified as a resident.

The burden of proving legal residence rests with the student. Final responsibility for the classification of students as to residency and the assessment of appropriate enrollment fees is vested in the respective governing boards of the institutions of higher education.

I hereby affirm that, after reading the above statement, I qualify as a Resident of Kentucky.

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(Signature)

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(Date)